

ACTION-APS-AAPM
Pain Taxonomy for Acute Pain

April 29, 2016

A Matter of Record
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1 ACTTION

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4 Developing the Framework for a

5 Comprehensive and Evidence-Based ACTTION-APS-AAPM

6 Pain Taxonomy (AAAPT) for Acute Pain

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10 Friday, April 29, 2016

11 8:03 a.m. to 3:49 p.m.

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16 Sofitel Washington DC

17 Lafayette Square

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1 P R O C E E D I N G S

2 (8:03 a.m.)

3 DR. TERMAN: Good morning. I'm still

4 Greg Terman from the American Pain Society. I hope

5 you had a pleasant evening. I'm going to be

6 introducing the speakers this morning. I think

7 there's a little -- I'm sorry? Right, there's

8 housekeeping.

9 So if any of you have any housekeeping

10 issues in your rooms, Dr. Turk will --

11 (Laughter.)

12 DR. TURK: Dr. Terman is available 24/7 for

13 any of you who have any concerns. He does windows

14 and all kinds of other -- just very quickly, so you

15 all know the importance of signing in and that

16 there is taxi sign-up.

17 So for those of you that are looking toward

18 going to airports this afternoon, you should sign

19 up in the sign-up sheet. Make sure also you signed

20 in.

21 If any issues have come up about your hotel

22 room or about your travel plans, talk to Valorie or

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1 Andrea in the front. They tell me they're
2 available 24/7. Any time you call them, you could
3 expect that they will respond to you at the exact
4 same time 24 hours later.
5 (Laughter.)
6 So if you call them at 3 a.m., in the
7 morning, you're going to get a call back at 3 a.m.
8 But that's all.
9 Any housekeeping issues, any concerns?
10 Lunch will be in the same place it was
11 yesterday on the -- the second floor in the
12 Madeleine Room, I believe. Any issues, any
13 problems, anything that's come up? Hopefully, you
14 all had an opportunity to resolve all the questions
15 from yesterday.
16 Yesterday was a fun day, and then today, you
17 get to work. And this afternoon, we're going to
18 make sure that we finish off the beginning draft.
19 Obviously, you'll see it subsequent times after
20 that. And we will go as late as it takes until
21 you've reached a consensus.
22 So we booked this room until midnight, and

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1 we're quite available. And no one is permitted to
2 leave until that consensus. Greg?
3 DR. TERMAN: All right. So there's going to
4 be -- I think it's eight talks about different, I
5 guess, in yesterday's terminology, events that
6 produce acute pain. And there will be a break in
7 between at some point.
8 The people asked to talk about these events
9 were asked to try and put those situations into the
10 5 dimensions from the original AAPT. And unless
11 they changed their slides a lot last night, that's
12 what they've done.
13 Steve has been kind enough to redo some of
14 the work that we did yesterday, rewrite some of the
15 dimensions that we talked about. But obviously,
16 it's almost a philosophical question as to whether
17 we really want to have completely different
18 dimensions or whether there's a way to try and stay
19 kind of close to the original AAPT.
20 So there may be ways -- there may be
21 importance of host factors in chronic pain, for
22 instance, and they may already be embedded in the

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1 previous AAPT output.
2 So the first person is going to be talking
3 today -- and do please think about the integration
4 versus kind of lumpers and splitters that we talked
5 about yesterday. The first person is going to be
6 Chris Wu, talking about surgical and procedural
7 pain. He's from the Johns Hopkins Medical School.
8 And I'll just get off the stage.
9 Presentation -- Chris Wu
10 DR. WU: Thank you very much, Greg.
11 So as Greg mentioned, this was somewhat
12 challenging. Instead of creating a new algorithm,
13 we're trying to fit potentially acute procedural
14 surgical pain into the dimensions we have, and then
15 potentially propose potential other dimensions, and
16 then looking at some surgical procedures or other
17 type of procedures where we might apply whatever we
18 come up with to sort of examine the reliability,
19 the validity -- again, the 5 dimensions that we'll
20 be discussing.
21 What I did was to sort of list onto the top
22 what the original -- and I'm not going to read the

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1 entire thing -- what was for the chronic pain, and
2 then try to at least give you an idea of what we
3 might have for the acute pain, procedural and
4 surgical pain setting.
5 So again, the first, Dimension 1 for the
6 chronic pain, signs and the diagnostic findings.
7 For acute pain, certainly, I think the signs and
8 symptoms, you could think of it as a more -- again,
9 this is up for discussion -- a more homogenous than
10 we might see for our chronic pain colleagues or
11 patients.
12 I think we mentioned this yesterday. The
13 diagnostic test findings may not be as relevant
14 because, obviously, we have an inciting event. So
15 this part may be a little more straightforward
16 because, presumably, you have a discrete injury or
17 insult. So that might be a little different.
18 For the second dimension, the chronic pain,
19 this is a little lengthy in terms of common
20 features. Again, you think about what chronic pain
21 has to do. We have to try to identify what might
22 be CRPS and things like that.

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1 So again, you're going to have different
2 characteristics, location, temporal qualities,
3 other non-pain features that might affiliated with
4 these diagnoses. And then obviously, these are not
5 components of the core diagnostic criteria.
6 So for acute pain, I think some of these
7 will be important. Some of these we discussed
8 yesterday regarding the disorder.
9 We certainly want location -- some of these
10 other factors, location, temporal qualities as we
11 mentioned, whether we mentioned the long potential
12 transition into chronic post-surgery pain, that's
13 up for debate or may be placed in other locations.
14 Obviously, descriptors are very important.
15 Then non-pain features, the only thing with
16 this is that, yes, you can have things like
17 numbness and fatigue, but as you'll see in there
18 later on, for some of us who do acute
19 pain -- again, Deb and I were just at a conference
20 where the acute pain is no longer -- we're not
21 interested in just the pain severity, but there's
22 many other factors our acute pain patients will

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1 experience, things that will affect social
2 functioning, other physical functioning, sleep.
3 So it's a multidimensional concept. Whether
4 we put this here or other places, we can discuss
5 that later.
6 The common medical comorbidities, again,
7 with our chronic pain patients, we have many
8 patients who have medical and psychiatric
9 disorders. Particularly, this was mentioned, major
10 depression. Again, that's not uncommon for someone
11 who has a chronic pain condition.
12 Now, for acute pain -- and this was brought
13 up yesterday -- typically, we'll just focus on the
14 pain, treating the pain. But again, we are
15 becoming more cognizant that it's not just a
16 physical symptom, that we have to recognize that
17 there are psychosocial issues involved with are our
18 patients despite the fact that it is presumably a
19 brief insult.
20 I can't remember -- maybe, Dan, it was your
21 slide where they had pain is isolating. So these
22 are things that we have not been really adept at

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1 addressing in our post-operative pain patients. So
2 it's something that we probably need to do.
3 Obviously, I don't think it's going to be
4 the major depression in most cases that our chronic
5 patients will have, but certainly that is an
6 important part that we need to address for our
7 acute pain patients.
8 Again, we need to recognize the factors that
9 may be an important for the development of chronic
10 post-surgical pain.
11 In terms of the other medical comorbidities,
12 we mentioned opioid-tolerant patients, and there
13 may be other medical comorbidities where the
14 treatment may be difficult, for instance,
15 obstructive sleep apnea and use of opioids.
16 The fourth for chronic pain, we talked about
17 the neurobiological, psychosocial, and functional
18 consequences. Again, these are things like sleep
19 and mood disorders. And again, similarly for acute
20 pain, we have these. We have not focused on them,
21 frankly, as much as we should. But certainly, we
22 need to look at how pain will affect, even if it's

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1 brief, their social function, their physical
2 function, and things like sleep quality.
3 Again, we are transitioning -- many of us
4 are thinking instead of just a unidimensional
5 assessment of pain to a multifactorial assessment,
6 which includes not only the pain level itself but
7 these other related factors.
8 Finally, the 5th dimension, the putative
9 neurobiological and psychosocial mechanism, risk
10 factors, again, this is self-explanatory for the
11 chronic pain.
12 We do certainly have this for acute pain,
13 although we don't think of it like that for our
14 acute pain patients. But certainly, again, this is
15 where we might think of our risk factors for the
16 development of chronic post-surgical pain, if
17 that's something we want to address.
18 There are certainly other dimensions.
19 Again, we'd like to just throw this out. Some of
20 these, I haven't mentioned. We can think of a
21 temporal aspect of it.
22 Obviously, the acute pain, the different

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1 insults will have different lengths of injury.
2 Although this is somewhat one-dimensional, we can
3 obviously group them by anatomic location or tissue
4 type. Those are something that Tim mentioned
5 yesterday.
6 So whatever we decide we have, once we have
7 those, this taxonomy, we have to apply that to see
8 if this is valid and reliable. So the things we
9 want to look at, at least we have thought about in
10 the conference, is we have to address procedures
11 that are relatively common, that may be clinically
12 important.
13 Certainly, we want to look at research
14 opportunities. I'm not sure for regulatory or
15 other issues, we certainly want to make sure that
16 it's valid for different age groups, different
17 ethnic groups, and then obviously genders also. So
18 we have to think about that as we propose the
19 procedures.
20 So thinking about the potential procedures,
21 I've listed -- and again, this is up for
22 discussion -- 1 abdominal, 1 thoracotomy, and

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1 2 orthopedic procedures. Obviously, there may be
2 more.
3 I chose cesarean delivery, again, this is a
4 very common procedure, obviously all female. But
5 you do have different types of pain, any sort of
6 visceral-musculoskeletal pain. And
7 surprisingly -- maybe not for most of us men, I
8 guess, but it is very painful.
9 There's an article in Anesthesiology 2013
10 that said it's the number 9 most painful procedures
11 out of 179, and then the question of whether
12 there's a possible link to chronic post-surgical
13 pain. Now, that's something that is a potentially
14 useful procedure to look at.
15 Another one would be a thoracotomy, again, a
16 relatively common procedure mostly in adults. But
17 it is a relatively painful procedure with potential
18 transition to chronic post-surgical pain. And
19 obviously, men and women will undergo this
20 procedure.
21 The last two are orthopedic procedures, but
22 they're really different in some ways. One is a

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1 more limited knee arthroscopy ACL reconstruction;
2 again, very limited, very common, but you would
3 think mostly a limited -- particularly with a scope
4 procedure, a limited duration of pain.
5 Obviously, both men and women have it. And
6 then we do have both adult and children. Although
7 the children is not -- you probably would get
8 mostly teenagers. Again, we see more and more
9 people, our teens playing sports. I wouldn't say
10 they're very young children, but certainly in the
11 teens. So that's a population we can capture.
12 Finally, I think spine surgery is very
13 important to look at. This is obviously a very
14 painful procedure. You have different types of
15 pain: bone, muscle spasm.
16 These typically are very difficult to treat
17 because they're opioid-tolerant patients. And then
18 obviously, this connection to chronic pain is
19 present, and we do have -- it's mostly adults, but
20 we cover both genders, and again, this issue of
21 long-term pain.
22 Now again, this is procedural pain, so we

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1 can think of other nonsurgical things that we might
2 be looking at. And again, if you look at something
3 like subcutaneous injection. Obviously, it's
4 typically very, very self-limited. But if you
5 think of something like vaccines, it's very, very
6 common.
7 Then actually, if we look at the vaccine
8 literature, they have quite a bit on this, on sort
9 of pain related with vaccines. It covers both
10 genders, obviously. We both have all age ranges
11 from infants to geriatric patients.
12 Less common is lumbar puncture, but again,
13 it's self-limited. It covers both genders and all
14 age groups. And then finally, any type of biopsy
15 pain, again, we can think of whether it'd be a bone
16 marrow, a breast biopsy, depending on what we're
17 looking at, we have both genders, again, and all
18 age groups.
19 So those are the things to think about.
20 There are certainly others, but I just propose
21 those so that those are things we might be applying
22 our taxonomy to later on.

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1 Just quickly for this Anesthesiology 2013
2 article -- I'll just show you -- the top obstetric,
3 orthopedic, general surgery, neurosurgery are the
4 most painful procedures overall. Then, if you look
5 at the worst pain since surgery, again, it's mostly
6 the orthopedic, the myomectomy is number 4, which
7 was somewhat surprising to me. But again, most of
8 these are orthopedic procedures.
9 Again, I tried to look at using our existing
10 dimensions and trying to fit acute
11 procedural/surgical pain into that and see how that
12 might fit, proposed some surgical and procedures
13 that we might look at later on.
14 Again, the discussion that we had yesterday,
15 obviously it's not going to be very easy. But the
16 5 dimensions do have some merit, at least to look
17 at, before we decide to move on to maybe a totally
18 new taxonomy.
19 All right. Thank you very much.
20 (Applause.)
21 DR. TERMAN: So I'm going to assume we want
22 to hold questions until later? Hold the questions.

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1 So are there any specific questions on
2 that -- and again, not the bigger questions
3 but -- so Chris Bernard?
4 DR. BERNARD: Yeah. Hi. Just a comment,
5 actually. I think under orthopedic, as an example,
6 I think that the bunionectomy patients, an
7 orthopedic procedure actually is surgery. So that
8 might be listed also, Chris, on your slide and in
9 the paper.
10 Then talking about other factors, I don't
11 know if it was number 2 or 3, in the acute
12 situation, obviously, catastrophizing, as it is for
13 chronic pain, certainly should be considered. But
14 also, anxiety, because it isn't a chronic pain. It
15 is often a new pain to patients.
16 So the anxiety and its relationship to acute
17 pain should be considered I think in all of these
18 surgical conditions, especially those that deal
19 with trauma.
20 DR. WU: Yeah. I think those are two good
21 points. I think the bunionectomy, it has been well
22 studied in the acute pain model. Again, I was just

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1 limited -- I had to choose where I had two
2 orthopedic models. But certainly, that's one that
3 could be easily replaced with, let's say, ACL. I
4 think the spine should probably stay.
5 I think you're correct. As we mentioned
6 yesterday, there are other factors, catastrophizing
7 anxiety. Those are things that we can insert into
8 the dimensions if we choose to use that. Those
9 are -- yeah.
10 DR. BERNARD: Just a suggestion.
11 DR. TERMAN: Okay. Seeing no further
12 questions, we'll move on.
13 Trip Buckenmaier from The Uniformed Services
14 Hospital and University is going to come and talk
15 about traumatic pain, including burns.
16 Presentation -- Trip Buckenmaier
17 DR. BUCKENMAIER: I appreciate this
18 opportunity. I do go by "Trip." Chester is a way
19 too painful name to have to go through life with.
20 (Laughter.)
21 DR. BUCKENMAIER: I feel I need to start out
22 by apologizing because I was not present yesterday,

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1 and I think that was pretty obvious to this august
2 body. I really wanted to be present because I
3 think this is so vital for the system that I spent
4 my career.
5 The sad fact of my career since 9/11 when I
6 actually finished my training, I've really done
7 nothing since then but clinically managed or
8 research trauma pain in our soldiers after 15 years
9 of conflict, if you can imagine. Yes, those wars
10 are still going on.
11 But the Defense Health Agency, which after
12 retiring, I went right back in the belly of the
13 beast as a federal employee essentially doing the
14 same work much to the chagrin of my spouse. But it
15 is a group of 6-year-old children, and they will
16 quite happily burn the building down around
17 themselves, and then bitch at you for not stopping
18 them.
19 So that's what I was doing yesterday. I was
20 trying to prevent my colleagues from burning the
21 building down around them. And it's a full-time
22 job, and it was just a bad nexus.

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1 Sadly, I could redeem myself today, but I'm
2 not. My boss for the last 10 years is retiring, so
3 when I finish this, I'm going to have to go to
4 Defense Health Agency because there's no way after
5 of decade of work with this man that I couldn't go
6 and honor him.
7 But I'm really impressed with what I've
8 heard so far. I think this is a tremendous
9 opportunity. And that taxonomy is desperately
10 needed if we're going to be able to build this
11 system.
12 Goals. I did try to think about this in
13 terms of the dimensions from this article and make
14 some suggested associations. I don't think
15 anything that I'm necessary going to say is going
16 to be really surprising. I'm hearing a lot of
17 consistency and so I'm encouraged that we're going
18 to be able to find a pathway forward.
19 We have what we call BLUF. When you're
20 dealing with generals, you only get one page. So
21 you'll go ahead and put all your slides on there,
22 but you get one slide called the Bottom Line Up

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1 Front. And that's usually the only slide you get
2 through before the general start talking. They
3 actually get paid by the word, and so you don't
4 really get many comments.
5 So trauma and burn pain are defined by
6 mechanism of injury. I really kind of focused on
7 this organ system approach from a trauma
8 perspective because that's how I ordered it in my
9 mind when we were dealing with these folks.
10 When I was trying to develop a plan,
11 particularly after an acute injury in Iraq or
12 Afghanistan, I was thinking about the systems that
13 were involved, the bones that were broken, the skin
14 from a burn, for example, and how I would manage
15 the various tools in my armamentarium
16 pharmacologically, peripheral nerve blocks, central
17 nerve blocks and the like, to deal with this
18 specific individual that was in front of me.
19 But the real issue that I thought, whether
20 it's a hospital or a military prosecuting a battle,
21 was a system in place to manage this patient far
22 beyond the acute setting.

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1 So this idea that acute pain lasts only
2 3 days, or 7 days, or 2 weeks is an anathema to me
3 because that's not what I've experienced in the
4 last 15 years of conflict, particularly with this
5 type of trauma.
6 It definitely has a psychological and
7 emotional component. I'm of the opinion that this
8 focus on intensity as our sole metric for measuring
9 pain for so many decades has, essentially, in the
10 large part, is responsible for the hole that we've
11 dug ourselves into right now with opioids.
12 As an anesthesiologist out in the battle
13 field, if intensity is my goal to manage, well
14 really, the best drug out there is opioids. I can
15 get your pain to zero. You'll be blowing spit
16 bubbles and useless, but I'll have your pain to
17 zero. And it certainly isn't doing anything about
18 your psychological or emotional component with your
19 pain.
20 What was so poignant and revolutionary about
21 the regional anesthetic was not the impact it had
22 on pain intensity; it was the impact on the ability

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1 of the patient to relate to their caregivers and
2 relate to the system that was evacuating them, so
3 they began to work on their recovery.
4 I've written about various soldiers, but one
5 in particular, I'll tell one war story since I got
6 20 minutes. He's a British lieutenant. He had his
7 ankle blown off, had the education to know, "Wow.
8 My life has really changed."
9 I got some morphine from the British. They
10 still use auto-injectors, wasn't touching him.
11 He's 10 out of 10 pain, and I looked in his eyes
12 and I said, "Don't worry. When you wake up from
13 this operation, you'll be pain-free."
14 That's pretty ballsy. But I knew that with
15 ultrasound technology at the time in 2009, we'd
16 place these blocks and the kid would wake up and be
17 pain-free. It was a very busy day that day; it was
18 a bad day for coalition. And I finished with him,
19 put the blocks in, threw him in the recovery room
20 and had to go back and do other cases.
21 When I went back, yes, his pain intensity
22 was zero. You know what was more important though?

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1 When I went back to look at him, he was on the
2 phone to his mother and said along the lines of,
3 "Mom, they took my foot but I'm okay" -- he's
4 talking to his mother; this is less than a few
5 hours after his operation; his foot has been blown
6 off -- "and I'll see you in a few weeks."
7 Think about that. That's the goal that I
8 think we should be establishing for ourselves with
9 this taxonomy and why I'm pausing on this
10 psychological and emotional component because
11 that's where I think a lot of the meat of this
12 actually exists.
13 There are genetic, and epigenetic, and
14 psychological factors that I am aware of but
15 certainly don't understand. And I think we as a
16 community don't understand and have a lot of work
17 to do. But that can't be ignored.
18 Then acute trauma and burn pain appears to
19 fit with dimensional model. At the time when I was
20 doing this, that's how I felt. I can be swayed.
21 (Laughter.)
22 DR. BUCKENMAIER: You know, core diagnostic

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1 criteria -- I'm going to go through this very
2 quick -- but I was lazy. I pulled out a dictionary
3 and I just looked, well what's "trauma" definition?
4 It's an injury, so there's a tissue
5 component. It has a psychic and behavioral state
6 also. You can traumatize your psyche and
7 certainly, we've demonstrated that to ourselves in
8 our soldiers. And there's an emotional component
9 that can't be ignored.
10 These themes continue to repeat for me
11 through this. So I produce these comments again.
12 I'm not going to belabor or read the slides to you.
13 But there is a physical and emotional component, so
14 those categories kept coming up for me personally.
15 Common features. The way I've always
16 ordered trauma in my mind is by the mechanism. If
17 it was a burn, a mechanism was the burn, and then I
18 would think about the organ systems involved, in
19 this case the skin as an organ system, and then
20 what was going to mean to me diagnostically as far
21 as therapy and how my therapy for pain was going to
22 interrelate with that.

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1 That's a key feature of being an acute pain
2 physician, is having a taxonomy to discuss these
3 issues with the trauma team because our language
4 has to mesh with the actual goal of the patients
5 surviving this trauma, which we've been very good
6 at by the way, less than 10 percent died of wounds
7 rate.
8 But in many cases, because of these pain
9 issues, we've been snatching defeat from the jaws
10 of victory when we have not paid attention to pain
11 throughout the various siloed roles of care. So
12 while we're very good at stopping the bleeding, and
13 mending the bones, and healing the wounds, when the
14 patients heal, they end up with chronic pain
15 because we weren't paying attention to the
16 chronification of that pain as they were moving
17 through our system.
18 Each silo was doing the right thing for the
19 patient, and when I was in my silo on the
20 battlefield, I could get your pain to zero, but
21 then you're out of sight, out of mind, and nobody
22 was paying attention to what was happening between

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1 the nodes. So you'd arrive at the next node in
2 agony, and we start the process again.
3 As Wolf has pointed out to us, it doesn't
4 matter if you preempt the pain. If you allow it to
5 reoccur anywhere along the pathway, you get the
6 same unwanted consequences that we've been
7 discussing.
8 Dimension 3, all trauma including burns is
9 going to have a psychological and emotional
10 component, which we've stated again. Pre-trauma,
11 physical and emotional conditioning will
12 significantly influence that.
13 I put that on there because I think of this
14 idea of acute and chronic pain, again, as
15 artificial. It's very important from a system's
16 approach to have people working in the acute space
17 and have people working in the chronic space. But
18 I think we need to think of it as a continuum, and
19 that actually, there are factors that the patient
20 shows up to at the injury, at the point of injury
21 that will influence how they're going to respond in
22 terms of developing chronic pain or the

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1 chronification of the acute pain.
2 I thought that it's appropriate to look at
3 the mechanism of injury and the organ system
4 involved as two very important categories.
5 From a neurobiological, psychosocial, and
6 functional consequences -- again, I'm repeating
7 myself because this theme continued to seem to
8 repeat for me that a psychological and emotional
9 response to the trauma or the burn is as important
10 as the physical aspects of the burn itself.
11 The pain response to a given individual in a
12 common trauma mechanism can vary considerably and
13 is likely influenced by genetic, epigenetic, and
14 psychological factors. Again, this is a big deal
15 in the military right now where we're trying to
16 build resiliency in the soldier.
17 We're actually trying to pretreat this
18 population that we're putting into an environment
19 where they're exposed to a situation where they
20 will have trauma. And we feel that if they're
21 physically fit, emotionally fit, that they'll be
22 able to respond to their recovery and

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1 rehabilitation far better.
2 To do that sort of work, you have to have
3 far better measuring systems than I think we have
4 today, and that's been a big focus with the DOD,
5 and with our own pain scale, the DVPRS and PASTOR,
6 PROMIS, which leverages the NIH PROMIS measures and
7 biopsychosocial outcomes.
8 I really like this slide, and this has had a
9 lot of penetrance with our leadership up at DHA,
10 about the relationship between chronic pain, PTSD,
11 and TBI.
12 Unless you have a decent taxonomy and
13 understanding of how to describe pain states, you
14 can't really deal effectively with the PTSD and the
15 TBI, and, boy, we've learned this in spades in the
16 last 15 years.
17 Dimension 5, you've already seen this slide
18 because Dan, as usual, preempted me, but Matt
19 Gallagher is the primary author on this, a big
20 mentor and great friend of mine. But this is the
21 chronification of pain cycle. And I'm of the
22 opinion, it's hard, but to ignore that right now

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1 would be a huge mistake because we already have
2 data from 15 years of conflict that states that the
3 things that we do on the battlefield do influence
4 weeks, months, years later on the outcome of these
5 soldiers.
6 So this chronification phenomenon is not a
7 subjective idea to me; it's a physical reality that
8 we're actually dealing with right now. No, the
9 data is not pristine and it probably will not be
10 for quite some time, but that's no reason not to
11 start developing a lexicon to deal with this
12 reality.
13 Historically, pain has been seen as a
14 symptom, and I think we need to look at it as a
15 disease process. From a preventive medicine
16 standpoint, disease processes have a point where
17 you can prevent them -- I look at acute pain as a
18 way to do that -- and they have a point where they
19 become chronic and they need to be managed. And I
20 see that we have a role for chronic pain providers
21 also.
22 So these are some of diagnostic groups that

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1 I propose from this effort. And again, I applaud
2 this group, and I appreciate this opportunity. And
3 I really am sorry that I'm such a jackass for not
4 being here.
5 (Laughter.)
6 (Applause.)
7 DR. TERMAN: Any questions, particularly
8 about that last remark? Yes?
9 MALE SPEAKER: Why is he such a jackass?
10 (Laughter.)
11 (Crosstalk.)
12 DR. TERMAN: Let's definitely move on.
13 (Laughter.)
14 DR. TERMAN: So our next speaker is Steve
15 Stanos from Swedish Medical Services in Seattle at
16 the University of Washington. We call that "the
17 competition."
18 (Laughter.)
19 DR. TERMAN: And he's going to talk about
20 musculoskeletal pain.
21 Presentation -- Steven Stanos
22 DR. STANOS: I'm sorry, Trip. I'm thinking

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1 about Al Franken, "You're thoughtful, and, darn it,
2 people like you." Remember that one?
3 I'm Steve Stanos. It's great to be here. I
4 moved to Seattle a year and a half ago, and
5 whenever I would do a presentation -- I'd been in
6 Chicago for many years before that -- I always had
7 to get up there -- and there was always something
8 bad in the news about Chicago. Unfortunately, I
9 think Speaker Hastert and the unfortunate victims
10 he had, it's been a bad week for politicians.
11 But I always make comments about our
12 governors because we had like three governors in
13 jail at one time. We got down to one governor. So
14 the idea was in Chicago that you're safe if there
15 was at least one governor in jail. So I think
16 Blagojevich is still in jail. I had a great
17 picture of Blagojevich. That was the big,
18 thick-haired guy. He's still in jail.
19 But I moved to Seattle. The news is not
20 interesting.
21 (Laughter.)
22 DR. STANOS: I mean, they're digging

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1 like -- Bertha, they're digging under the viaducts,
2 and it's three years behind. That's the big news.
3 I'm like, "Can't you guys think of something? I
4 need corruption, something bad to happen."
5 So no offense, John and everyone from
6 Washington.
7 I'm going to talk about acute
8 musculoskeletal pain. I want to make this a little
9 more interactive. I know that sometimes could be
10 scary. I kind of think of this as more of a
11 physiatrist than a pain specialist because a lot of
12 what we're talking about here, with acute pain, I
13 think we as chronic pain physicians look at like
14 post-operative pain, hospitalized pain from trauma.
15 But I want to almost shift it towards what's
16 very common, which is under this whole realm of
17 musculoskeletal symptoms and conditions, which is
18 itself a very heterogeneous group.
19 Again, in preparing for this, like many of
20 us, I was trying to figure how do I fit these into
21 these different criteria and dimensions. And I
22 think over time, a lot of the stuff that we're

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1 thinking about with acute musculoskeletal pain
2 actually is this continuum to chronic pain. So
3 hopefully, we can kind of figure out a way that we
4 can continue with some of these dimensions and
5 integrate those.
6 There's been a lot, I think, just from an
7 epidemiologic standpoint. It's actually the decade
8 of Bone and Joint Health from 2010 to 2020. This
9 is actually a very good review talking about just
10 the changes in musculoskeletal conditions to be
11 expected even by 2040 and 2050 with the aging
12 population.
13 There's so many different parts of the
14 society that are going to be affected
15 "musculoskeletal conditions," yet our diagnostic
16 criteria is somewhat lacking.
17 These numbers go over 25 million people
18 affected. I think work days lost, cost. We're all
19 familiar with the National Pain Strategy and the
20 Institute of Medicine report talking about the cost
21 of chronic pain. A good percentage of those are
22 related to acute pain or pain conditions, or kind

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1 of conditions that may repeat over time.
2 Musculoskeletal related pain is the most
3 common reason for self-medication and entry into
4 the healthcare system. It affects 1 in 4 as a
5 leading cause of serious long-term pain and
6 physical disability.
7 As a chronic pain physician, I see a lot of
8 patients with chronic low back pain, and we think
9 of those patients. But what about the patient with
10 repetitive trauma with extensor tendinopathy or
11 other types of musculoskeletal conditions?
12 I think what's also important is besides
13 those working people -- and I didn't realize I was
14 going to be speaking after Trip -- even if you look
15 at the military, musculoskeletal conditions are the
16 leading cause of disability discharged from service
17 for non-battle injuries. So really, across all
18 these different areas of work, musculoskeletal
19 conditions are prevalent.
20 The key would be, though, from an
21 acute -- maybe if I look at myself as a sports
22 medicine physician, or I'm a primary care doctor

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1 doing sports medicine, or seeing acute injuries,
2 are they even thinking about chronicity or is it
3 just a small percentage of those patients move to
4 the right? Most of them stay to the left. How do
5 we do a better job of assessing those patients, and
6 does the taxonomy reflect actually what's going on?
7 So when I was looking through for
8 musculoskeletal conditions, it's been described in
9 a number of different ways and lumped and split.
10 Commonly, you see under musculoskeletal conditions,
11 joint conditions, osteoporosis, spinal disorders,
12 MSK injuries, childhood disorders. I mean, that's
13 a huge swath of patients.
14 Obviously, the ACTTION taxonomy for chronic
15 pain, now the musculoskeletal pain system has
16 broken it down into fibromyalgia, myofascial pain,
17 and widespread pain. Many times, that's been kind
18 of under this rubric of musculoskeletal conditions,
19 gout, osteoarthritis, rheumatoid arthritis and
20 spondyloarthropathies.
21 So is this more disease-orientated; is it
22 more syndromal; is that really going to matter? Or

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1 when we look at acute pain conditions, do we have
2 to kind of shift back towards mechanisms because
3 this chronic process hasn't happened? Or has it
4 happened? It's just that acute injury is actually
5 representing two or three years of degeneration of
6 a joint, and then you develop pain?
7 So is it truly an acute condition, or is it
8 just all of a sudden now hitting that failure point
9 where patient presents with pain even though their
10 condition started many years ago?
11 So musculoskeletal, I think, is an
12 interesting term in itself. It depends on whom and
13 where you ask. I think in the U.S.,
14 musculoskeletal includes more of sports medicine,
15 joint pain, osteoarthritis. Europeans maybe even
16 present it differently.
17 I work with Gordon Irving. He says,
18 muscular ske-LE-tal. And as an astute American,
19 I'm always like, "Huh, what's that?" So I think
20 even the Europeans and other parts of the world,
21 musculoskeletal may be more soft tissue, maybe more
22 regional pain versus if you asked young trainees in

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1 the U.S., and you said you're doing musculoskeletal
2 medicine, that's kind of the term for sports
3 medicine or sports and spine. Those clinicians
4 would say, "I don't even see pain patients." Yet,
5 probably 90 percent of the patients that presented
6 to them have a pain condition. So even the
7 terminology, I think, gets confusing.
8 I decided to maybe look at three different
9 conditions in trying to go through the dimensions
10 to see where they fit. Acute low back pain, many
11 of us in this room have had low back pain and
12 hopefully won't have another episode, or we're
13 suffering with chronic low back pain.
14 We'll talk about sprains and strains, which
15 is, I think, a very heterogeneous group even though
16 we throw these terms many times together with our
17 diagnosis. And then we'll touch upon knee pain.
18 With acute low back pain, there's different
19 approaches. I think from an anatomic
20 standpoint -- we're all familiar with this -- is it
21 discogenic; is it a compressive; is it soft tissue,
22 facet, sacroiliac?

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1 Unfortunately, that kind of classification
2 doesn't always help predict our treatment outcomes.
3 The APS/ACP, a number of years ago, we put together
4 these little back pain guidelines. The thinking
5 back then was low back pain, you should not do
6 MRIs. Most of these patients are primary care
7 level. You should just kind of sit and watch those
8 patients.
9 So we've developed low back pain guidelines
10 for that group. This was based on the Quebec
11 Criteria. We took three of those criteria.
12 "Nonspecific" low back pain was, well, it's just
13 axial low back pain; don't even do an x-ray. You
14 can sit, watch those patients, reassure them
15 they'll get better regardless of what you do.
16 The second group was radiculopathy, spinal
17 stenosis, neurologic-compromised. Maybe those
18 patients need to get an MRI; maybe they need to see
19 a specialist.
20 Then there was this third group, which is,
21 is it organ; is it a red flag; is it something
22 else? And the thought was there, at least, if you

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1 could break it down into three different parts,
2 then the primary care doctor could at least kind of
3 classify a patient and give them a better outcome
4 and a better treatment. And yet, that in itself is
5 probably lacking in quality.
6 If we look at low back pain itself, again,
7 nonspecific, I mean, can you think of a worse term?
8 "Nonspecific." It's like "I don't know" diagnosis
9 should be a better term.
10 So it could be disc; it could be organ; it
11 could be facet; it could be referred. Is it
12 kidney? Is it SI joint? Bone? Is it a stress
13 reaction in the younger patient that has a stress
14 fracture? Is it ligamentous?
15 We have a number of different pain
16 generators in the spine, yet, we kind of classify
17 them as nonspecific. Or is it, God forbid, muscle?
18 Is it I can palpate their lumbar paraspinals, but
19 their multifidi are atrophied, or they have deeper
20 pain in muscles I can't get to, or pelvic myofacial
21 pain. But yet, we kind of throw this term
22 "nonspecific."

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1 So there are risk factors. I've shown
2 smoking, BMI, also tumor necrosis factor; there's
3 disc changes, genetic factors. All these different
4 areas have been studied. How does that correlate
5 with our taxonomy? Different polymorphism, even
6 motor changes, all these different things we look
7 at kind of more from a biomedical standpoint as
8 predictors, potentially.
9 So is that going to be important in our
10 taxonomy, understanding that?
11 What I want to touch upon just briefly is
12 the shift in low back assessment. There's a lot in
13 the physical therapy world in subclassifying, in
14 risk stratifying patients with regards to
15 treatment.
16 So what you do with that is you target the
17 treatment towards the factors that are modifiable.
18 They look at leg pain, widespread symptoms, those
19 as prognostic factors, but also psychosocial
20 factors. So again, I think this may be
21 something -- I'm not going to say we're going to
22 change our whole taxonomy, but there's been a lot

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1 of research in this area, and what they'd been able
2 to show is, if you can better subclassify these
3 patients with "nonspecific" low back pain, you get
4 better outcomes.
5 So maybe our taxonomy should have that
6 understanding that if we can subclassify patients
7 better, that's going to be an important taxonomy
8 and be useful.
9 So how they do it is they'd say classifying
10 patients in groups based on clinical
11 characteristics and matching these patients'
12 subgroups to management strategies will benefit
13 them and improve their outcome. We'll just kind of
14 go through this briefly.
15 How many of you heard of McKenzie therapy?
16 No? Okay. So McKenzie therapy, the idea is that
17 you've got an intact nucleus pulposus, but the disc
18 is causing pain. And maybe with certain movement
19 patterns, it's going to change the movement of the
20 disc, and that may change your symptoms.
21 So with McKenzie therapy, they do certain
22 movements, repeated movements, to centralize the

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1 pain. So I want you guys to slide your chair back
2 a little bit. Slide your back -- come on guys.
3 Movement is memory.
4 So if you do flexion -- and I don't want you
5 guys to take your clothes off and get on the ground
6 with your --
7 (Laughter.)
8 DR. STANOS: I mean, if you want to do that,
9 hey, what the heck. So if we do it -- our friend
10 here is doing it in his -- I guess those are black
11 tighty-whities. But you can do it seated.
12 Spread your knees out a little bit, and I
13 want you flex forward 5 times. So you came in.
14 You've got right leg pain going down your thigh in
15 your right calf. How do you do those maneuvers?
16 So the therapist does it, and your leg pain, look
17 what happens. Oh, his underwear changed colors
18 there.
19 (Laughter.)
20 DR. STANOS: His leg pain gets worse.
21 You're peripheralizing. That's not good. Now, you
22 can change your hair color and change your

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1 underwear.
2 Now, everyone, stand up for a second. Now,
3 McKenzie is repeated movement, so it's mostly
4 extension. Most patients like extension. So kind
5 of lean back, extend about 5 or 6 times in a row.
6 If you ever see a guy doing this in the airport,
7 he's doing his McKenzie exercises. And that
8 should, in patients that respond, centralize their
9 symptoms.
10 So then that therapist would give you
11 extension-based exercise; 80, 90 percent of
12 patients that respond to this therapy, you do
13 extension. But there's some that do side bending.
14 There's all sorts of different ones.
15 But the key is, though, that they're
16 specifying based on the exam what your treatment is
17 going to be.
18 You guys just moved. Isn't that good? A
19 little movement is better, right?
20 (Audience participation.)
21 MALE SPEAKER: Can we do that (inaudible)?
22 DR. STANOS: Oh, you want to go --

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1 (Laughter.)
2 DR. STANOS: Let's not go there. Okay.
3 So again, so that's just an idea of just
4 that type of treatment, and it's based on how you
5 respond to care. And they've been able to show a
6 number of studies, with the subclassification
7 improve outcomes. So that's just one way.
8 If you look at the ICD-10 codes, it kind of
9 alludes to this because it talks, I think, a little
10 better detail than ICD-9 about diagnosis. We have
11 acute, subacute low back pain with mobility
12 deficits; acute low back pain, the second one, with
13 movement and coordination impairments; the third is
14 with referred or lower extremity pain, referred
15 pain being kind of -- referred like an SI joint or
16 facet referral pattern versus -- radicular pain is
17 more nerve root irritation, radiculopathy.
18 So again, this taxonomy -- I mean, would the
19 taxonomy be able to more clearly describe what's
20 actually going on?
21 This is from the ICF classification. And
22 again, just to give us an idea of things that we

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1 could be looking at, if you look at the first, it
2 says "acute low back pain with referred lower limb
3 pain." The symptoms are low back pain associated
4 with referred buttock and thigh, so it's like
5 sclerotomal referral. So like an SI joint has a
6 referral pattern; your facet joint has a referral
7 pattern; your disc has a referral pattern.
8 So those patients, their impairment is for
9 low back pain, lower extremity pain caused by -- it
10 can be centralized. You would give them exercises.
11 You may give them traction. You may give them
12 repeated centralization exercises. So that patient
13 with that referral pattern would get that type of
14 treatment.
15 The other diagnosis, acute low back pain
16 with radiating pain, that may be more
17 radiculopathy, so they have neural tension. You
18 guys have a disc herniation, and S1 leg symptoms on
19 the right. I put you on the table; I raise your
20 leg up; I can reproduce your symptoms. So we're
21 aggravating your nerve root; we're reproducing your
22 symptoms.

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1 So those patients may go to a therapist and
2 get nerve glides where we loosen up the nerve to
3 make it less sensitive, and we show them different
4 exercises.
5 So the key is not getting stuck on what the
6 therapist is doing here but the idea that we're
7 doing a better job with our taxonomy and figuring
8 out what the actual treatment is going to be.
9 This is just from different stories. And
10 Fritz has done a lot of this work, but looking with
11 treatment-based classification with mobilization, a
12 patient has mobilization problem, they may have SI
13 joint or lumbar pattern; if they have specific
14 exercises they respond to, or they may have a
15 flexion pattern or extension pattern like you guys
16 just demonstrated; again, the point here being
17 thinking of low back pain a different way versus
18 this is just disc.
19 I think all of us suffer with our patients
20 with reading these 7-page MRI reports with all of
21 these abnormalities, which really don't mean
22 anything, or maybe one or two parts of that MRI

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1 actually mean something.
2 I'm just putting this up here, the STarT
3 Back Screening Tool -- are you familiar with STarT
4 Back? STarT Back has been used in the physical
5 therapy and literature. We're using it at our
6 center to help better predict, as a screening tool,
7 bad outcomes.
8 What STarT Back does is the first questions
9 are: Do you have back pain spreading down your
10 leg? I have pain in the shoulder and neck. So
11 you're trying to pick up do they have pain in other
12 areas of the body? In the last two weeks, have you
13 dressed more slowly? And then the rest of the
14 questions kind of deal with catastrophizing
15 anxiety.
16 Then you score that. And then from that,
17 we're able to score and give a composite of what's
18 their risk for chronicity, and then does that also
19 pick up patients that may need different
20 treatments?
21 So if you have a higher STarT Back Screening
22 Tool, maybe there's underlying psychological

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1 factors, catastrophizing. They would go in a
2 different way of a pathway or different treatment
3 approach; the key being those with risk factors for
4 chronicity, those need to be considered in our
5 taxonomy.
6 This is just from Swedish -- we're putting
7 together a low back pain pathway. The patients
8 present -- I know you can't read this. We rule out
9 that they have radicular pain or red flags based on
10 their STarT Back Screening. If it's a low score,
11 maybe they need education, reassurance. They don't
12 need a lot of imaging; they can stay at the primary
13 care level. Those patients with higher risk maybe
14 need to be sent to a physiatrist or a pain
15 management specialist or need behavioral
16 interventions early on.
17 So the key is, though, that within that, we
18 still need a better kind of diagnostic taxonomy to
19 look at these patients. We're still calling them
20 low back with leg pain. Is there something else we
21 can better identify those patients once they're
22 stratified? So would a good taxonomy be able to

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1 pick that up?
2 I'll talk about sprains and strains. This
3 is a very different group. Sprains is more
4 ligamentous versus strains is muscular. So that's
5 like saying sprains and strains. That could be
6 saying I'm going to treat chest pain and shoulder
7 pain the same because they're in the same area of
8 the body, yet completely different.
9 So even within strains or muscles, is it
10 myofacial; is it delayed onset muscle soreness?
11 How many of you guys have ever tried to work out?
12 You go work out, and you're sore for three days?
13 That's a great example of hyperalgesia of your soft
14 tissues. You rip some of those smaller muscles;
15 you get pain; you're kind of sore walking around;
16 you think you're a lot better, and then it goes
17 away. Delayed onset muscle soreness has been well
18 studied. It's a muscle hyperalgesic response, but
19 then we recover.
20 Looking at just sprains itself, sprains are
21 the supporting structures of a joint. It's a tear
22 of the ligament or capsule versus a strain is in

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1 the muscle or the myotendinous unit, so very
2 different even though they get lumped together.
3 Signs for a sprain can be tenderness,
4 swelling, weight-bearing pain. Symptoms can be
5 pain with weight bearing. A strain is more focal
6 tender muscle tenderness. There can be hematoma if
7 there's a significant rip or a tear depending on
8 what part of the muscle belly is affected.
9 Then there's a complete rupture. Many of us
10 see patients with biceps ruptures. They have no
11 pain. They tear their bicep. Now, they have pain
12 when they get their surgery done; it doesn't go
13 well. But with a full rupture, there's actually no
14 pain.
15 So common features, if we look at just
16 sprain, there's injury to a ligament as a result of
17 an excessive load. Sprains are more common in
18 older adolescents, young adults, and middle-aged
19 adults. So across different timelines, there's
20 different characteristics.
21 In children, the physis is the weak link, so
22 many times, we'll see -- that's why we have

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1 limitations in how many curve balls an 8-year-old
2 can pitch because their physis hasn't closed, and
3 they can get injuries because the muscles are
4 pulling on the tendon and that's close to the
5 physis.
6 Older adults, the bone is weak, and they can
7 have falls. So with osteoporosis, a simple fall
8 can cause a fracture. You can have sudden trauma
9 inversion injuries. A lot of our ankle injuries
10 are ligamentous tears related to sudden trauma.
11 The diagnosis may be negative x-rays but a
12 positive ultrasound and maybe changes on the MRI.
13 And what I'm seeing as a physiatrist is all these
14 guys doing ultrasounds. I mean, most of our
15 patients get sent to us, they don't have an MRI
16 done; they have an ultrasound done, and you see
17 four paragraphs of this beautifully written
18 ultrasound report.
19 So we're actually seeing these and picking
20 up on a lot of these intricacies a lot sooner. I
21 think, in some ways, we're doing a better job of
22 managing them. But again, I think the black box of

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1 tendinopathy. So even within this myotendinous
2 injury, there's a whole different cascade of
3 events.
4 This just shows with muscles strains, again,
5 trying to break down from a classification
6 standpoint, is it interstitial strain all the way
7 up to complete rupture. And sometimes you may be
8 able to differentiate based on the physical exam
9 findings. You may be able to feel actually a
10 defect in the tissue. But again, very challenging
11 from a diagnostic standpoint.
12 Just from Dimension 3, if we look at sprains
13 and strains, what are the risks? There could be
14 high exposure to game conditions. So a lot of
15 football players, you'll hear about strain.
16 They're out for three weeks with a hamstring
17 strain. These guys are very strong. They're in
18 good shape, but those accelerated forces can cause
19 injury; or it could be a low back pain dysfunction,
20 poor endurance, core muscle strength. You can have
21 reduced extensor muscle endurance, and that could
22 be a risk factor as well.

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1 these tendinous injuries are a lot better. We
2 actually can get a better understanding of the
3 biomedical problems or biomedical changes.
4 But these are the classification systems for
5 sprains: Grade 1, 2 and 3. Unfortunately, without
6 ultrasound, that's hard to pick up. And a lot of
7 times from a physical exam standpoint, it may be
8 difficult in what's the difference between a
9 grade 1 and a 2 and are you able to pick that up on
10 physical exam? Does this classification help us?
11 So if we look at common features for
12 strains, again, that's the muscle tendon insertion
13 many times, but it also can be in the middle of the
14 muscle belly. It can incur with aging. And
15 remember, there's changes in the collagen and the
16 muscle tendon itself. So that muscle tendon
17 junction may initially have an injury and there's
18 inflammation.
19 Chronic degeneration, the myofibrils may
20 actually line up and there's collagen that heals
21 correctly. But you can get chronic degeneration,
22 and that may go from a tendonitis to a

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1 The last group I'm just going to talk about
2 briefly is osteoarthritis, and this is just more
3 from the OARSI classification, and they're actually
4 developing an OA taxonomy, a newer taxonomy. But
5 they discuss the importance of disease versus
6 illness with osteoarthritis.
7 Early on, the disease is actually all those
8 molecular changes in the joint itself, and then you
9 lead to this kind of clinical point where you
10 report pain, and is that the actual illness, even
11 though we're calling it an acute presentation.
12 So if we think osteoarthritis, there's this
13 kind of balance between the catabolic breakdown in
14 the joint with the balance of the anabolic repair
15 of the joint. And over time, what we see is
16 catabolism kind of wins out.
17 Then we get changes in the joint itself, the
18 synovium, the cartilage, and the bone. A lot of
19 the genetic variability within patients with
20 osteoarthritis is in this ability and inability to
21 catabolize and to reform tissues. And now, within
22 the osteoarthritis literature, they are able to

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1 look at phenotypes, tissue changes to kind of
2 actually better assess those levels of changes in
3 the joint.
4 What they talk about with their taxonomy is,
5 do we have the disease elements, the molecular
6 changes, followed by the anatomic and physiologic
7 changes, and then you reach this tipping point
8 where they present with pain, or dysfunction, or
9 illness? And they've just developed a composite
10 score that kind of includes those different
11 factors, and is that another thing to consider?
12 Some of these conditions that have
13 biomedical differences, can you develop some type
14 of composite score within that, versus saying all
15 of our MSK conditions, we're going to use this
16 criteria, or are there certain MSK conditions that
17 could use kind of a marker looking at this
18 composite or variability from patient to patient
19 because it's so complex.
20 This is just kind of looking at Dimension 4,
21 ongoing cellular distress, again, like we talked
22 about in the joint itself, anatomic changes, those

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1 could be neurobiologic consequences, sleep
2 problems, the kinetic chain consideration.
3 So everyone, stand up for a second.
4 Everyone, stand up. So we've all
5 developed -- we're 70 years old. We develop spinal
6 stenosis, so we have to bend forward when we walk
7 so we can limit our neurovascular claudication, so
8 we can get to the airport and walk well.
9 So instead of us walking around bent
10 forward, what do we do? We bend our knees, so bend
11 your knees and your hips, and we stand around like
12 that.
13 Now, I'm going to do the rest of my lecture,
14 and I want you guys to stay like that. Okay. What
15 we're going to talk about is the kinetic chain.
16 The kinetic chain concept is -- no, bend a little
17 bit more. This is keeping all the orthopedic
18 surgeons in business.
19 So what happens in about five years or about
20 five minutes from standing like that? Do your
21 knees hurt? You're starting to feel a tension in
22 your knees, right? Okay.

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1 So most of our patients that have spinal
2 stenosis also develop hip arthritis and knee
3 arthritis. For many years, they're walking around
4 with their knees slightly flexed and their hips
5 flexed. So the kinetic chain idea is that you have
6 knee pain you're presenting with, but you also have
7 hip flexion tightness, and you also have core
8 weakness.
9 So how is that assessed as part of a
10 taxonomy? Because that could be a risk factor as
11 well. You guys all look like you're squatting, I
12 won't say doing what, but that's good.
13 So just as the concept, for acute pain,
14 we've got to be thinking about not just the joint
15 but the other joints around it, which is also not
16 really considered in a lot of these criteria
17 because that might be a bigger risk factor.
18 You guys can sit down. Sorry. No one
19 developed back pain or knee pain, right?
20 Then the other consequences or functional
21 consequences is lost work days, activity
22 limitation, participation restrictions. Do we need

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1 to be a little more specific about their function?
2 I mean, I'm a physiatrist. We all love to
3 talk about function. Function is hard to assess.
4 So do we need to do a better job? Is it your
5 activity limitations? Is it your participation?
6 Do we need to do a better job of breaking that
7 down?
8 Almost done. Sorry.
9 DR. STANOS: Finally, for Dimension 5 is the
10 risk factor for OA. Also, what have been studied
11 are obesity, knee trauma, meniscectomy, significant
12 literature showing the accelerated degeneration of
13 a joint just after a meniscectomy. Was it the
14 meniscectomy that did it or is it just are you
15 being marked?
16 I think the other area, which is important,
17 is this whole -- the damaged cartilage, there's all
18 these interventions now at trying to improve or
19 decrease the catabolism of the joints. So we have
20 physicians doing a lot of regenerative medicine,
21 biologic therapies. How do we consider that within
22 our taxonomy?

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1 We can't forget with Dimension 5,
2 catastrophizing anxiety, depression. But on the
3 other side, what are protective factors? Is there
4 a strong social and work environment? So a patient
5 presents in the ER with acute pain from a joint
6 problem, but they've got a good working
7 environment. They actually want to go back to
8 their job.

9 We actually see the opposite with the guy
10 that has problems, doesn't want to go back to his
11 job. But are those potentially protective factors?
12 Or do we go totally biomedical and say it's their
13 joint phenotype? Maybe they've got a better chance
14 of recovering in a joint injury than the second
15 person you're going to see that day, just on their
16 phenotype of their joint.

17 The last one here is looking at the putative
18 under biologic, psychosocial mechanism, and risk
19 factors. So I think what's important, too, is
20 occupational factors. Again, is the patient a
21 floor-layer versus a sedentary job? Are they
22 lifting and kneeling? Are they squatting? You

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1 know, a lot more detail on what the actual
2 aggravating factors are related to that,
3 quote/unquote, "acute pain" injury.

4 Is there anger, perceived injustice? I
5 always think with chronic pain patients, many times
6 that could be the real barrier for them getting
7 better. But they have that perceived injustice
8 when they first got injured. Again, just to kind
9 of throw out other psychological variables that
10 could potentially impact patients with acute
11 musculoskeletal pain developing chronic pain.

12 The last thing I'm going to say is the
13 individual -- remember, we all know red flags.
14 Yellow flags are those things that predict kind of
15 bad outcomes. But within yellow flags, there's
16 workplace conditions or black flags, which is the
17 workplace is unsafe, I don't want to go back to
18 that lousy job; or the workplace factors, it's too
19 much lifting, too much bending.

20 Again, are those other things we need to be
21 looking at within a taxonomy or at least within the
22 assessment?

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1 Acute MSK pain taxonomy may need to shift
2 back or in some areas, looking at the mechanisms.
3 We're not going to ignore the biopsychosocial
4 context in the syndromal approach, but where do we
5 find that balance?

6 With low back pains, again, is the taxonomy
7 based on treatment-based classification? What we
8 did with extension and flexion and movement, is
9 that something we should be assessing more to help
10 better understand or breakdown in the taxonomy
11 where those patients lie?

12 Is ICD-10 a better version of what we had
13 before? Can we use that within our taxonomy? And
14 again, also thinking, too, with a lot of these
15 musculoskeletal conditions, what's the underlying
16 disease that led to this, quote/unquote, "acute"
17 incident? There's a lot of things going on in the
18 joint, in the muscle, in the tendon before they
19 presented with pain. And is that important? And
20 remember the kinetic chain, right?

21 Okay. One last thing. For tendinopathy,
22 you guys use a mouse. Just get your wrist, flex,

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1 extend your wrist a couple of times, radioulnar
2 deviate. And pretend like you use your mouse all
3 day doing that. Do you guys want to keep doing
4 this all day? Probably not, right?

5 Now, I want you to put your hand on the
6 table like you're using your mouse. Instead of
7 moving your hand back and forth like this, use your
8 scapula to move your arm.

9 That's another kind of kinetic chain
10 concept, how do we move a limb higher up more
11 proximally to affect what's going on in our wrists.
12 So on our assessment, do we have to be looking at
13 not just the wrist but higher up in the shoulder?

14 I'm just kind of throwing these out there,
15 again, thinking more from a sports medicine
16 approach with these acute conditions. That's going
17 to be a key with the assessment.

18 Again, where does that lie? Or we can do a
19 better job with the taxonomy and picking up acute
20 localized pain, which would prevent this, and is
21 subclassifying these patients going to do a better
22 job to keep patients from going from left to right

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1 and keeping them hopefully towards the middle or to
2 the left. I didn't mean that politically. Sorry.
3 (Laughter.)
4 DR. STANOS: Thank you. You guys all
5 survived. Thank you very much.
6 (Applause.)
7 MALE SPEAKER: Steve, quick question. You
8 got time? That was a very good talk. Thank you.
9 Could you comment or would it be a good time
10 to comment maybe about -- you've got the screening
11 tools and outcome psychological/psychosocial
12 factors. Do you screen for, do you have data, and
13 is it helpful in your field?
14 DR. STANOS: I'm just thinking in our own
15 system, we're doing anxiety depression scales in
16 questionnaires already. The STarT Back is just one
17 that we're using for low back pain.
18 Within that, if they're high on their STarT
19 Back -- I don't think STarT Back is going to cure
20 all of our ills, but if there are high scorers on
21 that screen, then that clues the primary care
22 provider or even our physical therapists.

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1 A lot of patients see the physical therapist
2 before the even see the physician. They're doing
3 the screening tool, and then that clues them in.
4 If they have a higher score, do they need to do
5 other screens or do they need to send them to
6 primary care or a specialist?
7 So I think that's just one of the tools that
8 we're using. But most of the patients are still
9 using other questionnaires as well, if that answers
10 your question.
11 MALE SPEAKER: Do you have literature yet or
12 is this early --
13 DR. STANOS: No. We're actually starting
14 the low back pain pathway at one hospital system,
15 and then the idea is we're going to using that
16 across our system. But the STarT Back has been
17 used in -- I think Intermountain has been using
18 STarT Back for a long time within their clinical
19 pathways and other areas in the country.
20 But it's interesting, a lot of this came out
21 of the PT literature, and now it's kind of finding
22 its way into the MSK and the kind of medical world.

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1 MALE SPEAKER: [Inaudible - off mic].
2 DR. STANOS: Yeah. Oh, yeah.
3 MALE SPEAKER: [Inaudible - off mic].
4 DR. STANOS: And what's interesting -- I
5 mean, again, yes, we're still talking about
6 nonspecific low back pain, but we have a subset of
7 people that are doing a lot better work in
8 identifying these patients, and subclassifying
9 them, and I think getting better outcomes.
10 With that being said, we had a guy that
11 tested high in his STarT Back tool, and they did it
12 over the phone. So one of our MSK clinicians
13 referred him to the pain clinic because that's
14 where they're supposed to see us.
15 We saw the guy. He probably has somatoform
16 disorder. He had been to the ER like 4 times in
17 4 months. He had eye pain from looking in the
18 microscope; I mean, everything. But at least the
19 screening tool alerted us to that. He was not open
20 to what we want to do in our pain clinic, but at
21 least we were able to identify him.
22 He's still causing a lot of strife, but it

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1 was interesting. That little STarT Back thing at
2 least tripped our primary care -- or
3 musculoskeletal physician to be like, wait; you
4 need to go to the pain center. We have behavioral
5 health in our pain center. Can they assess this
6 guy? So it was kind of funny.
7 Now, is that going to help our hospital
8 system save money? I mean, I think we've
9 identified that this guy has a lot of psychologic
10 and psychiatric issues. But it was just funny how
11 the screening tool in a sense worked, but then what
12 do you do with it?
13 DR. SURESH: Steve, I have question for you.
14 Thank you for this excellent lecture.
15 So my patient population is all kids. The
16 big problem that we have is there's a lot of sports
17 injuries. About 50 percent of the patients that we
18 see are generally sports injury patients.
19 The big problem that we see is there is a
20 chronicity to these acute injuries because they are
21 treated by their pediatrician or somebody -- the
22 school nurse treats these guys.

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1 It's really difficult to draw the line
2 between the acute and the chronicity of MSK
3 injuries. How can you come up with this division?
4 DR. STANOS: Well, I think you bring up a
5 good point because most of those -- like those
6 patients you're seeing, the acute, they have
7 multiple acute episodes where they're getting a
8 recurrent kind of return of their back pain with
9 sports.
10 So yeah, I do think we have to consider -- I
11 think most of these are subacute or repeated acute
12 conditions. I'm having flashbacks. In our chronic
13 pain program, we had adolescents. And they all
14 started out with the musculoskeletal condition, and
15 then it kind of progressed.
16 So I think they have the same kind of
17 sensitization, had the same factors and issues with
18 their parents and all of the other kind of issues
19 that kind of turned them into a chronic pain
20 patient. But yeah, I think many of those aren't
21 really acute injuries; they're repeated injuries
22 that aren't really properly assessed or treated.

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1 DR. TERMAN: Thanks a lot.
2 Our next speaker will be Mike Kent from
3 Walter Reed. He's going to talk about acute
4 visceral pain.
5 Presentation – Mike Kent
6 DR. KENT: Good morning. I'm Mike Kent.
7 I'm an active duty Navy anesthesiologist at Walter
8 Reed. I trained under the good Dr. Buckenmaier.
9 I kind of drew the acute visceral pain
10 straw, and what I did is, actually, I took the
11 dimensions that we started to rework yesterday, and
12 I had a bourbon in the bar and tried to rework
13 everything towards those dimensions.
14 So full disclosure, it gets a little messy,
15 but I use it kind of as a tool to more in the
16 chalk talk, like can we talk about the dimensions?
17 Let me take my topic and try to fit it into what we
18 talked about yesterday afternoon.
19 Full disclosure, I think when I line the
20 dimensions up from what we talked about yesterday,
21 I think they're actually pretty similar to what it
22 was before, and we'll go through that and go from

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1 there.
2 Just like some complaints like acute
3 musculoskeletal pain, I think acute visceral pain
4 kind of falls in a category unlike, oh, a patient
5 has acute pain in front of me. I know what I'm
6 looking at.
7 Well, that's kind of the opposite with acute
8 visceral pain, where hundreds and hundreds of
9 diagnoses can lead to any type of acute visceral
10 pain depending on actually where you're talking
11 about it.
12 Also, we already have numerous diagrams, and
13 numerous surgical text, or pain text, or internal
14 medicine text. I've actually had to approach
15 algorithmically numerous types of visceral pain.
16 And when I was initially trying to fit these into
17 the original dimensions, I was really trying to
18 uncouple in my mind classifying or diagnosing
19 visceral right upper quadrant pain with the actual
20 process of making the diagnosis of acute
21 cholangitis.
22 The two aren't necessarily completely

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1 mutually exclusive, especially in the prior
2 dimensional concept. I'll skip over this. But
3 before we even get to kind of the dimension part,
4 is considering what sources of acute visceral pain
5 do we even consider in the first place.
6 In the chronic pain taxonomy, when we think
7 about intracranial, do we want to consider that as
8 a group, as a source of visceral pain? Is it deep
9 somatic; is it visceral? I mean, we already have a
10 huge classification system for headache, but I
11 think whoever ends up with this working group, at
12 least, has to pay some credence to acute events
13 that need to be diagnosed on the spot that may
14 present with an intracranial visceral process.
15 Then the thoracic, the pelvic, abdominal
16 components, I think, are rather common, rather
17 universally understood as having etiologies for
18 visceral pain, but nonetheless something to think
19 about as we move on.
20 This is kind of how I initially framed it
21 with the initial dimensions that came up with the
22 chronic pain taxonomy. And I actually picked the

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1 pyramidal concept on purpose where Dimension 1 had
2 more broad strokes, key attributes narrowing down
3 to Dimension 2, what kind of diagnostic test,
4 physical exam, lab tests were associated with it.
5 And right about that time, you would usually come
6 to a diagnosis.
7 Then moving on from that, what are common
8 comorbidities associated with that diagnosis, let's
9 say myocardial ischemia, biological, psychosocial
10 risk factors with that, and then you get down to
11 the nitty-gritty mechanisms of whatever acute pain
12 diagnosis you come up with, but it's exquisitely
13 linked to the medical diagnosis at the same time.
14 I thought the pyramidal concept really
15 shows, especially with acute visceral pain, it's
16 very tough to separate the process of diagnosing
17 myocardial ischemia with classifying acute visceral
18 chest pain. So a lot of the processes are in
19 parallel; they crosstalk, but a consideration with
20 fitting these in the original dimensions.
21 Here, this is kind of my own summary of what
22 we quasi came up with yesterday. And I put numbers

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1 by it, but I should have just put letters, X, Y, Z,
2 A, B, C because I don't want to denote any priority
3 in terms of 1, 2, 3, 4, 5, 6.
4 But I also put this table up here, kind of
5 my own reorganization of what we came up with
6 yesterday compared to the chronic side. And I
7 lined them up a little bit, and I don't think
8 they're terribly different.
9 Now, the fine text is going to probably be
10 very different or a lot more contributory in terms
11 of the acute side, but this is how I'm going to try
12 to fit it with acute visceral pain in terms of what
13 we came up with yesterday.
14 So I stole this slide from Pat, and he said
15 I actually had better colors, which was great. But
16 one of the things that I'm still stuck on -- and
17 I'm moving into Dimension 1. The Dimension 1
18 concept we talked about yesterday is what's the
19 event; what's the tissue injury; what's the extent;
20 maybe considering the organ system.
21 I'm still struggling with "event." I still
22 think we need to work on this classification or

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1 semantically how we want to handle event first
2 before we move into the dimensions. I'll go into
3 this in a second.
4 So referencing Dave and Rob in the back of
5 the room who gave me this idea at the end of the
6 day yesterday, for acute visceral pain, I'm just
7 going to grossly categorize these as a medical
8 event, a surgical event, or a traumatic event. I'm
9 not saying that's right. I'm just throwing that
10 out there to try to fit it in, make it dirty, make
11 the discussion move forward.
12 So a medical event such as cholangitis; a
13 surgical event just like visceral post-hysterectomy
14 pain; traumatic event, visceral pain associated
15 with a hemorrhagic headache, associated with some
16 form of trauma.
17 Now, in the realm of acute visceral pain,
18 though, the degree of tissue injury does not
19 correlate with the severity of pain, as we all
20 know. Moving on, though, delving a little deeper
21 into this Dimension 1 of event or tissue injury,
22 what is the event? Is cholecystitis the event or

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1 is gall bladder inflammation swelling the event?
2 Yes, that is cholecystitis, but cholecystitis is
3 the diagnosis associated with alk-phos, imaging
4 studies, physical exam, et cetera, et cetera.
5 Or is it a medical event resulting in a
6 disorder process of the hepatobiliary system
7 triggering a nociception in the acute setting? Is
8 that more of a broad stroke that we need to think
9 about either in Dimension 1 or just a step before
10 Dimension 1, specifically for acute visceral pain?
11 Up for discussion.
12 So where are we? Coming back to this, is
13 this something that we at least maybe should
14 consider before moving on to Dimension 1, a broad
15 stroke, before moving on to the core kind of
16 concept of what we're starting with semantically in
17 Dimension 1, and my topic specifically with acute
18 visceral pain?
19 I made this slide when I was fitting it to
20 the initial chronic pain dimensions, where you had
21 differential diagnostic considerations. In a
22 broader stroke there, we're thinking -- and I'm

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1 just talking about abdominal visceral pain, right
2 upper quadrant, central visceral pain, a long list
3 of diagnosis crossing numerous physiologic
4 symptoms: GI, cardiopulmonary, hepatobiliary.
5 But coming down, if we conceptualize the
6 event, or tissue type, or organ system in a
7 taxonomy we want to approach acute pain with, at
8 least for visceral pain, it makes it a little
9 cleaner.
10 So if we call the event an acute urological
11 infectious event, it makes our differential
12 diagnosis, if we actually choose to put this in
13 Dimension 1, a little cleaner: cystitis,
14 prostatitis, epididymitis, all probably what we
15 would consider medical events, but at least it's a
16 little cleaner than a broad stroke right
17 upper-quadrant central type of phenomenon.
18 So again, I come back to this comparison,
19 moving on from what we talked about Dimension 1
20 yesterday and moving on to let's talk about
21 Dimension 2. And we talked about pain quality,
22 temporal characteristics, spatial, and I put

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1 characteristics there as well. Definitely, we'll
2 have to hone that in.
3 I put Dimension 1/2 here because there may
4 be some core criteria to think about for acute
5 visceral pain but some supplemental criteria that
6 can sift down more into a common features concept.
7 When you really think about visceral pain,
8 IASP put out a good summary, and there isn't a ton
9 on acute visceral pain that's actually very well
10 delineated with comparisons, but think about the
11 definition -- at least according to IASP -- of true
12 visceral pain, it's vague pain that's in the
13 midline, and that's about it. And the rest of it,
14 referral patterns which we'll get to in a second,
15 can either be lumped into this key diagnostic
16 criteria or can be considered associative.
17 The pain duration and the temporal
18 characteristics, I think, is critical in the acute
19 visceral setting on numerous fronts. One is the
20 duration, because this is where you get a lot of
21 crosstalk between acute, subacute, and chronic
22 visceral conditions.

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1 Are we talking about acute, subacute,
2 subacute recurrent, chronic recurrent, chronic
3 recurrent? And what's the line that we draw in
4 this in terms of this taxonomy to choose those
5 conditions to talk about and classify as well as
6 provide diagnostic assistance?
7 I use the diagnosis and classification
8 terminology there on purpose, a line that needs to
9 be discussed. And numerous conditions can point to
10 this.
11 So duration, but also the pattern of acute
12 visceral pain, I think, in terms of a temporal
13 nature is essential to think about. Is it
14 something like nephrolithiasis? And we'll just
15 take the example of a stone that's passable. Huge,
16 horrible event, coming to the ER, the stone has
17 passed, pain resolved. There may be some evidence
18 of persistent hyperalgesia, depending on how long
19 the stone was, but nonetheless an acute event that
20 went away.
21 But what about GERD? Well, is GERD acute?
22 Is GERD a subacute? If I had GERD symptoms after

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1 2 days, versus 4 days, versus 5 days, I go to the
2 ER. I get some Zantac, it goes away, come back
3 5 days later. Okay, we're kind of in that subacute
4 realm, but I get a PPI; then it goes away. Is that
5 still part of our taxonomy? It's subacute, but it
6 started as acute.
7 So these are some of the challenges, I
8 think, with drawing lines with visceral pain. But
9 this is a nice graph when you start thinking about
10 patterns of how we describe acute visceral pain and
11 how temporal qualities, I think, are so essential
12 is that if you take line A, that's kind of when
13 your aorta ruptures, huge onset, big abdominal
14 visceral pain that needs to get taken care of right
15 away.
16 Rapid onset, not as rapid as A; B, being
17 more of a pancreatic-type pattern; C, which kind
18 of just kind of a slow undulating pain, more of a
19 cholelithiasis; or E, kind of an insidious
20 onset pain over 1, 2, 3 days. Appendicitis usually
21 may fit into that.
22 So again, all these we would probably

<p style="text-align: right;">Page 81</p> <p>1 consider acute, but all have very distinct -- not 2 universal but distinctive temporal characteristics 3 in terms of their onset. And we haven't even got 4 to the resolution part yet. 5 So staying in this Dimension 2 type concept 6 here, at least now providing a comparison to pure 7 somatic pain and how this acute visceral pain is at 8 least described. Well, in vague sense -- oh, I 9 guess in visceral sense, it's described as having 10 more of a strong effective or autonomic response. 11 But again, this isn't universal. This is mostly 12 seen as commentary versus actually quantified, but 13 nonetheless quite commonly referred to. 14 Referral, and I think this is something that 15 can either fit in a core diagnostic criteria or may 16 be added in terms of a supplemental sense, where 17 visceral pain may be referred to a neurally-linked 18 organ without hyperalgesia, where on your exam, you 19 cause no more increased pain on exam, or you have 20 referred pain with hyperalgesia, very tough to 21 differentiate from parietal information if we're 22 talking about the abdominal sense, or if it's just</p>	<p style="text-align: right;">Page 83</p> <p>1 definitely many associated physical exam findings 2 that are associated with a presentation of visceral 3 pain and all the things we've learned in medical 4 school and beyond, but suggestive in nature, and I 5 don't believe necessary in a core diagnostic 6 concept. 7 Observational components, again, also 8 associated with diagnosis but associated with the 9 presentation of the pain and speaks to maybe the 10 magnitude of the pain in terms of an autonomic 11 response or effective response, pallor, vital 12 signs, rebound, things like that. 13 But again, going back, physical exam, in 14 terms of specifically focusing on acute 15 hyperalgesia, it may give you some sense of how 16 much hyperalgesia has set in or not set in as 17 related to your acute visceral pain event. 18 This comes from the original dimensions 19 where epidemiology was considered in Dimension 2. 20 I offer this as more of a supplemental 21 characteristic of whatever the -- at this point, 22 you've already come to what's causing your visceral</p>
<p style="text-align: right;">Page 82</p> <p>1 true hyperalgesia with no somatic involvement of 2 parietal peritoneum as an example. 3 So it's something that I think probably fits 4 well into this Dimension 2; definitely can be up 5 for debate for fitting in terms of a diagnostic 6 core criteria depending on how we actually end up 7 on defining event. 8 Associated symptoms, of course, urologic 9 symptoms, hematuria, hematochezia. Now, these 10 aren't really associated symptoms of the 11 visceral -- Or they're associated with the visceral 12 pain, but one argument, again, these parallel 13 processes of making the diagnosis versus 14 classifying the pain, hematuria is probably more 15 associated with the diagnosis of, whatever, versus 16 actually the pain. But it's in the globe; it's in 17 the world of it. 18 Physical exam findings, again, there really 19 is no pathognomonic physical exam finding where you 20 can just walk into the ER bay, touch the patient, 21 and then leave with their hands in the air 22 screaming victory, and then you're done; but</p>	<p style="text-align: right;">Page 84</p> <p>1 pain. 2 You can approach it on numerous fronts such 3 as location. You know, in a series out of the UK, 4 it's their tenth highest reason for secondary 5 admits; chest pain, 20 percent prevalence in 6 certain populations. 7 Or you can take it based on diagnosis if 8 you're already come to your diagnosis of visceral 9 pain, 20 percent prevalence, or appendicitis and 10 add some other supplemental characteristics into 11 this epidemiologic framework, but may also serve as 12 a modifying factor down the road such as a 13 95 percent incidence of pain in young populations 14 but in elderly population, only 55 percent of 15 people actually report of pain in the right lower 16 quadrant; or gender concepts or age concepts, as I 17 just mentioned. 18 Laboratory finding. This was also mentioned 19 in the initial chronic pain dimensions. And again, 20 this speaks to this parallel process of how 21 appropriate this is in terms of bringing it in to 22 classifying acute visceral pain versus diagnosing</p>

<p style="text-align: right;">Page 85</p> <p>1 visceral pain in the setting of its underlying 2 pathophysiological medical or surgical diagnosis. 3 Elevated amylase and lipase, is that 4 associated with the acute visceral pain that's 5 caused by pancreatitis? It's associated with it. 6 It's associated with the diagnosis, but is it truly 7 associated with the magnitude of the pain? I don't 8 believe that's true. 9 High prevalence of negative findings, I 10 think any ER physician will speak to this, of how 11 many times someone's come in with abdominal 12 visceral pain, eating Doritos, asking for Dilaudid. 13 And they have a negative work-up even though they 14 may have complained of classic symptoms. 15 But again, numerous etiologies or numerous 16 diagnosis have very specific laboratory 17 abnormalities associated with them that is directly 18 linked to their acute visceral pain complaint. And 19 again, I'm mostly focusing on thoracic, abdominal, 20 pelvic. I think intracranial is a discussion to be 21 had in the future. 22 What about Dimension 3 from what we came up</p>	<p style="text-align: right;">Page 87</p> <p>1 you look at the epidemiologic tables. But 2 definitely psych linkages as everyone knows in this 3 room in terms of comorbid conditions linked with 4 those; that part's obvious. 5 But in terms of this Dimension 3, risk 6 factors, host factors, so any host factors or any 7 incidences in terms of the experience of acute pain 8 relating to chronicity risk, and is this 9 appropriate here in this dimension I think is up 10 for conversation. 11 But we know for certain things, the level of 12 acute visceral pain prior to cholecystectomy is a 13 predictor for chronic pain after cholecystectomy. 14 So the process of how visceral pain is processed by 15 the host may definitely serve as a characteristic 16 to place in this dimension in terms of taxonomizing 17 risk in the realm of acute visceral pain. 18 Protective factors, I kind of use the term 19 "modulating factors" as well, and I think this can 20 reside in the biopsychosocial milieu or 21 biopsychosocial characterization of the host in 22 terms of how bad the initial presentation is going</p>
<p style="text-align: right;">Page 86</p> <p>1 yesterday? Risk factors, host, patient, internal. 2 In the original set, this was comorbid diseases. 3 Well, we talked about -- Dan mentioned "host" so I 4 group these under "host." 5 So comorbid conditions are risk factors. So 6 if we think on an organic level, we take myocardial 7 ischemia, well, we have risk factors for that. We 8 have comorbid conditions with that: smoking, 9 hypertension, hyperlipidemia. 10 What about bowel obstruction as the etiology 11 for visceral pain for numerous associations or risk 12 factors for that, whether it's tumors, stricture, 13 inflammatory conditions, ulcerative colitis, 14 Crohn's. 15 Functional etiology. Every case of 16 irritable bowel syndrome presents probably with an 17 acute -- or sometimes form, presents to their 18 physician's office with maybe at least some form of 19 acute symptoms. 20 If you take the percentages, 20 percent of 21 all IBS has presented with an acute infective event 22 that has served as the onset of their symptoms, if</p>	<p style="text-align: right;">Page 88</p> <p>1 to be and also speak to possible trajectories of 2 resolution and risk for chronicity, so may apply in 3 this. 4 Dimension 4. This was initially probably 5 Dimension 5 in the chronic pain taxonomy, but 6 mechanisms and pathophysiology. Definitely, long 7 treatises have been written about mechanisms of 8 visceral acute pain both in the acute and chronic 9 setting; diffuse receptive fields, silent 10 nociceptors, threshold-based nociceptors, but still 11 without a clear link of how that actually is 12 completely processed to the external realm in terms 13 of the pain experience. 14 As Dr. Brennan mentioned yesterday, I think 15 much has been written on this, but the clear 16 delineation from point A to point Z still has a lot 17 of work to do. And it's very dependent on the 18 diagnosis, what's the organ, how is the organ 19 innervated, where is the organ. And so a lot of 20 room for work here but apropos; apropos for a 21 mechanistic type of dimension. 22 Dimension 5, impact and functional</p>

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1 consequences. Again, I think this -- and I use the
2 word "event-dependent," so it may not just be
3 diagnosis-dependent but also event-dependent in
4 terms of considering it in a consideration.
5 So I go back to nephrolithiasis, at least
6 that one, which a stone can be passed in the acute
7 setting, an acute event where you want to die and
8 then it goes away, and you want to live again; or a
9 small bowel obstruction, which may have -- just by
10 the diagnosis itself, it's an acute event with a
11 more of high likelihood of impaired function in the
12 immediate setting: NPO, possibly surgery, NG tube.
13 That's associated with the pain, associated
14 with visceral pain, but it's probably the
15 diagnosis, the burden of the diagnosis in this
16 setting, instead of the burden of the visceral pain
17 that describes dysfunctional impairment.
18 Psychosocial and functional concepts, this
19 kind of goes back to the conundrum of acute
20 visceral pain where the magnitude of injury doesn't
21 correlate with the magnitude of the pain felt, and
22 a full spectrum of having a fully functional

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1 patient or a vegetative patient lying on the floor
2 with gas pain is a possibility; but nonetheless, I
3 think apropos for this dimension as we started to
4 fit in. Again, messy but I did my best to try to
5 fit it.
6 Dimension 6, my bar tab was up at this
7 point.
8 (Laughter.)
9 DR. KENT: I didn't get a whole lot of time
10 to think about it. This is the one I struggled
11 with the most in terms of milieu, and I'm still
12 working on it in my mind. I hope that we can have
13 some good discussion about it this afternoon.
14 But going back to kind of lining up what we
15 started to come up with yesterday with the chronic
16 pain taxonomy, I thought it was very reassuring
17 that there's a lot of crosstalk.
18 I think the devil is in the details in terms
19 of, one, how are we going to define event and all
20 the fine print of how we want to finally detail
21 these in the acute setting versus how they were
22 finely detailed in the chronic setting.

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1 So I hope it wasn't too messy for acute
2 visceral pain. Thank you very much.
3 (Applause.)
4 DR. TERMAN: So I might take a little bit of
5 time for maybe a few more questions if there are
6 any here on this bourbon-fueled presentation
7 because this is clearly -- rather than just moving
8 on, this attempted integration is really useful.
9 So if there are questions?
10 FEMALE SPEAKER: I just wanted to say that
11 was great, and I think that it's nice that you
12 lined those up. And it is reassuring, and it's
13 great that you could do that while drinking.
14 (Laughter.)
15 DR. KENT: It's my super power.
16 FEMALE SPEAKER: I don't think the -- I
17 think the diagnostic and then the sort of -- you
18 outlined this tension with the diagnostic goal, it
19 won't be as prevalent in other types of acute pain
20 but probably there will be the most tension in this
21 particular category, I think.
22 MALE SPEAKER: Mike, great presentation.

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1 You went through the exercise of trying to map the
2 concept of acute visceral pain to a couple
3 different dimensional constructs, what we started
4 with, with the initial 5 mappings and then a couple
5 evolutions that we went through yesterday.
6 Could you talk a little bit about your
7 experience and which ones seem more reasonable,
8 which ones you struggled with conceptually, and any
9 lessons you learned from that process?
10 DR. KENT: Sure. The acute visceral pain,
11 it seemed to fit okay in the original 5 dimensions,
12 had to sit down and do some thinking about it. But
13 it was easy to kind of squeeze in, even with the
14 tension with the diagnosis and describing the
15 burden of the pain. But I think it fit pretty well
16 with what we came up yesterday.
17 For me, for acute visceral pain, what is
18 core, and it's already a vague topic. Between
19 Dimensions 1 and 2 is where I had the strongest
20 difficulty in separating what was core, what was
21 common for something that has a such a wide array
22 of presentations.

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1 Dimensions 1 or 2, I think I struggled with
2 the most, and I guess particularly in the concept
3 of the event. I just may have a mental block with
4 this where I-just-got-my-knee-replaced pain, sweet.
5 I got the event right there.
6 But coming into Dimension 1, coming into
7 event, you almost have to start with the diagnosis.
8 You have to start at the bottom of the iceberg up
9 top. Again, I'm probably being as vague as the
10 concept itself. But those are the two I struggled
11 with the most.
12 MALE SPEAKER: There were a couple of
13 comments that were excellent yesterday, suggestions
14 about linking this to ICD-10. Do you think that
15 would have been a helpful launch into the event in
16 your schema, and would it take care of that tension
17 between Dimensions 1 and 2?
18 DR. KENT: Possibly, yeah. Yes, sir?
19 MALE SPEAKER: Mike, just a quick comment.
20 So coming at this from a completely different silo,
21 I've sat with sponsors who intend to develop
22 molecule, where a regulatory scientist will say,

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1 well, I'd like to see it work in an acute pain
2 indication. Then they say, well, maybe a surgical
3 or nonsurgical. And then they drop the bomb, well,
4 why don't you try in visceral pain?
5 At that point, you want to shoot yourself
6 because you can't diagnosis what the hell
7 you -- who's going to go into it at the start. You
8 prospectively have, as you said, a lot of negative
9 diagnostic signs. And at the end of months of
10 thought, it's like, goddam, I only got 5 patients
11 enrolled in this study.
12 So this is probably one of the most vexing
13 areas that I've seen both from a clinical
14 presentation point of view but also in trying to
15 deal with it. And I've had a number of colleagues
16 suggest we should just eliminate the visceral pain
17 category because it's just the trash bag of stuff
18 that you can't figure out at the start.
19 I wonder what your comment is after having
20 to wrestle with this concept for a couple of weeks
21 now?
22 DR. KENT: Well, it's probably not worth

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1 throwing out just because it has such a vast amount
2 of impact, especially I think in the ER.
3 Yes, that's an interesting point. I don't
4 think you can throw it away. I think about the
5 initial chronic pain taxonomy and that bottom
6 category of "not otherwise specified," not that
7 this is synonymous with that, but it falls into the
8 vagaries of that where it's just going to be tough
9 to do.
10 Going on, you know, Dr. Bruehl's studies
11 with CRPS and stuff like that, let's just be
12 honest, it's going to take a lot of work and
13 decades, and decades, and decades to get to that
14 Jaffe textbook of surgical procedures, where you
15 look up how to do -- as a CA-1, how to do the
16 anesthesia for acute cholecystitis, and there our
17 taxonomy is for what the acute pain taxonomy and
18 diagnosis for it is in terms of percentage of this
19 pain, percentage of that pain, percentage of risk
20 trajectory.
21 I'm not saying that's going to happen, but
22 we're a long way with it. And that's one of the

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1 things I've realized every day. We think we have a
2 lot of work to do in chronic pain. We have a lot
3 of work to do in acute pain, where we think that we
4 know what's in front of us, but when you actually
5 start asking the numbers and look for the
6 analysis -- I think we kind of are starting to know
7 about total knee because that's all we really talk
8 about anymore. But I think we have a lot of work
9 to do.
10 I don't know if that answered your question.
11 Yes, sir?
12 MALE SPEAKER: I had a question. Under
13 Dimension 4, the milieu that Dan was talking about,
14 how do you account for, in clinical trials as well
15 as practice, the effect that the therapeutic
16 intervention may have on the diagnosis and also on
17 outcomes?
18 By outcomes, I don't mean necessarily
19 beneficial but adverse. It may worsen the
20 condition as you're trying to study the therapeutic
21 efficacy of the agent you're studying.
22 DR. KENT: I looked over to see if

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1 Bob Dworkin was there. That's a great question. I
2 don't have an answer to that to --
3 MALE SPEAKER: I mean, certainly for
4 example, with opioids, this role, effects of
5 opioids, at least when I was taught, was somewhat
6 controversial, and now, we use them; I understand
7 that. But still they present complications for
8 diagnosis and maybe in some ways confirm a
9 diagnosis; I understand that as well. That's
10 Dimension 1 and 2.
11 But I'm more concerned about the milieu that
12 was spoken about yesterday, where there may be
13 adverse effects of the medications we're using and
14 that we're studying or evaluating, and how they may
15 actually diminish any sensitivity to the
16 therapeutic effect. And maybe that's why there's
17 such difficulty in conducting the trials that Paul
18 was talking about.
19 MALE SPEAKER: Can I just comment? I
20 thought you put on the screen there exactly what I
21 had been thinking, because as I've been watching
22 these talks and have been looking at what we came

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1 up with yesterday, I think the dimensions map not
2 entirely but fairly closely with what the chronic
3 pain had.
4 I'd just like to mention that and get
5 everybody thinking, because this afternoon, after
6 we're finished with all the talk, I think that will
7 be a very useful thing to do, is to revisit these
8 and maybe think about how we can get it as close as
9 possible to what the original 5 dimensions were
10 just for consistency.
11 But the more I think about it, I think what
12 we mentioned yesterday all fits pretty well, with a
13 couple of exceptions with what we came up. I think
14 you did a great job putting it together.
15 DR. SURESH: First, I want to congratulate
16 you on taking on this really difficult topic. It's
17 a lot of work, and I would have happily sponsored a
18 couple more drinks for you if you could have gotten
19 a little bit more work done.
20 (Laughter.)
21 DR. SURESH: The question I had -- and this
22 is the slippery slope that again we get into.

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1 GERD, you talk about GERD. In pediatrics, we have
2 this EE, eosinophilic esophagitis. These are
3 recurrent patients who keep coming back to us.
4 Is this an acute or chronic? Like a sickle
5 cell disease patient who then comes in with an
6 acute crisis, how do we -- because the distinction
7 is going to be really difficult and it forms a
8 really good framework especially as we are
9 submitting the ACGME paper for acute pain. There
10 was no address of this particular issue, so I was
11 just curious to see your thoughts.
12 DR. KENT: That's a good point. And I think
13 that talking to Roger Fillingim yesterday, the
14 keyword I would focus on, whatever we come up with,
15 is "flexibility."
16 If you go by the text book, the textbooks,
17 they talk about the current, subacute current. And
18 they just chose a line in a sand saying that any
19 recurrent visceral process that is -- we exclude
20 any recurrent process that has a high probability
21 of chronicity from what we consider to be acute
22 visceral pain.

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1 I'm not saying that's what -- I'm just
2 saying that's what the book said, or one of the
3 books in one of the articles that I sifted through.
4 With things like eosinophilic esophagitis,
5 you bring up a really good point. I don't know
6 what to cut off. I don't think that's 7 days, but
7 I think in other things, it could be 7 days. And
8 that's why I think this speaks to the mammoth
9 amount of work that needs to get to done.
10 I think each condition or each pain
11 condition we talk about, it's going to have its own
12 unique transition point to when we consider it,
13 This needs to be managed in, and we'll call it
14 arbitrarily a chronic pain setting.
15 I think that's going to be
16 condition-specific, and I think it's an elephant in
17 the room because that's going to take a lot of work
18 in terms of trying to put a blanket over all acute
19 visceral GI events, let's just call -- let's call
20 chronic once they've occurred 3 times.
21 That may be useful from clinical standpoint,
22 but I think, especially for an ACGME standpoint and

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1 the development of acute pain medicine physicians,
2 I think it's even more important to make that gray
3 to encourage that crosstalk between acute pain
4 medicine physicians and chronic pain physicians so
5 that there's not a delineation but a continuing
6 conversation. And I know there will be big
7 disagreements on that, but that's just my own
8 personal view.
9 So I think it's going to be
10 diagnostic-dependent, and it's going to just take a
11 lot of work, and probably institutionally, your
12 institutional capability.
13 At Walter Reed, we don't have block jocks.
14 With the acute pain medicine service, we do it all.
15 We manage all in-patient pain. We do the blocks;
16 we do everything. We do in-patient.
17 Other institutions don't have that model.
18 And that's not bad. That's just what that
19 institution has. Maybe you have other institutions
20 where you just have the block guys, and then
21 chronic pain manages everything afterwards.
22 That may not be a wrong thing. It may work

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1 really great for that institution, but that
2 institution may have defined eosinophilic
3 esophagitis as, you know what, our chronic pain
4 guys manage that just because these are our
5 pathways. Our outcomes are doing great. Our
6 patients are happy.
7 So just too muddy the water even more, I'll
8 throw that out there. I'm sorry. I'm taking up
9 too much time.
10 DR. TERMAN: No, no. Thank you very much.
11 Thanks for all that work.
12 Just a reminder that this meeting is to
13 develop a framework, not to necessarily get every
14 hole filled for every event type. The idea is to
15 develop a framework in the same way that was done
16 with the original AAPT meeting, and then later had
17 to be filled in by the various work groups that we
18 heard about yesterday.
19 So the next talk, again, a little bit of a
20 grab bag in terms of cancer and immune-mediated
21 pain. Knox Todd, who until recently is from
22 MD Anderson and is now from ABIA, a bar stool in

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1 Argentina; is that right?
2 (Laughter.)
3 Presentation – Knox Todd
4 DR. TODD: We call it a bar stool, yes. Si,
5 de barra.
6 Thanks. This is a daunting task for me.
7 When Bob and Dan asked me to do this, I said, thank
8 you so much for this daunting task. Would you
9 please limit the topic to cancer pain? Which I've
10 done. So take out "immune-mediated pain."
11 I was thinking about the stages in my
12 career, and there was a time at which I
13 actually -- like all academics learn more and more
14 about less and less. Right? That was my -- that
15 was the career -- that was the plan.
16 In thinking about the visceral, the pain
17 question, I was thinking about scopes, colonoscopy.
18 So my brother had a diagnosis of colon cancer at a
19 very young age; taken care of. He's in his 80s
20 now. He's doing great.
21 But all the family had to get screened. So
22 I'm in my 30s, fine. I'm at Emory. My buddy in GI

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1 says, come in, let's do your scope. I said, "Oh.
2 I'd like to learn more about this. I would like
3 absolutely no analgesia or sedation during this
4 event." And I wondered, would this be a great
5 visceral pain model?
6 It was an interesting hour. It seemed like
7 5 hours. It was not a bright thing to do, but I
8 did learn more and more about less and less at the
9 time. I've subsequently had two -- passed that,
10 offline, with whatever, propofol or -- not there at
11 all for that experience.
12 For the last few years, I'd been more of an
13 administrator, so I've learned -- now, my job is to
14 know a little bit about a lot of things. And I'm
15 getting toward the point in my career where
16 I -- there's so many things about which I know
17 absolutely nothing. That's really success for me.
18 This is an area I've been working in as a
19 manager, developing a new department of emergency
20 medicine, MD Anderson, which is a task that we just
21 finished up. There's MD Anderson at the bottom.
22 It's a 55-bed emergency department, about 25,000-

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1 patient visits a year, all for cancer.
2 When I got there in 2010, this was the first
3 article that looked at the presence of emergency
4 department cancer visits.
5 It's a North Carolina study. Sam, you
6 probably know these people. It's from the
7 NC DETECT program, which was a surveillance system
8 built for bioterrorism as I recall. It's been used
9 for a number of things, but the first study that
10 looked at cancer visits, cancer patients who visit
11 the emergency department.
12 Like all visits to the emergency department,
13 pain was the number one reason patients with cancer
14 came to us. Oftentimes in this population, the
15 visit to the emergency department was the index
16 visit where cancer was diagnosed. And that had
17 some meaning when we start thinking about how to
18 define acute cancer pain.
19 Oftentimes, patients would come to the
20 emergency department here with cancer progression,
21 symptoms of progression, treatment issues,
22 radiation, chemotherapy. And when we think about

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1 that, we had to go back and think about this event
2 process that I've been hearing a good deal about.
3 I had a sad -- unfortunately, a good friend
4 of mine was diagnosed with lung cancer just 3 weeks
5 ago; New York, went to Mount Sinai, into the ER
6 with symptoms. She said, "You know, this has been
7 bothering me for a long time. I've had this funny
8 kind of pain in my chest." And she's 50, a
9 nonsmoker, spent a lot of time at 9/11 a number of
10 years back.
11 Went in. Finally took maybe about 6 months,
12 these sorts of symptoms; just kind of unbearable,
13 went in, was diagnosed with a stage 4 non-small
14 cell with leptomeningeal disease. It gradually
15 progressed. My wife and I just went up and
16 transported her to Florida.
17 But these visits to the emergency
18 department, obviously, her life was devastated at
19 that time, and you can imagine all her reactions:
20 anger, pain, frustration, guilt. Nine-year-old
21 son, my godson, just really crucible-type
22 experiences in the emergency department with pain.

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1 But I was wondering, when do we think about
2 event in that case? Was it the genetic mishap
3 perhaps related to 9/11 exposure 10 years ago? I
4 have no idea. Was it some build-up in the ischemia
5 lactate in the tumor mass that caused her symptoms?
6 I really have no idea.
7 But in the North Carolina study, pain is the
8 number one reason people come to the emergency
9 department with cancer-related problems. It looks
10 like it's about 30 percent or so of all
11 cancer-related visits in North Carolina.
12 We repeated a similar study in Houston, and
13 we think the number of emergency department visits
14 related to cancer is about 1 to 2 percent of all
15 visits. For us, that would mean -- what do we
16 have, 130 million visits a year -- a lot of visits,
17 1 to 3 million, something like that, a year in the
18 United States.
19 If you look at the cancer literature and try
20 to think where does pain fall out, there's not much
21 separation between acute and chronic pain. Most of
22 the literature assumes that all cancer pain is

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1 chronic. And if you look at the prevalence of pain
2 and different cancer types, head and neck cancer is
3 always at the top of the list, head/neck, GI, lung
4 with others with a lower prevalence, which we might
5 want to think about when we look at particular
6 candidate models for studying acute cancer pain.
7 This is the quotation from Roselyne Rey that
8 Dan referred to the other day. He did a great job,
9 by memory, of that quotation. But it actually
10 reads, "Pain is bio-psycho-social phenomenon.
11 Nociception represents anatomy and physiology, but
12 cultural and social factors are the foundation for
13 the expression and treatment of pain."
14 I don't think there's any condition where
15 that social and cultural meaning is so strong as in
16 cancer pain. And if you look at temporal trends on
17 how we approach treatment in cancer pain, look at
18 the quote from the late 1800s, talking about the
19 use of opioids to control terminal cancer pain, and
20 the 180-degree pendulum swing in the mid part of
21 the last century where in JAMA, one of our
22 physicians noted that addiction is a bad side

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1 effect of opioid treatment for cancer.
2 Where we are today, I don't know. But I do
3 know that cancer has a privileged place when it
4 comes to pain. We can have lots of discussions
5 about how cancer pain, chronic cancer pain, differs
6 from non-chronic cancer pain and treatment
7 approaches. We know that many patients with cancer
8 tend to be surviving longer now. These questions
9 are incredibly complex to tease apart.
10 So as a clinician -- this was asked I think
11 yesterday -- what would we like this taxonomy to
12 do? Certainly, when we assess cancer pain, we look
13 at the presenting features, we try to make guesses
14 about pathophysiology and prognosis and determine
15 our treatment plans.
16 There is a long history of various
17 assessment tools related to cancer pain. And in
18 looking at some of the literature and thinking
19 about this, it's really a daunting task to look at
20 the past work in this area and think how to evolve
21 that into another taxonomy.
22 Probably, the Edmonton system is one of

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1 the -- although developed in a single-center,
2 perhaps not as consensus-based as others, it's
3 descriptive and somewhat a prognostic
4 classification scheme.
5 Many of these systems give a hierarchy to
6 neuropathic pain, elevating it over other types of
7 pain. Some of these tools are quite crude, the
8 Pain Management Index being one of them, many
9 limitations in terms of content validity, lots of
10 need for validation studies.
11 It's wonderful that the papers are being
12 published in two of the U.S. journals. Is that
13 correct, Dennis? So how do our editors, how do our
14 editorial staffs view these assessment schemes,
15 what are the standards for using these?
16 This is a typical clinical approach. We
17 look at the sensory features of the pain experience
18 as we can collect them from our patients, look at
19 what is the meaning of pain to them, what pain
20 behaviors do we see, try to understand the social,
21 culture, and effective components of that
22 experience and try to arrive at an etiology and

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1 then a treatment plan.
2 This is the typical classifications you'll
3 see for -- like I said, you'll note that when you
4 see this, you always see cancer in the middle under
5 "mixed," right? Isn't it always there? It's one
6 line, "cancer." It's a mixed pain.
7 It just means that cancer is so many things.
8 That's why I think tackling something like acute
9 cancer pain is such a daunting task: tumor
10 invasion, direct neuropathic pathophysiology,
11 leptomeningeal disease. We'll talk a little about
12 chemo neuropathy. Various somatic, direct invasion
13 of tumors into the soft tissues, bony mets, and
14 then visceral pain, quite common in cancer
15 patients. And the number one cause of visceral
16 pain in my emergency department, MD Anderson, is
17 bowel obstruction, a very common presentation.
18 In general, the literature would tell us
19 that about 75 percent of cancer pain is due to the
20 tumor itself. About 25 percent is due to the
21 treatments of cancer: surgery, chemo, and
22 radiation. Then depending on your patient

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1 population, there's a large proportion of these
2 patients who have non-cancer pain syndromes, and
3 how to tease these apart is going to be really
4 tough in this area.
5 There's so many things going on at the same
6 time. It's kind of like a bad day for an air
7 traffic controller when you have multiple planes
8 that are unstable in the air and trying to keep
9 them all afloat and achieve the best outcome for
10 the largest number of passengers.
11 Clinically, using the dimensions that we had
12 before coming into the meeting, we get around 1,
13 1 and a half, and then most clinicians will try to
14 find a bucket to drop pain into. We may think,
15 well, this is neuropathic syndrome under one of
16 these categories. This is due to surgery; this is
17 a radiation plexopathy; this is some paraneoplastic
18 syndrome or some chemotherapy-related peripheral
19 neuropathy, and that will help us arrive at a
20 treatment strategy.
21 We'll try to go through the core diagnostic
22 criteria -- the core dimensions as -- or the

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1 dimensions as they were presented to me, briefly,
2 and I'm going to -- a lot of this is repetitive,
3 obviously. But I'm going to highlight some
4 questions that I had in thinking about going
5 through this as it relates to cancer pain. And
6 then we'll talk about a few models that might be
7 useful for a study in here; I think there's a lot
8 of promise. And we'll identify some candidates
9 using the criteria on the bottom.

10 So core diagnostic criteria. When I see a
11 patient with pain, the first thing I'd have to ask
12 is, is cancer present? And that would seem to be a
13 reasonable thing and fairly easy to figure out.

14 Remember, that a number of patients who
15 present, say, to my treatment setting haven't been
16 diagnosed. It's their index visit, so they don't
17 have a diagnosis of cancer yet, difficult to know
18 how to study that population.

19 For a clinical trial, would patients be
20 required to have a tissue diagnosis? How extensive
21 would that tissue diagnosis be in order to enter
22 into a trial? I think those are questions that we

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1 could ask.

2 Then what is probably more troubling here
3 is, is the pain that we're attempting to study
4 really cancer-related? I mean, there are any
5 number of comorbidities that patients with cancer
6 have. And we might think, well, radiation for a
7 tumor or chemotherapy and pain related to that,
8 that's clearly cancer pain, right? Would you all
9 agree with that?

10 So what about post-procedural pain? Henrik,
11 you have a patient who has a mastectomy. Is
12 post-mastectomy pain, is that a cancer? Is that an
13 acute cancer pain model?

14 I would say, well, probably. But it kind of
15 depends. If the post-operative course or the
16 features of that procedure are really
17 indistinguishable for the patient without cancer,
18 I'm not sure how useful that model might be;
19 anyway, empirical questions that we can answer.

20 The difficulty in the last question, the
21 temporal nature, is pain acute, how do we deal with
22 all these planes in the air, these multiple pain

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1 trajectories for a patient who may have pain due to
2 tumor, predictable pain due to treatment, pain due
3 to comorbid conditions. How do we decide what
4 these represent? How do we put those into buckets?
5 How do you sort of prune and sharpen this taxonomy
6 to take care of those things?

7 Even breakthrough pain, if it's not due to
8 end-of-dose failure, if it's -- you know,
9 oftentimes, breakthrough pain is the presentation
10 of an extension or a progression of cancer. Is
11 that an acute pain? Probably, but difficult to
12 tease out; or should we just decide that the only
13 cancer pain we're allowed to study in an acute
14 cancer pain model is that there's no prior chronic
15 pain or pain unrelated to the new event.

16 Anyway, interesting questions I don't have
17 an answer for.

18 We mentioned, too, it was perhaps somewhat
19 easier -- the typical features, again, a wide
20 variation in pain features across cancer pain
21 syndromes. And in cancer, we see symptom clusters.
22 Very often pain is associated with wasting, with

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1 depression, with fatigue, and there's
2 multidimensional assessments addressing all of
3 these particular symptoms we need to think about
4 how to tease apart or perhaps lump together.

5 Dimension 3. Cancer is a disease of aging.
6 So many people with cancer, it's an aging
7 population, are going to have multiple
8 comorbidities. How do we deal with those? Those
9 comorbidities may influence our treatment plans,
10 depending on the prognosis that the comorbidity
11 would imply for someone who presents with cancer.

12 Certainly, comorbidities are associated with
13 various toxicities that will limit our ability to
14 treat pain and limit our ability to treat cancer.
15 And there's some conflict that could occur between
16 those two goals. We'll talk about that in a bit.

17 Psychiatric comorbidities associated with
18 the cancer, you can imagine that my friend went
19 through a number of stages as she dealt with her
20 new cancer diagnosis.

21 Interestingly, with regard with substance
22 use, coming back to the discussion, these temporal

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1 trends and how we think about opioids, say in
2 cancer, there has been some assumption by many of
3 my colleagues in emergency medicine that cancer is
4 a vaccine against substance abuse.
5 We think this is crazy, but it's
6 commonly -- cancer is a morally-positive disease to
7 have, right? One of the things when I came to MD
8 Anderson, I was interested in was how do we think
9 about this, how do we study this in a place where
10 there's perhaps more light and less heat than
11 perhaps studying another condition.
12 So one of the things we did is look
13 at -- I'll just use a simple -- so risk
14 stratification for opioid abuse risk in cancer
15 patients in the emergency department, and found,
16 really, kind of a high proportion of our patients
17 were, by that assessment tool, at risk for opioid
18 abuse.
19 At the same time, we looked at prescription
20 monitoring programs statewide to say, well, is
21 there something that would suggest that there are
22 problems? And indeed, there were associations

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1 between subscores and prescription monitoring
2 program data.
3 So I went back and asked my patients in a
4 survey, what do you do with your opioids? Because
5 in the cancer community, we always had patients who
6 were switching from one opioid to another one.
7 Remember, multiple planes in the air, multiple
8 approaches, and many opportunities for drugs to
9 filter out of the healthcare chain.
10 So a decent proportion of my patients
11 explained to me, quite patiently, that they were in
12 dire economic strains. Cancer is an economically
13 devastating condition. They have a valuable drug.
14 "What do I do, Doc? Pay the rent?" So these
15 issues are there in this community and they're
16 often not talked about.
17 The consequences of acute cancer pain, as
18 you can imagine, tremendous effects, even
19 existential threats with a new symptom related to
20 cancer. The patients, when they come to the
21 MD Anderson emergency department with a new
22 symptom, come in with incredible fear as to what

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1 the meaning is of this new symptom.
2 We spend a lot of time doing family
3 counseling in emergency departments trying to sort
4 out the multiple communication issues they may be
5 having with their caregivers, the threats that this
6 pain represents for their social roles.
7 One of the things about cancer, particularly
8 those conditions that are likely to have a negative
9 functional trajectory, if you're trying to
10 understand the consequence of pain, we're less
11 often attempting to return or restore a patient to
12 previous function than to prevent or delay a
13 progressive decline in functional status, so a bit
14 of a difference between acute cancer pain and other
15 acute pain syndromes.
16 Now, if you think about personalized
17 precision medicine, oncology, right, is the place
18 to be. Huge amounts of data, huge amounts of -- as
19 Donald Trump would say "huge amounts" of
20 computational capacities, statistical models to
21 deal with genomic data, genome-wide association
22 study -- incredible amount of data. And I think

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1 the pain community would benefit from a closer
2 alliance with the oncology community, closer than
3 it already is.
4 Pain is a brutally inflammatory condition,
5 so it would seem that this is a population for
6 which an acute to chronic pain transition is quite
7 likely. It may be very sensitive a model for
8 studying these things.
9 Again, with multiple cancer syndromes
10 overlapping, how to decide on more specificity, how
11 to prune that tree to provide more information is
12 going to be a complex task.
13 We talked a little bit about addiction. One
14 of my colleagues, Cielito Reyes-Gibby, has
15 published a couple of papers looking at pain as an
16 independent predictor of survival in head/neck
17 patients. Why is that? What's the mechanism for
18 this?
19 There is interesting data,
20 somewhat epidemiologic with some biological reason
21 to it, that perhaps mirror opioid receptor
22 activation is associated with tumor progression,

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1 epithelial mesenchymal transformation in metastatic
2 disease. I don't know if that's real or not, but
3 there are other analgesic modalities:
4 antioxidants, steroids even that may interact with
5 our goal of trying to provide tumor-directed
6 treatment. And perhaps pain treatments may on
7 occasion inhibit our ability to provide
8 tumor-directed treatments.
9 This is a grab bag of different issues.
10 There are many classification schemes related to
11 tumor itself, treatment, and prognosis, how do we
12 capture those elements in a scheme like this. And
13 maybe this is simpler than I think, just picking
14 and choosing how you want to do this. There's so
15 many institutional infrastructure, structural
16 organizations that have a stake in this and how do
17 we interact with those in attempting to develop an
18 acute cancer pain taxonomy?
19 We talked a little bit about the impact of
20 pain therapy and our ability to deliver cancer
21 therapy. And sometimes, there must be a tradeoff
22 there and important to study.

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1 Just thinking about a patient who comes to
2 the emergency department with a spinal cord
3 compression, and I want to give that patient
4 steroids, I need to know that that patient doesn't
5 have a lymphoma that might be glucocorticoid
6 responsive before I do that; so some interesting
7 questions in how to deal with that tradeoff between
8 pain therapy and treating cancer.
9 There are a number of schemes out there from
10 NCI that detail how we're supposed to judge
11 toxicities of agents, how do we incorporate those
12 into the system. And I keep going back to my
13 friend who had this acute pain syndrome.
14 So what would I learn out of this is an
15 acute pain syndrome that I can recognize in the
16 emergency department, perhaps accompanied by a
17 biomarker that would allow me to diagnose cancer
18 before it was stage 3 or stage 4. And that's
19 really where the money is in trying to prevent the
20 consequences of cancer. Screening and preventing,
21 is where we need to go; might there be a phenotype,
22 a marker that could help me understand who needs a

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1 more thorough work up.
2 Sean and I were talking about rapid learning
3 systems and how we capture information from
4 patients, from clinicians, investigators, in an
5 efficient fashion that would allow us to
6 incorporate that into our larger databases.
7 How do we think about editorial consensus
8 about how to develop a system like this, how to get
9 it accepted within our journals? Should that be an
10 international effort or remain national? Are our
11 instruments culturally robust, and will they cross
12 the borders that exist within even in the
13 United States?
14 So what models might we think about? And I
15 just put these up as I know useful things to think
16 about. Whether these are the right models, I
17 really have no idea, but here's my rationale.
18 If you want to go for prevalence, certainly,
19 head/neck cancer would seem to be a disease with
20 high pain prevalence, early pain presentation,
21 dense trigeminal innervation, and very much large
22 functional consequences.

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1 So every time we eat, swallow, wet our lips,
2 that's going to impact or cause pain, and the
3 ability to function with pain during that period of
4 time is very important in terms of preventing
5 hospitalization, allowing us to tolerate chemo and
6 radiation therapy.
7 There are probably ways to think about the
8 acute to chronic pain transition that we will be
9 able to impact. There are mouse models that we can
10 use to study underlying mechanisms. It meets a lot
11 of the criteria that would seem to be important
12 here.
13 Bony mets, I think that's come up with the
14 chronic pain group, but mouse models have been
15 around for 20 years to study. Bony mets,
16 interesting condition where the primary tumor in
17 its location may not cause pain, but it causes pain
18 in the metastatic site, presumably due to local
19 circumstances. But some mets cause pain; some mets
20 cause no pain, and it makes no sense. It's like
21 low back pain. Imaging doesn't really correlate
22 with symptoms in those patients. Why is that?

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1 Can we use phenotypes in this population to
2 predict response to therapy? And a number of
3 mediators are proposed here, but would seem to be a
4 reasonable acute pain model and has synergy with
5 the chronic pain effort.
6 Chemotherapy-associated pain, I think you'd
7 all agree, is probably a reasonable thing to look
8 at. Very common during chemotherapy, lots of
9 important implications for whether patients can
10 tolerate therapy, and fairly distinct acute
11 neuropathic pain syndromes that may be easy to
12 relate to a specific agent.
13 So one can tease apart taxane and
14 platinum-based mechanisms spatially in the
15 periphery, dorsal horn and central nervous system
16 by mechanism. And there's some indication, given
17 that many neuropathic pain drugs don't work well
18 for this condition, that these mechanisms might
19 point to a more profitable areas to explore.
20 Certainly, acute chemotherapy-associated
21 pain happening over days to weeks is predictive of
22 chronic peripheral neuropathy. So again, a nice

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1 tie-in between the chronic pain effort and the
2 acute pain effort.
3 A bear for us in the emergency department is
4 mucositis. Chemotherapy or radiation-related
5 mucositis has huge functional implications. We
6 very commonly are forced to admit patients; they
7 will get TPN; they will end up with gastrostomy
8 tubes because they cannot function because of their
9 pain.
10 How do we prevent that? There are a number
11 of assessment scales that we can use, a number of
12 topical and systemic treatments that might be
13 useful, all candidates for study, and again, nice
14 animal models to help us make a bench-to-bedside
15 translation.
16 Finally, post-mastectomy pain, the older
17 literature had these numbers up around 50 percent.
18 Once you do define post-mastectomy pain more
19 precisely, it comes to be about 25 percent will
20 have either severe or moderate pain going up to
21 6 months.
22 This is from Chris Miaskowski who identified

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1 various pain trajectories with a larger sample, is
2 continuing to do work to look at phenotypic and
3 genomic risk factors for these patients. And
4 again, we come to this question of how does a
5 mastectomy differ from a breast reduction surgery
6 in terms of consequences? What's the difference
7 there, and kind of a nice model to perhaps look at.
8 I'm sure you could choose any of these and
9 come up with good reasons to think about proposing
10 these acute cancer pain models. The list and the
11 data -- I mean this is really a daunting, I think,
12 task, And I can imagine this taking a long time to
13 do, not only the intellectual concepts, but just
14 the organizational issues in dealing with all of
15 the cancer organizations, dealing across very
16 established organizations with their own thoughts
17 about how to assess these issues.
18 So finally, on a more positive note, the
19 answer on the word cloud -- so I'm going to throw
20 back a word cloud. We're just finishing the first
21 book on oncologic emergency medicine, what I hope
22 is a more comprehensive text written by emergency

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1 physicians and oncologists, coming out in a couple
2 of months. This is the world cloud from our
3 chapter on pain treatment.
4 Many promising things about working with the
5 pain community. Again, huge data, large
6 repositories of information, large computational
7 capacity, complex organizational structures to work
8 through, but a wealth of support.
9 Considering NCI budget is larger than NHLBI
10 and NINDS combined. For this talk, I looked at the
11 NIH funding categorization tool, which is kind of
12 an art more than science perhaps. But cancer is
13 funded at 6.3 billion, number 4 of 256 conditions;
14 pain, 481 million, number 63.
15 Don't feel bad about that. Emergency
16 medicine is number 128. We're sandwiched between
17 inflammatory bowel disease and cannabinoid
18 research.
19 Nonprofits, the interest in looking at
20 toxicities related to cancer therapies, huge amount
21 of philanthropic funding in the country. This was
22 the culmination of some work over the last few

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1 years. NCI in the Office of Emergency Care
2 Research, which is kind of like the Pain Consortium
3 at NIH. It's got an office, a little bit of
4 funding, and some logistical support.
5 But it announced a new consortium of
6 emergency departments, most associated with a
7 conference of cancer centers to collaborate on
8 emergency department-related cancer research. And
9 I think this would be an ideal group to take
10 validation studies before as we think further about
11 this.
12 So that's a quick run-through. Thanks.
13 (Applause.)
14 DR. TERMAN: So we're going to wait and do
15 the acute neuropathic pain after the break. But if
16 there are any questions briefly for --
17 MALE SPEAKER: So I have a comment, which
18 is, first, it's fabulous that you're here doing
19 this because as you put the different Venn diagrams
20 up for different topics, I'm thinking you're
21 yourself at the intersection of several circles,
22 almost uniquely, among people on the planet.

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1 Where I'm going with this is also, I think
2 that it was very valuable that you called attention
3 to the sociological factors, which could influence
4 uptake of any taxonomy.
5 I think that for a number of years, for
6 whatever reason, the concept that acute pain is
7 worth studying, worth intervening, worth thinking
8 about became kind of eclipsed as the intellectual
9 center of gravity in the pain realm migrated to
10 chronic pain and, to some degree, cancer pain.
11 I think it was just a separate compartment,
12 and acute pain operationally was defined as the
13 services provided by the acute pain service in the
14 hospital, meaning the services provided by the
15 person carrying the beeper that day for the acute
16 pain service that never got a critical mass.
17 So I think this is terrific, and it speaks
18 kind of across the whole taxonomy. But we must
19 keep in mind the sociology of the intended users or
20 clients. Otherwise, this will just be in some box
21 that they perceive is not related to their own box.
22 DR. TODD: Right. And incorporate it -- one

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1 of the ways to do that is to bring them to the
2 table as early as possible. It's truly achieving a
3 consensus and figuring out who those people are and
4 how to engage them in a nonthreatening way.
5 FEMALE SPEAKER: It was a really nice talk.
6 I think your discussion of the chronic
7 post-mastectomy pain or post-mastectomy pain sort
8 of brings up one of the categorization problems
9 that we may run into.
10 Certainly, in a chronic realm, putting
11 post-mastectomy pain with cancer pain makes a lot
12 of sense. But then when I think about acute pain
13 after mastectomy, it almost seems to fit naturally
14 into the post-surgical.
15 So I wonder how -- and there may be a number
16 of different cancer-related surgeries that would
17 fall into this dilemma. I'm just wondering about
18 your thoughts about that.
19 DR. TODD: I think you're right, and I think
20 Henrik would probably agree that this is a
21 post-surgical model. The same issues of anesthetic
22 technique, the same issues of surgical approaches,

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1 nerve preservation, to my mind, put it a little
2 more in the post-surgical realm. Agree.
3 Henrik, right?
4 DR. KEHLET: Yes.
5 DR. TODD: Okay.
6 DR. TERMAN: Okay. Thanks, Knox.
7 So we're going to take a break. We're
8 running a little bit behind, but we have the room
9 until 10 o'clock tonight. Is that right? So I'm
10 going to keep the break at half an hour in case
11 those of you who haven't checked out yet need to do
12 that. So we'll be back at 10:45.
13 (Whereupon, at 10:17 a.m., a recess was
14 taken.)
15 DR. TERMAN: Hello. We're going to start
16 here. The next speaker is Srinivasa Raja from
17 The Johns Hopkins University again, and he's going
18 to be talking about acute neuropathic pain.
19 Presentation -- Srinivasa Raja
20 DR. RAJA: Good morning. Thanks to Bob and
21 Dennis for the invitation, and particularly thanks
22 to Greg in the sense that I didn't have to compete

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1 with the coffee break.
2 (Laughter.)
3 DR. RAJA: I did my presentation like many
4 of you, and I got done about a couple of days ago.
5 I thought we had already discovered the holy grail
6 of pain taxonomy, and Roger and Bob had already
7 found and discovered this holy grail, and
8 everything that we had to do was in relation to
9 this holy grail.
10 But yesterday afternoon, we thought there
11 may be some changes to this holy grail. Much like
12 Mike's presentation, I spent some time last night
13 trying to update the presentation, but without the
14 bourbon. So I'm not sure how well my update is
15 going to be compared to Mike's.
16 I think about a month or so ago, there was a
17 conference call among all the presenters. And some
18 of the discussion was what should we be presenting,
19 what should be our goal? And some of the questions
20 that came was, you need to look at, is this a good
21 bucket for an acute pain condition; is the
22 condition homogenous; give some examples of

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1 conditions that would be useful to include; what
2 are some inclusion/exclusion criteria; and what is
3 the usefulness of these conditions based on
4 problems, clinical, or research importance; and
5 does the condition share some common
6 pathophysiological mechanisms? So I'll try to
7 address some of these issues as we go along.
8 I knew that I was going to be speaking to a
9 very erudite, scholarly group of individuals, and I
10 thought I needed to be innovative and come up with
11 something cool. However, working through this
12 presentation, I realized that trying to reinvent
13 the wheel is going to be kind of challenging and
14 not very fruitful.
15 That's particularly because over the last
16 decade or so, NuPSAC, a Neuropathic Pain
17 Specialists group, has spent a lot of time coming
18 up with taxonomies and definitions for neuropathic
19 pain. So I'm going to take a couple of the studies
20 that have been done by NuPSAC and use that as a
21 foundation for some of the diagnostic criteria or
22 the core diagnostic criteria.

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1 Ralph Treede had a publication in Neurology
2 in 2008, and that was on a grading system for
3 neuropathic pain. And just recently,
4 Nanna Finnerup did an updated grading system, which
5 is now in press and will become out this year in
6 Pain.
7 What was found was looking between 2008 to
8 2015, there were 414 citations of this initial
9 grading system, and 316 of these had used the
10 definition that NuPSAC had come up with in 2008 for
11 their clinical trials, and used that as a kind of
12 concept for defining who has neuropathic pain.
13 So for example, the leading complaint
14 obviously is pain. And based on history, one looks
15 at the history of relevant neurological lesion or
16 disease and a pain distribution in a
17 neuroanatomically plausible distribution.
18 If that's not present, both those
19 conditions, then we say it's unlikely neuropathic
20 pain. If both those conditions, based on history,
21 are present, then you say it's a possible
22 neuropathic pain. Then you examine the patient,

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1 and if the examination comes up with pain
2 associated with sensory signs in the same
3 neuroanatomical distribution, then it becomes a
4 probable neuropathic pain. Then, to get to the
5 next stage of a definite neuropathic, confirmatory
6 tests are needed, such as diagnostic tests will
7 come to what that could be.
8 So this was kind of the grading system that
9 has been updated. In the infinite wisdom, they
10 don't talk about acute or chronic, so they talk
11 about neuropathic pain as such. I think the same
12 can be adapted for acute neuropathic pain as well.
13 Another study, again, sponsored by a
14 neuropathic pain special interest group, which was
15 published in Pain a year ago, was the attempt to
16 phenotype patients with neuropathic pain for
17 large-scale genetic studies.
18 This was based on the Delphi survey of
19 experts like you. One of the first things was
20 survey of a few questions, and these questions were
21 to determine sensitivity and specificity of
22 symptoms and signs and whether it could be done,

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1 whether it was feasible to be done by the patient
2 themselves contributing or the presence of
3 non-experts.
4 What the experts came up with was that if
5 you just look at symptoms, then it's thought that
6 patients could fill that in, and 75 percent agreed
7 that patients could fill in their symptoms, that
8 non-specialists could assess it based on symptoms.
9 However, in terms of sensitivity and specificity of
10 this approach, there was no consensus among the
11 experts. So symptoms by itself was a poor way of
12 diagnosing neuropathic pain.
13 It was felt that clinical signs are
14 essential, and 75 percent of the experts agreed
15 that if you add the clinical signs, that probably
16 the diagnosis can be made with some degree of
17 confidence.
18 The next round of this Delphi survey was the
19 panel was asked what is the combination that's
20 going to be needed to have a degree of certainty,
21 whether it'd be possible, probable, or definite?
22 And what the expert panel said, if the

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1 symptoms -- a body chart in the history, 80 percent
2 felt that a possible diagnosis of neuropathic pain
3 can be made. But for a probable diagnosis, you
4 need the clinical signs, the symptoms, body chart
5 and a history. And really, for a definite
6 diagnosis, you needed some additional
7 investigations.
8 So this is a kind of framework, which could
9 help up develop the diagnostic criteria or the core
10 diagnostic criteria for neuropathic pain.
11 As you know, there are a lot of
12 questionnaires that have come up with neuropathic
13 pain: the LANSS, the painDETECT, DN4, NPQ. These
14 were discussed. While these help provide us kind
15 of a spectrum of the symptoms and signs, it was not
16 something we felt was essential for the diagnosis
17 and probably not useful in the broad taxonomy
18 context.
19 Again, a number of diagnostic tests such as
20 quantitative sensory testing, somatosensory evoked
21 potentials, laser evoked potentials, et cetera,
22 skin biopsies. These are maybe acquired for the

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1 research aspect in terms of where you want a high
2 degree of specificity, but it's probably not useful
3 for taxonomy and a diagnosis in the clinical
4 setting.
5 So if you come up with a terminology of
6 acute neuropathic pain, it can be defined as acute
7 pain caused by a lesion or disease of the
8 somatosensory nervous system, as NuPSAC defined
9 earlier. It may be the result of injury that
10 involves any aspect of the peripheral or the
11 central nervous system.
12 So we had this discussion about including
13 organs or systems in our taxonomy, and based on
14 that, one way would be to characterize them as
15 acute peripheral neuropathic pain and acute central
16 neuropathic pain.
17 Much like Mike, what I did was initially
18 started with the earlier core diagnostic criteria,
19 but then took some of the discussions that went on
20 yesterday and said, do some of the themes fit into
21 those core diagnostic criteria?
22 So let's just take acute neuropathic pain,

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1 and the one core diagnostic criteria was use a
2 NuPSAC definition of neuropathic pain that is
3 related to an injury or a disease. The injury is a
4 clear event. The disease, maybe the event, as was
5 discussed, may be a little bit more challenging as
6 to when the event occurs. But clearly that is part
7 of our core diagnostic criteria.
8 The one question we can discuss is, the
9 duration between the event and the diagnosis or the
10 neuropathic pain, should that be days, should be
11 7 days, should be 30 days, should be weeks? What
12 should, be, that temporal relationship between that
13 trauma or the injury and the event?
14 The common features of neuropathic pain has
15 been very well described, the quality of the
16 neuropathic pain, as we said, in terms of the
17 different scales that have been used, the quality
18 of the pains have been well described.
19 We know the temporal relationship or time
20 course of events and the spatial distribution in
21 relation to the injury. So I think these common
22 features can be easily incorporated into the prior

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1 domain of dimensions of common features.
2 We talked about host, which was earlier
3 common medical comorbidities. And this could be
4 etiology-dependent such as for herpes zoster or
5 acute zoster-associated pain; a change in the
6 immune status such as associated with cancer or
7 HIV; aging in terms of vascular insufficiency
8 leading to amputation. So those are common
9 comorbidities that we can talk about. And these
10 are host factors, diabetes associated with diabetic
11 neuropathy and diabetic neuropathic pain.
12 So all of these are really host factors, but
13 they're also common medical comorbidities that may
14 be associated with neuropathic pain.
15 In terms of the fourth criteria of dimension
16 of neurobiological, psychosocial, and functional
17 consequences, it's been well known that these are
18 common in neuropathic pain states. In fact, work
19 by Blair Smith and their group has clearly
20 indicated that the quality of life impairment with
21 neuropathic pain is greater compared to
22 non-neuropathic pain states, but the functional

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1 consequences will vary depending on the etiology.
2 For example, the functional consequences of
3 somebody having an acute zoster pain with a single
4 dermatome will be very different from the
5 functional consequences of somebody who has
6 post-amputation pain.
7 So the functional consequences, the impact
8 on their functions will be very depending upon the
9 nature or the subgroup within the acute neuropathic
10 pain.
11 In terms of putative mechanisms, risks and
12 protective factors, we know a lot about the
13 mechanisms of neuropathic pain such as ectopic
14 activity, peripheral and central sensitization,
15 neurogenic inflammation, and descending inhibition.
16 So much is known about the putative
17 mechanisms. It may vary a little bit depending
18 upon the etiology. But again, it fits fairly well
19 under the dimensions that have been described
20 earlier.
21 So I thought, once we have this acute
22 peripheral neuropathic pain, we can then have

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1 possible etiological subgroups such as acute
2 neuropathic pain from an infectious disease. Good
3 examples are acute zoster, HIV, and leprosy. One
4 of the most common neuropathic pain states is acute
5 painful radiculopathy resulting from nerve root
6 compressions to this disease.
7 Acute post-nerve injury neuropathic pain,
8 such as causalgia or CRPS-2; acute post-amputation
9 neuropathic pain, obviously, there is some overlap
10 here between trauma as well as neuropathic but
11 clearly, nobody would argue that phantom and stump
12 pains are a neuropathic pain; acute trigeminal
13 neuralgia.
14 Again, we talked about chemotherapy-induced
15 neuropathy as a cancer pain. I think of it as an
16 acute toxic neuropathic pain, and that it is truly
17 neuropathic pain state resulting from a toxin such
18 a chemotherapeutic agent. So one could argue
19 should it come under cancer pain or should it be
20 under an acute neuropathic pain state.
21 What I'll present is some examples of how
22 some of these subgroups fit into the core

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1 diagnostic criteria that we've talked about. I've
2 taken some studies in these subgroups and looked at
3 the inclusion/exclusion criteria that have been
4 used in these clinical trials. And thanks to
5 Jennifer, who provided me a whole series of
6 articles, reading material for the last month in
7 terms of how the literatures use these different
8 subgroups, and then some additional epidemiological
9 studies in neuropathic pain state.
10 So let's take the most commonly studied
11 neuropathic pain state, zoster-associated
12 neuropathic pain. The pain has unique
13 characteristics. It's unilateral in distribution;
14 one or more spinal dermatomes, or in vivo
15 distribution; the pain can have spontaneous or
16 evoked characteristic.
17 There is a clear temporal relationship to
18 the zoster rash except for that subgroup where
19 there can be zoster-associated pain without the
20 rash. So there is a small subgroup that may be an
21 exception.
22 The examination of the patient is associated

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1 with negative signs of sensory deficits as well as
2 positive sensory signs of allodynia and
3 hyperalgesia. One can do quantitative sensory
4 testing and further characterize. I don't think
5 it's essential for the diagnosis but may be helpful
6 in subclassifying the acute zoster-associated
7 neuropathic pain.
8 When we look at the other dimensions, the
9 epidemiology and the time course is very well known
10 and studied. We know that there are some common
11 comorbidities such as aging, stress, decreased
12 immune status with HIV and cancer. We know the
13 psychosocial and functional consequences such as
14 effects on quality of life, social interactions.
15 And for example, in trigeminal acute zoster, there
16 may be vision disturbances.
17 We know a fair bit on putative mechanisms
18 and certain risk factors such as age, extent of
19 rash, and the early onset of antiviral therapies.
20 So I think there is kind of a slightly different
21 tick mark there because we don't know exactly how
22 the viral activation and the inflammation of the

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1 dorsal root ganglion cells results in the pain
2 state, so there may be some question on the exact
3 mechanisms. But in most of these dimensions we
4 know a fair bit in terms of acute zoster-associated
5 neuropathic pain.
6 Let's take the other most common neuropathic
7 pain state such as painful radiculopathy. Again,
8 the history will be fairly clear here of pain
9 radiating from the neck or the lower back to the
10 extremities.
11 So the pattern of the pain has a certain
12 characteristic to it. It may be in the innervation
13 territory of one or more nerve roots. The question
14 based on a number of the clinical trials that I've
15 looked at is when do you call it acute and when
16 does that transition to subacute or chronic? And
17 clinical trials have used either 30 days or some
18 12 weeks or longer.
19 So again, we can argue when is the
20 transition from an acute radicular pain or
21 radiculopathy to when it becomes subacute or
22 chronic.

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1 In terms of examination, the straight-leg
2 test has been shown to be positive. In terms of
3 its sensitivity and specificity, it varies a bit,
4 and that varies depending on what one takes at the
5 criteria. Studies, again, in clinical trials have
6 taken anything from a pain associated with a
7 30-degree leg flexion to a 70-degree. And maybe
8 some of the sensitivity and specificity will vary
9 depending on what you take as your outcome measure
10 in that examination.
11 Confirmatory tests could be MRI or CT,
12 looking at encroachment of disc material. The
13 studies have looked differential diagnosis of
14 cauda equina syndrome, other sciatic pain secondary
15 to tumors.
16 Again, because this is one of most prevalent
17 forms of acute pain states, its common epidemiology
18 is well known. Some of the comorbidities such as
19 obesity has been well described, the
20 neurobiological, psychosocial factors. And when
21 these are variable, it depends on the occupation of
22 the individual, it depends on the age of the

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1 individual.
2 The putative mechanisms, risk and protective
3 factors, again, risks such as obesity, occupation,
4 trauma are well known. However, the mechanism is
5 still unclear. We all think that cytokines
6 released by the disc material may be responsible,
7 and that justifies our use of epidural steroids in
8 these patients. But is that the true mechanisms?
9 We don't know.
10 So let's move on to acute post-amputation
11 neuropathic pain. Again, the core diagnostic
12 criteria of distribution of pain and a missing body
13 part, that its onset in 75 percent is within one
14 week so it is acute, and 50 percent within 24 hours
15 of the amputation.
16 The nature may vary in terms of frequency,
17 intensity, and the nature of the pain. Again, you
18 examine the patient. And some patients with
19 residual limb pain such as stump pain, palpations
20 of neuroma can cause pain and associated Tinel's
21 sign. And there is some association in the sense
22 that there's a close association of those who have

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1 stump pain or neuroma pain will also have -- a high
2 proportion of them also have phantom pain.
3 We know a fair amount on the epidemiology;
4 40 to 80 percent of amputees will have some degree
5 of post-amputation pain. It may vary between the
6 site and the patient population.
7 Some of the comorbidities that we know are
8 that it occurs more commonly in the elderly,
9 particularly when it's related to peripheral
10 vascular disease or diabetes. We know the
11 functional consequences. In fact, post-amputation
12 pain can result in higher risk for obesity, chronic
13 joint and low back pain. Patients with amputation
14 pain also have low back pain and sleep disorders.
15 A number of putative mechanisms have been
16 studies and described, and the risk factors such as
17 diabetes, peripheral vascular disease, trauma. A
18 number of mechanisms are well known in terms of the
19 ectopic activity from a neuroma, central changes
20 such as cortical reorganizations, and psychosocial
21 factors such as stress, depression, and
22 catastrophizing.

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1 There are some controversy with regards to
2 can this be prevented by pre-emptive neural
3 blockades or by changing surgical techniques, so
4 there are areas which we are still not clear about,
5 so that's a tentative tick mark up there.
6 The other acute neuropathic pain is after a
7 nerve injury. This is in the distribution of the
8 innervation territory of the lesion nerve, usually
9 distal to the site of trauma, surgery, or
10 compression. And you examine the patient. You can
11 demonstrate the sensory loss in the distribution of
12 the affected nerve and the presence of allodynia,
13 hyperalgesia, and can be confirmed with EMG or
14 neuroconduction studies.
15 With regard to chemotherapy-induced
16 neuropathy, I think it's an acute neuropathic pain.
17 The pain distribution is distal, usually
18 symmetrical in all extremities. And it's usually
19 fairly close to the -- although this says within
20 one month, there are reports that suggest that
21 within the first week of initiation of
22 chemotherapy, a good proportion of patients will

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1 have chemotherapy-induced neuropathic pain. And
2 again, this can be confirmed on examination, where
3 the pattern of distribution of this neuropathy or
4 sensory deficits and the nerve conduction, EMG, may
5 be helpful.
6 These were primarily peripheral neuropathic
7 pain states. How about some central neuropathic
8 pain states?
9 We all know that spinal cord injury is
10 associated with an acute neuropathic pain, and this
11 can occur as high as varying from 35 to 94 percent
12 of patients depending on which study you look at.
13 Post-stroke patients, again, 10 to
14 50 percent of stroke patients can have an acute
15 neuropathic pain. Acute traumatic central
16 neuropathic pain can result from plexus or avulsion
17 injuries or concussions and brain injuries, and a
18 group of central neuropathic pain with neurological
19 diseases such as multiple sclerosis.
20 We don't know what proportion of patients
21 with multiple sclerosis may have a pain that is
22 acute, in the sense early after their disease is

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1 diagnosed.
2 When we look at spinal cord injury, again,
3 and look at the core diagnostic criteria, the pain
4 distribution, it can be at or below the level of
5 spinal cord injuries, therefore, clearly a
6 characteristic distribution of their pain.
7 Onset, again, is fairly early, within weeks
8 after the injury, days to week. And they have
9 spontaneous or evoked dysesthesia, hyperesthesia
10 and paresthesia. Again, their examination has
11 these difficult findings and one can confirm the
12 spinal cord injury with CT and MRI, so we know the
13 level of injury.
14 Similarly, post-stroke acute neuropathic
15 pain has some clear core diagnostic criteria in
16 terms of the temporal relationship to the stroke;
17 the distribution of the pain in terms of the limb
18 contralateral to the lesion side, as well as in
19 some cases the ipsilateral phase; the sensory and
20 motor deficit; the changes in tone with exaggerated
21 reflexes and associated bowel or bladder
22 dysfunctions. And there are easily some

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1 confirmatory tests such as CT, MRI, and vascular
2 studies.
3 Based on these kinds, what I suggest is that
4 we have an acute pain state, so that is the event,
5 which is onset or duration is related to that
6 event. We then have an etiology or a mechanism
7 that is injury-specific or a disease to the nerves,
8 or the peripheral or the central nervous system.
9 So then we have an acute neuropathic pain,
10 and depending on the system, where the site of the
11 pathology is or the disease is, or the injury, we
12 can have an acute peripheral neuropathic pain or an
13 acute central neuropathic pain. I've given some
14 examples of these acute peripheral as well as acute
15 central neuropathic pain states.
16 There are several things that we need to
17 clarify for this study and future studies, that is
18 when does this acute neuropathic pain that we see
19 with these conditions, when does it transition to
20 becoming subacute or chronic?
21 What are the factors that predict this
22 transition from this acute to chronic neuropathic

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1 pain states? Is the mechanism of pain in acute
2 neuropathic pain different or similar to that of
3 chronic neuropathic pain states?
4 Are the therapies that we all know, which
5 have been well studied in chronic neuropathic pain
6 states, are they equally effective in acute
7 neuropathic pain?
8 Finally, as Steve has suggested, we need to
9 test the validity of the diagnostic criteria that
10 NuPSAC has suggested in terms of is that the gold
11 standard, and the reliability of the diagnostic
12 criteria.
13 So let me end by saying, we were asked to
14 answer a few questions. So the first question was,
15 is this a good bucket for acute neuropathic pain?
16 I think clearly acute neuropathic pain is a good
17 bucket to be used.
18 Is this condition homogenous? I think so.
19 There is some differences based on the etiology,
20 but overall this is a homogenous pain state.
21 I've given some examples about acute
22 peripheral neuropathic pain states, as well as some

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1 central neuropathic pain states as examples, which
2 can be used as subgroups within the acute
3 neuropathic pain states.
4 Based on some of the clinical trials, some
5 of the papers that Jennifer provided, I provided
6 some examples of inclusion/exclusion criteria that
7 have been used in these different studies.
8 Are they useful? I definitely think because
9 of their prevalence, the functional consequences,
10 that definitely this is a useful subset within the
11 taxonomy of acute pain.
12 Do they share a common pathophysiological
13 mechanisms? It's something I'm unsure of. There
14 are some common pathophysiological mechanisms, but
15 there are some differences between the different
16 peripheral versus central pain states. And I thank
17 you for your kind attention.
18 (Applause.)
19 DR. RAJA: Yes, Chad?
20 DR. BRUMMETT: Dr. Raja, could you expand a
21 little bit on the group's decision not to use some
22 of the self-report measures and why those weren't

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1 considered maybe -- just the application of those
2 in an effort like this would be very attractive,
3 right? It would make things much easier.
4 These could fit into different components of
5 what we're talking about because these could be
6 risk factors are they could be diagnoses. But you
7 can you talk to me a little bit about -- tell us a
8 little bit more about why that decision was made?
9 DR. RAJA: Yes. There was a lot of
10 discussion on these, on the self-report measures
11 and whether they should be used or not. I think
12 the self-report measures are very good screening
13 tools, and they are being validated as such in a
14 number of countries.
15 Therefore, it's a good tool overall to
16 screen the potential presence, but it was felt that
17 the sensitivity and the specificity of those and
18 the cumbersomeness of that, whether it should be
19 part of diagnostic process or not. And the
20 consensus was while it's a useful tool, it's
21 unlikely to be -- one of the things that Roger had
22 in his holy grail was to be simple; it should

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1 useable by everybody.
2 The tools vary quite a bit, some are more
3 simple than others. Some require just symptoms;
4 some require a combination of symptoms and
5 examination, so signs. So there was enough
6 variability between these tools, so no one tool
7 could be picked as the ideal tool. And I think the
8 consensus opinion was let's not use that as one of
9 our criteria.
10 DR. BRUMMETT: Did the issue of the fact
11 that there are a number of conditions that probably
12 haven't been deemed by the group to be neuropathic
13 pain but would have scored high, did that come up?
14 DR. RAJA: No, I don't think that was an
15 issue. Yes, Henrik?
16 DR. KEHLET: If we talk about acute
17 post-operative pain, how much is neuropathic?
18 Because it's difficult to do an operation without
19 nerve injury? Is there a given size of the nerve
20 that leads to neuropathic pain?
21 DR. RAJA: That's a good question, and you
22 saw that I didn't put post-surgical pain as a

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1 neuropathic pain because I left that challenging
2 question for Chris Wu to answer because that was
3 part of his box. I'll let him answer first, and
4 then maybe I can add on.
5 Chris, what do you think? Should that be
6 neuropathic? How much of it is neuropathic?
7 DR. WU: Yes. We've had other comments of,
8 you know, there's going to be -- for instance,
9 whether a cancer surgery, for breast surgery, is
10 that acute procedural pain or is that cancer pain.
11 So there's going to be overlap; there's no
12 question about that. My bigger concern is what are
13 the bigger boxes and would they fit, and then I
14 think everything else will flow after that.
15 So I'm more concerned -- I don't disagree
16 that this is an issue, but I'd rather figure out
17 what the big overall boxes, buckets are before we
18 figure something like this out, because obviously,
19 there's going to be overlap not only in surgical
20 procedures but other things like symptoms.
21 DR. RAJA: I agree with you. There can be
22 an incision in surgery without cutting nerve. So

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1 in theoretical basis, all post-operative pain can
2 be considered as neuropathic. On the other hand,
3 the challenge is the differential diagnosis between
4 an inflammatory pain state and a neuropathic pain
5 in the immediate post-operative period.
6 So unless you have a big enough nerve where
7 I can do a sensory examination and say I have a
8 loss of sensation in this area of the ilioinguinal
9 nerve, so it's a true neuropathic pain, I think the
10 differential diagnosis is going to be challenging
11 in the first week after the surgery because the
12 symptomatology between an inflammatory pain and
13 neuropathic pain in the post-operative period can
14 be overlapping.
15 MALE SPEAKER: Raj, could you comment on
16 your working group? I wonder -- I don't know the
17 answer, but it's a question of using a dermatologic
18 exam to find evidence of nerve injury when there
19 may be nerve injury that's predominantly in other
20 tissues that we can't examine. Has that ever come
21 for discussion?
22 DR. RAJA: Give me an example. Such as?

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1 MALE SPEAKER: Well, you said there is
2 zoster pain without a rash, but maybe it's a deep
3 tissue nerve injury by the zoster that didn't
4 predominantly affect cutaneous afferents.
5 So we've got pain in this distribution
6 that's deep and parietal, or muscular, or pick your
7 tissue, that's producing neuropathic pain that
8 doesn't have a predominantly cutaneous
9 manifestation. So the dermatologic exam becomes
10 limited, as it could be with any nerve injury.
11 DR. RAJA: I don't think the definition
12 specifically says a dermatological; it just says in
13 the possible distribution. It could be either
14 dermatological or myotomal. So if you have the
15 distribution of the appropriate myotomes, they
16 could still be under that criteria. I don't think
17 there's a big conflict there. But I don't remember
18 a specific discussion of that in the discussions.
19 MALE SPEAKER: Do you think there's a
20 difference between actual direct, either peripheral
21 or more central, nerve injury and the injury that
22 happens to the smaller nerves with any surgical

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1 procedure or any cutting procedure of the skin, for
2 example?
3 I mean, there is a qualitative difference,
4 certainly clinically, in how those patients
5 present. I mean, we know that around surgical
6 sites, there's plenty of evidence that there's
7 neuropathic pain in the immediate post-op period
8 from the initial event, and it happens very
9 quickly. But there's a qualitative and I would
10 argue a quantitative difference long-term between a
11 simple skin incision that didn't cut any major
12 nerve roots, or nerve branches, and an actual
13 direct nerve injury. And do you think that's worth
14 characterizing?
15 DR. RAJA: I think it's worth
16 characterizing. I think it depends on the
17 time frame after the initial injury that you're
18 looking at. I think it'd be much more challenging
19 in the immediate post-operative period.
20 When the initial inflammatory component
21 subsides, it will be a little bit easier to tease
22 those differences out. But my gut feeling, at

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1 least my own personal experiences, in the few days
2 to a week after the surgery, it's very difficult to
3 separate which component is from a nerve injury and
4 neuropathic nature or not.
5 Would you say something different Henrik?
6 DR. KEHLET: [Inaudible - off mic].
7 DR. TERMAN: Let me ask a question. So can
8 you just tell me again, when Tim talked about
9 pathological or pathophysiological mechanisms, he
10 talked about nociception, inflammation, neuropathic
11 pain.
12 The last line there -- that you can't see
13 under the "thank you" -- is about is neuropathy a
14 mechanism, or in this sort of taxonomy, would it be
15 a disease state? What would you say about that?
16 DR. RAJA: When I think of mechanisms, I
17 think a little bit more in terms of the
18 pathophysiology in terms of changes in the
19 transection process, changes in the amplification
20 of that transection process at multiple levels.
21 And things like the mediators, the inflammatory
22 component as part of that pathophysiological

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1 mechanisms, I don't know how I can separate these.
2 That's why there is, as you can see, an
3 expression there as to there's still some
4 uncertainty in terms of do all of these different
5 injuries, for example, like disc lesion causing
6 radiculopathy, is the mechanism there the same as a
7 zoster-causing DRG, sensory loss of neurons?
8 So there are some differences based on the
9 etiology in the mechanisms, and therefore it
10 depends on whether you're a lumper or a splitter
11 how you work on this taxonomy.
12 DR. TERMAN: Thank you.
13 DR. RAJA: Thank you.
14 DR. TERMAN: Thank you, Raj.
15 So those of you that came back from the
16 break should have found at your spot this piece of
17 microfiche --
18 (Laughter.)
19 DR. TERMAN: -- written by someone much
20 younger than me. But it will be useful for this
21 afternoon's discussion, I believe.
22 The next talk is going to be by

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1 Paul Desjardins from Tufts Dental School on acute
2 orofacial pain.
3 Presentation - Paul Desjardins
4 DR. DESJARDINS: Following Raj reminds me of
5 one other time in my career where I was in a
6 position that nobody wanted to be in, where you're
7 competing for attention with somebody who really
8 gives a spectacular talk.
9 A one-minute digression, I was invited to
10 speak to a group of pharmacologists and pharmacists
11 in Kansas City years ago. And we had
12 200 pharmacists, pharmacologists, sitting in a
13 room, not dissimilar from the set up here. And
14 across a paper-thin wall nobody had thought about
15 was 100-person a cappella choir that was going to
16 start singing at the same time as my presentation.
17 (Laughter.)
18 DR. DESJARDINS: So Raj, I thank you for not
19 bringing in the choir with you, but following you
20 is not much easier than following the a cappella
21 choir.
22 So let me tell you, two points of view.

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1 Number 1, I am not a diagnostic acute pain
2 clinician who sees patients on an everyday basis.
3 I operate in two different silos, and the first is
4 that I teach dentists, dental hygienists, nurses,
5 physicians about oral diagnosis and disorders.
6 I teach them about clinical pharmacology,
7 and I actually perform clinical studies. That's
8 what I have done for the last 40 years. And one of
9 the things that we'll think a little bit about
10 during this time is who are the other silos that
11 touch the type of categories that we're dealing
12 with, and certainly who are the other practitioners
13 who deal with orofacial pain, and how does that
14 change how we think about it?
15 So where are we now? In acute orofacial
16 pain, by and large, the categorization of those
17 pains across the board are by anatomical structure.
18 They're associated generally with a known
19 diagnosis.
20 Most of those disorders are not treated on
21 pain services. They're treated in primary
22 practitioners' offices; they're treated in dental

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1 offices; they're treated in acute pain clinic. And
2 one of the big differentiators that I can see, as
3 residents present cases to me, is that we think
4 about that pain as either primary or referred.
5 The challenge with a box, which is very
6 small -- and this is the box -- is that there are a
7 lot of players in that box, both anatomically,
8 neurologically, and in terms of what type of
9 practices they have.
10 So interestingly, the same presenting
11 symptom on any given patient can be referred to as
12 dental pain, toothache pain, odontalgia, or
13 pulpitis, depending on the level of specialty and
14 sort of which discipline sees it first and where
15 the referrals are coming from.
16 If we have no idea what the diagnosis, then
17 we resort to Latin or Greek, and we give it names
18 like osteitis dolorosa sicca. What the hell is
19 that? That's my oral surgery colleagues
20 who -- that's their name -- that's the \$800-name
21 for dry socket, which can be treated pretty easily.
22 So one of the challenges that we have is

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1 that orofacial pain is a great imitator. And
2 interestingly, some of the diagnostic features of
3 those disorders, pain is only one piece of what
4 they see and what they are treating.
5 So besides the overlapping specialties that
6 see these disorders, why even get involved in this?
7 Why even think about it? And the hope -- and
8 again, I'm expressing my hope in them, hope of
9 other colleagues with whom I've discussed
10 this -- is that a more specific taxonomy might lead
11 to more accurate diagnosis. It might provide more
12 effective treatments because a bucket that's got
13 10 different disorders that are trying to be
14 treated with one therapy is likely going to be
15 unsuccessful in a number.
16 The other piece of this is that efficacy
17 conclusions that need to be made by groups, whether
18 they are pharmacologists, whether they are pain
19 docs, whether they're medical regulators at
20 regulatory agencies, it's very difficult to
21 generalize across disorders right now.
22 We've not made a lot of progress in terms of

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1 how much can we generalize from proof of concept
2 studies. A major challenge we've had is drugs have
3 been developed in those countries; how many studies
4 are enough? Is two in each bucket, replicate
5 studies in each bucket enough? Is one peripheral
6 neuropathy, is one central neuropathy enough to get
7 a broad indication for all neuropathic pain?
8 So those are ongoing challenges, and having
9 a taxonomy that helps us think more rigorously, I
10 feel, will help us around this problem.
11 The other thing which I had mentioned
12 yesterday as well is from the point of an
13 individual practitioner, knowing who are the
14 outliers, who are the nonresponders, and why are
15 they the nonresponders, and maybe they didn't get
16 categorized appropriately. But who is not going to
17 follow that predictable trajectory is certainly one
18 of the outcomes that I hope happens.
19 Now, who plays in the area? Who works with
20 all orofacial pain? Well, depending on which
21 resident is in the emergency room on any given
22 night, you might see an ophthalmologist; you might

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1 see an otolaryngologist. There are three or four
2 different dental specialties that work in the
3 emergency room when somebody comes in with acute
4 facial pain.
5 Plastic surgeons, facial pain clinics,
6 certainly, the surgeons, if there's a fracture
7 involved anywhere in the face between the
8 ophthalmologist, the ENT, and the oral surgeons,
9 they're either going to flip a coin or they've got
10 an allocation system as to who's going to follow up
11 with those patients.
12 So the other issue, I think, that it brings
13 up is how do we disseminate the discussion; how do
14 we make our conversations inclusive enough so that
15 those other disciplines participate from the start
16 and they buy into a change in taxonomy?
17 So a couple of thoughts as I've listened to
18 some of the discussions as well, that acute pain is
19 only of the symptoms or many disorders that show
20 you acute pain and can we come up with common
21 diagnostic features across the board.
22 A real challenge, Bob, was trying to lump

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1 these many different disorders that have
2 overlapping systems to try to think about how to go
3 through them systematically.
4 I believe the current drivers that I see
5 with my residents and the attendants that I work
6 with is that their discussion of acute pain
7 diagnosis is pretty much limited to history of
8 present illness and how is it presented.
9 They will discuss the primary symptom in
10 terms of its anatomic region. Certainly, for that
11 particular presentation, they give us a pretty
12 detailed temporal pattern. They know how to probe
13 with appropriate questions or instruments.
14 Certainly, a level of severity or intensity,
15 which we've sort of poo-pooed in the past, we've
16 got too much data in that area. At least, we
17 collect it from the right places now; it's not just
18 in clinical trials to look at 4-point categorical
19 scales.
20 Between the attenuating factors and the
21 other presenting signs and symptoms, my general
22 sense is that coming into the room, that first set

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1 of strategies that we discussed yesterday seemed to
2 fit reasonably well. But the hard work is going to
3 be going through disorder by disorder or coming up
4 with at least what we think are the lead diseases
5 to be studied.
6 So the next two or three slides are simply a
7 list of disorders of various organ systems, which
8 show up in this bucket, which present with pain,
9 and what are some of the other major symptoms that
10 diagnosticians, that the treating docs are looking
11 for.
12 Well, certainly, in the eye, corneal
13 abrasions, uveitis, scleritis, not unusual.
14 Interestingly, conjunctivitis, one of the important
15 differentiators when they first come is, do they
16 have evidence of infection? Is there a pink eye or
17 not? It's as simple as that. What other types of
18 symptoms are there?
19 But one of the critical pieces in working
20 with our residents as well is what are the other
21 types of eye pain that can show up that really
22 portend the really serious prognosis going forward,

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1 whether it's an ocular motor palsy or some other
2 cranial nerve disorder that has accompanying signs
3 and symptoms, and where are those really red flags
4 and the warning signs that we see.
5 Certainly, in the ear, they're presenting
6 otalgia as a common presenting symptom. We
7 understand that this represents about 35 percent of
8 pediatric presenting chief complaints in
9 pediatricians' offices. There can be external
10 pain, lacerations, burn, frostbite, sunburn, all of
11 the things that fall into the other buckets that we
12 talked about in terms of the initiating factor.
13 Then a critical piece in almost everything
14 that I could see that occurs in the ear, nose,
15 throat, or contiguous structures, is there an
16 infection in that area? Because all of a sudden,
17 if it's infectious in nature, that is a great big
18 bucket of disorders that show up as acute pain.
19 Then, what are the other comorbidities that
20 go on? And interestingly enough, virtually any of
21 the cranial nerves that innervate this area can
22 have cranial nerve pathology that's associated with

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1 it.
2 The last quote on this slide was one made by
3 my oral surgery colleague who teaches diagnosis in
4 the oral surgery, "God bless those other signs."
5 They allow you to start separating out what you're
6 dealing with because the patient who shows up with
7 a maxillary toothache, allegedly, may very well
8 have a middle ear infection; they may have a sinus
9 infection. So the differential diagnosis is pretty
10 wide until you actually look in the ear and see
11 what's going on.
12 In the nose, interestingly, rhinosinusitis,
13 not infrequent. It sort of crosses over, Steven,
14 to your area. How often the kids develop an upper
15 respiratory tract infection? If you got a two or
16 three-year-old son or grandson, chances are this
17 year, they're going to have six infections at that
18 age.
19 Again, another common presenting symptom,
20 but they don't show up in pain clinics. They show
21 up in pediatricians' office, they show up emergency
22 rooms, and they show up in ENT offices.

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1 One of the interesting areas that
2 pharyngitis, again, common-presenting symptom, one
3 of the things that patients self-treat very
4 frequently, one of the few disorders in this area
5 that actually has a pain model associated with it.
6 And that's where Bernie has worked, in this area
7 for probably the last 10 or 15 years, that we
8 actually have data on how severe is it.
9 It's not only how severe is it, but some of
10 the characteristics he's put into the pain
11 evaluation system is how much does this impair your
12 ability to swallow. That discussion of function
13 has been incorporated in, a large part, the
14 assessment systems that Bernie set up.
15 I'm going to not discuss discussions of
16 trauma because they pretty much fall into the
17 discussions of post-operative -- they are the same
18 issues in terms of post-operative pain and how
19 that's managed.
20 The biggest challenge for many of those
21 patients is that facial trauma usually is only one
22 part of many of the other traumas that they have.

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1 My first year working in Newark, New Jersey,
2 we had 365 jaw fractures on our service over a
3 period of a year. I thought we had a busy service
4 in Rochester when we had 30 in a year. So
5 350 -- last year, they had 45 in Newark, New
6 Jersey.
7 Why do you think that is? The violence
8 dropped? They don't survive their other injuries.
9 If you've got five bullet holes in you, a jaw
10 fracture is the least of your problems. There are
11 some reasons a few of us sort of take gun violence
12 seriously.
13 Disorders that present in the mouth, and
14 teeth, and jaws have a pretty wide list of issues.
15 There is pulpitis, which interestingly enough, the
16 question I ask is, does that really fit into the
17 acute visceral pain type of bucket? Because it is
18 a compression type of injury in a very confined
19 space, and it can be -- among all the dental pains
20 I've seen, that's the most excruciating, have
21 people sort of on their knees, and all of a sudden,
22 you give them a local anesthetic, it's like you've

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1 hit them with a magical serum.
2 Periodontal abscesses, caries, impacted
3 teeth, and pericoronitis, just a little touch, and
4 I'll bring one of my other pet biases in. Oral
5 surgery, post-oral surgery pain of the third molar,
6 we've learned more about acute post-operative pain
7 and how to standardize it than any other model. We
8 took the learning from what happened when you
9 extract patients' third molars, and we have
10 extended that to post-operative pain. And
11 bunionectomy pain model was spawned by dental
12 impaction pain model.
13 Acute TMJ pain is interesting because now
14 we're dealing with a musculoskeletal problem. And
15 we're dealing with patients that may have
16 excruciating pain for just a short period of time,
17 but it's amazing how muscle exercises and cold and
18 resolve those types of issues.
19 Atypical odontalgia are the type of things
20 from chronic pain clinics that I have seen and
21 would not believe, where patients will have a
22 trigger point which is a millimeter or two wide,

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1 where patients are having severe pain. You can put
2 a local anesthetic on it, and their pain resolves,
3 immediately, immediately.
4 What the hell is going on there? A very
5 focal neuropathic type of disorder? I don't know.
6 But there's somebody that has to treat them, and
7 they don't come into the pain clinics most of the
8 time.
9 Certainly, one of the concerns -- and we see
10 them frequently -- are patients who have myocardial
11 ischemia that show up as jaw pain or tooth pain.
12 So there certainly are other comorbidities that sit
13 out there.
14 I think my next couple of slides on the
15 dimensions are a bit like -- sort of a repetition
16 of what's been discussed by the other speakers, so
17 I'm just going to go through them very quickly,
18 that they generally seem to fit. Those dimensions
19 fit reasonably well. But the hard work, I think,
20 is going to have to be done by groups that we put
21 together, which are going to involve individuals
22 that treat those disorders and who understand the

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1 underlying pathology and similar diagnostic
2 criteria.
3 Dimensions 2 and 3, one of the critical
4 areas in the facial pain literature has to do with,
5 is this an infectious etiology; is it an
6 inflammatory etiology; or is it referred pain from
7 adjacent structures?
8 So how best to put that into our taxonomy, I
9 think, was part of what we were wrestling with
10 yesterday about where to put them. And it took me
11 a day to digest the discussion of yesterday
12 afternoon because it wasn't easy for me to think
13 about to think about 15 disorders and how to bucket
14 them easily.
15 The psychological and emotional component,
16 perhaps in many of these, they're sort of
17 short-duration disorders that I've discussed with
18 you, medically-managed by and large. And while
19 there can be emotional impact, it's frequently not
20 critical to the initial diagnosis that I've seen.
21 But how do I know that there are the
22 psychological impacts? We've had people we've

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1 brought to the university to talk about
2 acupuncture. And all of a sudden, I've had a room
3 full of docs, a room full of nurses sitting there
4 and they show craniotomies being done with
5 acupuncture. And all the docs are like, hmm,
6 that's interesting. Really? You can do that?
7 Then we'll show a delivery, a cesarean
8 section with acupuncture anesthesia. That's
9 interesting. Then they say, now, we're going to
10 show you a tooth extraction? The whole audience
11 goes, "Oh, my God. How can you show that?" Well,
12 you think maybe they're carrying a little bit of
13 their previous traumas into the room?
14 The functional consequences, I think, are a
15 rich area of research, which has by and large been
16 ignored. Interestingly, a few models have actually
17 included a few of the systematic evaluations in
18 acute pain. So a throat pain, dental impaction
19 pain, they've collected information on function.
20 But how were they considered by regulators today?
21 Secondary measures, we're not primarily
22 interested in that. We're not going to approve

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1 your drug based on whether you feel better or walk
2 better. It's do you eliminate the pain?
3 So that's an ongoing conversation. And why
4 do you think pain intensity sits in those clinical
5 trials as the primary measures of efficacy?
6 Because it's a negotiation with regulatory agencies
7 as to which outcome is most important.
8 The conversation, which has existed for at
9 least the last 32 years, that I'm aware of, is pain
10 and pain intensity has been reproducible enough,
11 and we know how other drugs -- it comes down to
12 creating a level playing field for new drug
13 developers or device developers. But unless this
14 group can also convince and wrap their arms around
15 the regulators and the type of data they're asking
16 for, we're going to have more of the same when we
17 get together five years from now.
18 One of the key questions -- and again, this
19 has been an ongoing question. I don't know how
20 much this effort is going to be able to contribute
21 to this. But can we, in different categories, come
22 up with one or two generalizable models that could

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1 be developed for a given bucket?
2 I can't tell you how many times I've spoken
3 to groups of clinicians. They say, what do you
4 mean there's really not many clinical trials
5 dealing with this particular type of orofacial
6 pain, whether it's TMD, whether it's -- I don't
7 know -- dry mouth or burning mouth, how could there
8 not be clinical trials in that area? Because it's
9 so difficult. It's hard to find enough patients
10 and agree on the measures and do it.
11 So my hope is that, over time, that the
12 learning from other models from this group that's
13 talking about the taxonomy will actually help us in
14 generalizing to other similar conditions. And I
15 raise the question before, is dental pain -- is
16 pulpitis, inflammation of a dental pulp, what are
17 the common characteristics between that and other
18 visceral pains? Because, quite honestly, we don't
19 see into the tooth any better than you see into the
20 belly, and probably less so.
21 What are some of the things that I think
22 would help in improving acute pain study designs?

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1 Baseline pain determinants, the natural course of
2 the history, we've talked about the trajectory,
3 what's normal?
4 We turn to Henrik to sort of talk to us
5 about what are the type of interventions that help,
6 but what is the standard by which we compare the
7 future interventions?
8 What about those surgical characteristics?
9 It's interesting. I have spent hours in talks
10 debunking myths; oh, dental pain, that's just the
11 pain of inflammation. So wait a minute. We remove
12 bone on every single case. We do a skin incision
13 in every single case. In order to get those tooth
14 fragments out, we cause a crushing injury to the
15 periodontal ligament, and then we leave the hole in
16 the jaw open.
17 So you tell me, is that soft tissue pain?
18 Is that bone pain? Is that neuropathic pain?
19 Yeah, we cause nerve injuries; 2 or 3 percent of
20 patients have paresthesias that happen after
21 surgery. But fortunately, they resolve in the next
22 month. What about the 1 percent of those cases

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1 that go on to have permanent paresthesias and
2 post-operative pain?
3 Among the other issues, it's interesting
4 that I talk to many anesthesiologists, and they
5 talk about multimodal forms of anesthesia. How do
6 pharmacologists look at this and how do regulators
7 look at it? Concomitant therapy. They confuse the
8 decision about whether this drug works. Yet, when
9 I speak to my oral surgery colleagues, what do we
10 know beyond a shadow of a doubt?
11 In third-molar surgery, if you give somebody
12 a long-acting local anesthetic block with
13 carbocaine and you can keep it numb for 5 to
14 8 hours, and you give them a pre-operative
15 corticosteroid, their pain course is smooth,
16 smooth. I mean, those patients are absolutely
17 comfortable. You don't get calls on the weekend
18 and at night. But if you go back and look for the
19 data, you've really spent a lot of time finding
20 studies that really document how effective are
21 they. So we resort to meta-analyses that say,
22 yeah, it seems to work.

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1 Ongoing issues in terms of drug -- so where
2 would you like to be? Where would I like to be?
3 Interestingly, we had several opportunities where
4 we studied essentially the same drugs with
5 identical outcomes, looking at pain intensity over
6 8 hours, where we could generate an effect size.
7 Now, for those of you who don't do
8 biostatistics frequently, the effect size was just
9 the size of the -- the mean effect of the drug,
10 subtract out the placebo. So that gives you the
11 signal. And you divide it by the pool standard
12 deviation, sort of a signal-to-noise ratio.
13 Interestingly, we hypothesized early on in
14 four studies that we did, bunionectomy pain for the
15 same dose of drug with ibuprofen, used in both
16 models, that you'd get about 65 percent of the bang
17 out of the buck when you did foot surgery and gave
18 it to them post-operatively.
19 Well, lo and behold, when we went back and
20 looked at other nonsteroidal drugs and Cox 2
21 inhibitors, and you looked at the magnitude of
22 effect that were in reported studies after

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1 bunionectomy surgery, after orthopedic surgery
2 where they knee and hip replacements, well, lo and
3 behold, that same effect size is what you saw
4 across other pain models.
5 Wouldn't it be nice to be able to do the
6 same thing with other acute pain models with what
7 you're dealing now?
8 So last thought, and then I realize I'm
9 standing between you and one speaker and lunch, I
10 ask myself, as we go through this multiple times,
11 are we just a hostage to our own specialties and
12 disciplines?
13 How are we going to diffuse the information
14 across the boxes that deal with this area? How do
15 we best help tomorrow's clinicians and
16 investigators understand the problem?
17 I honestly think that answers that have as
18 much detail and insight as some of the
19 presentations I heard today are going to lead to
20 that. Can it give us more accurate, more
21 simple -- I don't know about simple, how likely.
22 More predictable recovery is the hope?

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1 The last slide reminds me that although
2 we've been talking about orofacial pain for the
3 last 20 minutes, the face is an area that gives and
4 receives so much pleasure.
5 Okay. Questions?
6 (Applause.)
7 DR. DESJARDINS: Good. Any questions? No?
8 Raj?
9 DR. RAJA: Quick question. Should pain
10 from -- ophthalmological pain, would that come
11 under orofacial? It's still part of the face.
12 DR. DESJARDINS: Yeah. I think as we think
13 about it, my sense is if that pain is mediated
14 through the fifth cranial nerve, yeah, I think
15 about it as orofacial pain.
16 Those individuals are not usually sitting in
17 most of our meetings, but absolutely, eye, ear,
18 nose, throat, mouth, I think they're commonly
19 related and they have commonly referred pain
20 between them.
21 Fortunately, for many of the ones that I
22 show, they're diagnostically pretty easy to pick up

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1 as where the problem is. But I think eye pain is
2 another one that sort of fits into this bucket very
3 easily.
4 Okay? Good. Thank you.
5 DR. TERMAN: So the last speaker will be
6 Steve Weisman from the Medical College of
7 Wisconsin. Talk about a far ranging topic he was
8 assigned;, pediatric, geriatric and special
9 populations on acute pain.
10 Presentation – Steven Weisman
11 DR. WEISMAN: Twenty minutes, huh?
12 Actually, I'll get done ever more quickly. But I'd
13 like to start with something special.
14 (Music plays.)
15 DR. WEISMAN: Who is that?
16 MALE SPEAKER: The 5th Dimension.
17 DR. WEISMAN: Right, the 5th Dimension.
18 (Laughter.)
19 DR. WEISMAN: I can't get that out of my
20 head ever since we started talking about this.
21 (Laughter.)
22 DR. WEISMAN: I looked. There isn't a 1st

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1 to a 4th dimension in the music world, but there is
2 a 5th Dimension. Let me get my technology
3 organized.
4 MALE SPEAKER: Just start singing, Steve.
5 DR. WEISMAN: No, no, no. We'll go to lunch
6 if I start singing.
7 I took a different approach to this, a very
8 simple one because the topic is much too broad.
9 And I thought that, really, what our main purpose
10 these two days is in fact to wax philosophical in
11 terms of coming up with our overriding schema.
12 So instead of focusing in on, for example,
13 the unique pain in a baby having a thoracotomy for
14 a TEF repair, or the uniqueness of a newborn
15 getting repetitive heel sticks and what that does,
16 I just want us to think in more generalities about
17 things.
18 Since Greg strong-armed me to be the head of
19 the Ethics Committee on APS, these are my
20 disclosures. God forbid we ever give a talk
21 without it. And just to remind you, many of you
22 didn't.

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1 What I'd like to do is first start out and
2 get us to think about what are the special
3 populations that we ought to be thinking about, and
4 what are some of the differences that members of
5 these populations bring to the table when we're
6 thinking about creating a taxonomy? And then I did
7 try to frame it in my current version of what the
8 fifth dimension, the 5 dimensions ought to be.
9 So certainly, neonates and infants are a
10 population unto themselves. They are
11 physiologically very different. Their nervous
12 system is different. How they respond to pain is
13 different.
14 Children and adolescents become more
15 mainstream, if you will. Seven to eight percent of
16 the patients taken care of in my hospital or
17 Suresh's hospital are developmentally delayed and
18 by definition have had normal nervous systems. And
19 where do they fit in the acute pain spectrum?
20 Geriatric patients clearly begin the
21 decline, and their nervous systems are very
22 different. How they respond to acute pain is often

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1 very different. Many of them actually, I might
2 argue, are maybe somewhat protected in a different
3 way than we use to think infants and neonates were
4 protected from acute pain.
5 I almost never give a talk about acute pain
6 without acknowledging the trauma that I caused in
7 babies and children. You know, it's sort of like
8 revealing that you are a Nazi, which is that when I
9 learned to put my first chest tube into a baby for
10 a pneumothorax in the newborn period, we did it
11 without anything except the trocar. And that was
12 standard practice, really, in pediatrics until the
13 '80s and '90s; really unbelievable stuff.
14 I tell this story, too, actually. I was a
15 second-year pediatric resident, and the revered
16 Dr. C. Everett Koop was dropping off a baby in the
17 newborn intensive care unit at Children's Hospital
18 of Philadelphia, to the erstwhile second-year
19 pediatric resident.
20 I looked at him and I said, "So Dr. Koop, by
21 the way, what kind of anesthesia do these babies
22 get?" And he looked at me and he said,

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1 "Pancuronium, oxygen, and a darn good surgeon." and
2 he turned around and he walked away. And he was a
3 very scary guy.
4 (Laughter.)
5 DR. WEISMAN: And I turned to his fellow and
6 I said, you know, "Seriously, Victor? Is he
7 shitting me?" And he said, "No."
8 That was like my first eye bubble, my first
9 like, Oh, my God. Seriously? The baby had a
10 lateral thoracotomy and only was paralyzed. And at
11 any rate, there, I've gotten my guilt off the
12 table.
13 We shouldn't leave out pregnancy and
14 breastfeeding. There are issues related to how the
15 pregnant woman or the becoming ex-pregnant woman
16 deals with acute pain issues that are worth
17 thinking about when we develop a taxonomy.
18 I don't know that -- in terms of studies,
19 there are lots of pharmacologic issues related to
20 studying potentially breastfeeding women, which are
21 very challenging. But I don't know that that
22 really needs to be part of a taxonomy.

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1 Critically-ill patients, I think, need to be
2 thought about as a group. And as we develop a
3 taxonomy, how do we define the acute pain disorders
4 that we can apply to these patients, who much like
5 the smallest of our patients or some of our oldest
6 patients are unable to do self-report?
7 So do we need a very strict, rigid taxonomy
8 that defines a lot of the acute pain disorders that
9 remove self-report from the taxonomy?
10 Substance-abusing patients in the acute pain
11 world are a challenge; we all know that. We heard
12 a little bit about -- well, indirectly -- about the
13 war-injured patients and the meaning of their
14 injuries and how they manage acute pain.
15 It's certainly staid by now and old, but I
16 used to use the example of Forrest Gump in the pain
17 clinic. Do people remember what happened to
18 Forrest Gump in the movie that would be important
19 for acute pain?
20 MALE SPEAKER: At which point?
21 DR. WEISMAN: Pardon?
22 MALE SPEAKER: At which point?

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1 DR. WEISMAN: Well, when he was a young
2 adult.
3 MALE SPEAKER: He got shot.
4 DR. WEISMAN: He got shot. And does
5 everyone remember what he did when he got shot? He
6 rescued Bubba. He carried like a dude bigger than
7 me to safety. Then when he got to safety, one of
8 my favorite lines in the movie was, "Oh, my
9 goodness. I've been shot in the but-tocks."
10 (Laughter.)
11 DR. WEISMAN: And he, as a warrior, as a
12 soldier, managed his acute pain very differently.
13 We know this, that a lot of the immediate acute
14 pain responses of the war vets are very different
15 than a lot of the other patients that we deal with.
16 Do we need to consider that somehow in our
17 taxonomy?
18 Then last, we have an obligation, I think,
19 for the other linguistic barrier, in addition to
20 development or decline in development, our
21 immigrants and non-native speaking patients who may
22 not necessarily be able to communicate with us

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1 about the taxonomy of their pain problem and how do
2 we account for that when we're thinking about
3 developing this taxonomy.
4 So these were the proposed dimensions last
5 evening, so I just ran off of them in terms of some
6 my other thoughts. As I've already said, many of
7 the populations that I just went over cannot rely
8 on -- we cannot rely on self-report to define their
9 pain problem.
10 So should we think about a taxonomy that
11 really is more event or etiology-defined as the
12 first level of looking at the taxonomy?
13 Then, there's the challenge of -- we could
14 say things about needle pain. So as another
15 example, if you look at the burden of cancer
16 treatment in children -- and this is very old
17 psychological stuff, if you will, that was studied
18 in the '70s and '80s. And you query young
19 survivors of cancer about the burden of cancer,
20 what they will tell you is the single most
21 burdensome thing about their treatment were all the
22 needles they got, whereas many of us in the room

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1 will accept needle puncture and give it a very low
2 priority in terms of the acute trauma, if you will,
3 that it's causing. And that's an important
4 distinction.
5 When you look at needle trauma in babies,
6 for example, there are good data that show that
7 those preemies who get repetitive heel sticks
8 develop a neuropathic pain syndrome with
9 hyperalgesia and allodynia, if you will, in their
10 foot in a wide distribution from getting repetitive
11 blood draws done as part of their care.
12 So the significance of some of the simplest
13 procedures that we think about with procedure pain
14 are very different. When we think about spine
15 surgery in our patient population, being the
16 pediatric population, what, again, Suresh and I do
17 is we don't do single disc fusions. We take care
18 of patients who have spine fusions from T2 to L4,
19 and have an incision that's literally that big with
20 incredible degrees of bone destruction and an
21 enormous amount of muscle and fascial tissue
22 damage. Is that different from a single level

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1 spine fusion?
2 In a patient who comes in to the operating
3 room without any pain before, as opposed to the
4 single-level fusion patient who's probably had
5 significant debilitating radicular pain for a long
6 period of time, they're very different patients;
7 they really are. And their acute post-operative
8 recovery is remarkably different, and how do we
9 think about that when we develop our taxonomy?
10 If you think about -- at least, this is how
11 I was starting to think about things. As we look,
12 if we focus in on Dimension 1, we could develop a
13 taxonomy in some form like this.
14 I mean I'm digressing a little bit from the
15 special populations, but one in which we look at
16 acute illnesses, we look at trauma, we look at
17 surgery, we look at procedures, diseases. Although
18 as nice as Knox's talk was about cancer, when I
19 think about it, I don't know what cancer pain is.
20 I mean cancer pain is trauma to a nerve.
21 Cancer pain maybe is treatment-related. In fact,
22 again, if you look at children, the real burden

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1 besides their needle pain is treatment-related pain
2 that comes from mucositis, or neuropathy, or the
3 local destructive effects of radiation, et cetera.
4 So really, I think we are pandering, if you
5 will, the pain community by repetitively talking
6 about specifically cancer pain as if it's something
7 different.
8 Then we've avoided ischemic pain, but I
9 still think that that's an important topic. When I
10 think about sickle cell pain, most of it is
11 ischemic pain from small blood vessels being
12 blocked by the abnormal cells leading to local
13 ischemic reactivity in that area, much the same way
14 sometimes compartment syndromes are, much the same
15 way maybe that some cardiac pain is, and do we need
16 to think about that as well?
17 That was, at least, my first shot at coming
18 up with one way to maybe to start to look at the
19 taxonomy and then put disease categories within
20 each of those potential groups.
21 So again, pain assessment, which is always
22 an integral part, if you will, of defining acute

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1 pain or chronic pain is a challenge in almost all
2 these populations. And fortunately, with our
3 younger patients especially, we have good validated
4 tools that we can use and apply. So I think this
5 can be incorporated into a taxonomy, if we think
6 it's important.
7 But the issue of perceptions and then
8 communication of that is impossible. You cannot
9 get, with any reliability, a 6-, 7-, 8-, 9-,
10 10-year-old to distinguish some of the features of
11 neuropathic pain when you're interviewing them in
12 the course of trying to define what their pain
13 cause might be.
14 The extremes of age, again, have individual
15 responses to pain that are different, and I don't
16 know how we're going to take that into account.
17 And finally, the cultural differences, much like
18 the soldier's response to an acute injury, can be
19 very different than a civilian who sustains a
20 similar injury. There are a lot of cultural
21 implications that we really haven't touched on at
22 all but I think are worth thinking about.

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1 In terms of Dimension 2, host and risk
2 factors, some of these patients may have different
3 responses. You don't see the same cardiovascular,
4 for example, variability in neonates and preemies
5 with significant acute pain stimuli. You just
6 don't see it, so you can't rely on that.
7 We certainly have to factor in all
8 comorbidities in the elderly, prior pain experience
9 and then the multitude of underlying diseases. And
10 I don't know how in our taxonomy, we'll actually
11 incorporate the neuropsychobiology of this stuff.
12 We've spent, actually, a lot of time talking
13 about that, and I think it's important to build it
14 into the schema that we come up with because I do
15 believe that it's just as important in acute pain
16 as it is in chronic pain.
17 Pain quality, it's interesting that when a
18 different group of folks just like those assembled
19 today met to go through the original pediatric
20 IMMPACT meeting, we didn't consider pain quality as
21 one of the domains to be measured because of the
22 challenge of the unreliability of coming up with

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1 any meaningful data in that category.
2 Again, I've already alluded to in these
3 special populations, language, age, being in the
4 ICU, being very young is going to prevent us from
5 categorizing and characterizing a lot of the
6 disorders that we'd like to.
7 Environmental context, again, I touched on
8 that. The perception of acute pain in labor is
9 very different when you produce a young healthy
10 infant or your expectation is to produce a young
11 healthy infant. It's very different than other
12 types of acute pelvic pain.
13 Even the meaning of pain in the
14 immigrant/refugee or even war scenario, an injury
15 gets you away from hell and what's the significance
16 and the meaning of that, I think that's going to be
17 very hard to factor in.
18 Pathophysiology may be largely similar
19 across all these populations. But having said
20 that, we know the physiological impact of some
21 acute pain, diseases or causes, are likely very
22 different in these different populations.

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1 We know from the original work of
2 Sunny Anand and Paul Hickey that poorly managed
3 pain in babies undergoing cardiovascular surgery
4 doesn't just lead to a poor Picker rating when they
5 leave the hospital; it leads to death. And the
6 morbidity in babies undergoing heart surgery,
7 who back in the dark Dark Ages were managed with
8 non-opioid-based analgesic regimens, resulted in
9 higher rates of mortality in the hospital.

10 So it isn't just a quality issue. And we
11 know the implication from lots of work done on
12 elderly with hip fractures that a good pain
13 management and addressing that makes a really big
14 difference in outcomes, really big difference.

15 In terms of function, this is also going to
16 be another challenge because a lot of the
17 populations I mentioned begin at various levels of
18 functionality, ranging from the very elderly, who
19 may be debilitated by some of their comorbidities,
20 to the common patients, again, I might take care of
21 who have spastic quadriplegia from a major
22 devastating brain injury.

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1 When you look at simple things, if you're
2 thinking even in the acute arena of potential
3 outcome measures, babies have very different sleep
4 cycles. The elderly have very different sleep
5 cycles than the rest of the population.

6 Remember that -- this is always hard -- 22
7 percent of the American population is under the age
8 of 18; 17 percent of the American population is
9 somewhere between 65, 75, and older. So that's
10 almost half of the American population even though
11 there's just a small cohort of us here representing
12 them. Forty percent of the folks we need to work
13 with are in these special population groups, so
14 they're an insignificant group to think about.

15 When I thought about the
16 cognitively-different populations, again,
17 Dimension 1 is going to be very difficult to define
18 if we rely as it traditionally was done in chronic
19 pain and if we move forward with this in terms of
20 descriptors et cetera. The epidemiology and
21 obviously specific tissue injury element should be
22 pretty easy to characterize.

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1 Dimension 3 may be near impossible in terms
2 of we never can get a qualitative assessment from a
3 lot of these patients, and we almost never get
4 temporal features at all. And if we do get them,
5 secondarily they're from family caregivers who are
6 supposing that the pain problem started a certain
7 time ago.

8 The other dimensions I think are relatively
9 similar. And again, functionality will be a
10 difficult domain to define.

11 I think that we shouldn't let this get in
12 the way of us defining this taxonomy. But as long
13 as we can do our best as we think through it to pay
14 attention to these factors, I think we'll end up
15 with a useful taxonomy that we can apply to acute
16 pain. Thanks.

17 (Applause.)

18 FEMALE SPEAKER: Thanks for taking on this
19 huge group. I was just wondering when we were
20 talking about the different dimensions, one of them
21 was host and sort of risk and protective factors.
22 I wonder if a certain slice of this sort of special

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1 population that you described could be absorbed
2 into that.

3 So for example, like an adolescent having
4 surgery may not be quite as different from an adult
5 having surgery, so they could be absorbed into the
6 post-surgical acute pain with the caveat that their
7 host -- that they have certain risk factors or
8 social characteristics, so that your slice of the
9 pie is not as big; and similarly on the older age,
10 if you know what I'm saying.

11 DR. WEISMAN: No, I do. I think the
12 overriding goal, I still see us coming up with that
13 structure. Then, we can create whatever caveats
14 are essential for some of these special
15 populations, for example. I think that's really
16 the only way to approach this.

17 Okay, lunch, I guess.

18 DR. TERMAN: All right. Well, hopefully,
19 some discussion will continue over lunch, and we'll
20 see you back here at 1:30.

21 (Whereupon, at 12:27 p.m., a lunch recess
22 was taken.)

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1 AFTERNOON SESSION
2 (1:33 p.m.)
3 DR. DWORKIN: Mike, and Patrick, and Steve,
4 please come up to the podium.
5 (Pause.)
6 DR. DWORKIN: We're just going to wait one
7 more second for Pat.
8 (Pause.)
9 DR. DWORKIN: So before we start, everyone
10 should have in front of them -- because it's what
11 we're going to be discussing this afternoon -- this
12 one-page, very small font flowchart prepared by
13 Mike.
14 If you don't have that, try and find because
15 it's really critical for the next 15 minutes to
16 3 hours, depending on how long it takes us.
17 (Laughter.)
18 DR. DWORKIN: We're waiting for Pat because
19 he's obviously a critical person here. If he
20 doesn't show up in 30 seconds, we'll start without
21 him.
22 DR. COHEN: Would this be a time to ask a

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1 question?
2 DR. DWORKIN: Sure. Go ahead, Bob.
3 Pat just arrived so --
4 DR. COHEN: Can I ask a question --
5 DR. DWORKIN: Yes, you can ask the question
6 you were about to ask now or later?
7 Now that everybody is here, I promise that
8 we will end by no later than 4 o'clock, but we can
9 end sooner. It depends whether we achieve what we
10 need to achieve in this final session.
11 The way, I think those who've been involved
12 in setting up this meeting think about this final
13 session, in a kind of very straightforward, simple-
14 minded way, is making sure that Pat and Mike have
15 the raw material that they need to draft the
16 manuscript that will be a kind of acute pain
17 version of the manuscript that you've all carefully
18 read, the lead author of which was Roger for the
19 chronic pain.
20 So really, our criterion for success this
21 afternoon is have we agreed on -- consensus -- on
22 the raw material that Patrick and Michael used to

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1 draft the manuscript.
2 So that's the objective for the rest of this
3 afternoon. You're all going to be receiving that
4 manuscript. Some of you know this from other
5 meetings that we've had. You'll be receiving a
6 draft of that manuscript. They'll be comments on
7 it, revisions, and it doesn't get submitted for
8 publication until everybody thinks it looks great.
9 Being author on it is optional.
10 If you decide you don't want to be an
11 author, for some reason, on the manuscript, that's
12 entirely up to you. But everyone who's at this
13 meeting is offered authorship.
14 Steve wanted to lead with some opening
15 comments, and then we'll kind of throw the meeting
16 open to all of you to discuss that flowchart that
17 you hopefully have in front of you and really a
18 discussion of, as I view it, does the flowchart in
19 front of you look like essentially the scaffolding
20 of a reasonable manuscript that we would all
21 co-author and submit for publication in Journal of
22 Pain and Pain Medicine.

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1 So Steve, why don't you take it away?
2 Discussion and Approaches
3 DR. BRUEHL: Thanks, Bob.
4 All right. What I wanted to do is to talk
5 about what we did yesterday and show some
6 transformation that had happened, which hopefully
7 will be clear that we haven't really changed
8 anything at all.
9 Then, we're finished with that, I want to
10 bring up the AAAPT chronic pain criteria and just
11 kind of show you what similarities and differences
12 there are.
13 So first thing I'm going to do -- so what I
14 took was yesterday being kind of settled on this
15 model that included the following elements: risk
16 factors, event, host, environment, pathophysiology
17 and impact. That was from the epidemiological
18 model. That was what we had in there. We used
19 that to organize some of the specific things that
20 were brought up before. All I've done is collapsed
21 categories and renamed them, but the essence of the
22 construct is the same.

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1 So here, in our list of things we wanted to
2 make sure were covered included event -- which I
3 will check off as we go through this. We got the
4 event done; degree and extent of tissue damage,
5 that's here; organs, tissues and symptoms. So that
6 was considered to be very important. So that's
7 there. That's here.
8 Now, we had temporal trajectory and that is
9 now under this Dimension 2, whatever we call it.
10 But you got temporal pattern, typical trajectory.
11 So we've got both those pieces of information
12 there.
13 MALE SPEAKER: Can I ask a
14 question? [Inaudible - off mic].
15 DR. BRUEHL: Yes.
16 MALE SPEAKER: You know, I'm looking on this
17 as you're going, so --
18 DR. BRUEHL: I'm sorry that -- the small
19 thing -- there's a handout. Everything on here is
20 in the box.
21 MALE SPEAKER: Right. What you're pointing
22 at and what we're looking at here are intended to

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1 be the same.
2 DR. BRUEHL: Similar.
3 MALE SPEAKER: The same boxes?
4 DR. BRUEHL: Yes, very similar, yes. This
5 was done a little before we made a couple of
6 revisions.
7 MALE SPEAKER: Yes.
8 DR. BRUEHL: But it should be pretty
9 similar.
10 So we've got the temporal trajectory, the
11 trajectory questions that had to do with chronic
12 pain risk -- it's like how risky is this person to
13 develop chronic pain -- are now going to be under
14 the modulating factors, which will be factors
15 affecting chronic pain risk in that acute pain
16 context.
17 Pain qualities, this is now under
18 Dimension 2, the common features or associated
19 features. Very specifically, it includes temporal
20 patterns, spatial and pain qualities themselves.
21 Now, we have something called modulating
22 conditions; and context, the psychosocial, legal,

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1 work-related factors, what Dan ended up referring
2 to as the milieu, right?
3 So all of that -- did I say that well?
4 Good.
5 FEMALE SPEAKER: Is that what we call host?
6 DR. BRUEHL: What? That was what we -- yes.
7 That's what we were calling host before, which was
8 like person-centered things that now are collapsed
9 under this modulating factors.
10 Bob had said "moderating." Somebody pointed
11 out that "modulating" may get -- that "moderating"
12 in one sense can mean to reduce, to reduce
13 something. "Modulating" may be a more appropriate
14 word. But that includes psychosocial factors,
15 which we get at the catastrophizing, anxiety,
16 depression, trauma.
17 MALE SPEAKER: Over lunch, I thought
18 about -- I think I kind of propose a different
19 heading for 3 because "modulating" also suggests
20 diminishing. How about "relevant host factors"
21 for 3?
22 DR. BRUEHL: I like that in a sense, but I

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1 am also concerned that people who weren't in this
2 room to hear the context of that when they see
3 "host" are just going to drop their jaw and go,
4 "Huh?"
5 MALE SPEAKER: Think about the -- this is
6 the "risk protective," and the only thing about
7 risk obviously is we're also talking about things
8 that if it modulates after it happens, not
9 necessarily just cause it to be there or not
10 [inaudible -- off mic]. So modulating or risk or
11 protective.
12 DR. BRUEHL: Yes, I put --
13 MALE SPEAKER: In some way communicate to
14 people who are just seeing this the first time,
15 what causes pain to be worse or better --
16 DR. BRUEHL: Exactly. Exactly. Or
17 progress, yeah.
18 MALE SPEAKER: How do we just convey
19 that --
20 DR. BRUEHL: I don't know what the -- yes.
21 DR. SURESH: So instead of calling it
22 "modulating," why don't you call it "modifiers"?

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1 DR. BRUEHL: Modifying factors?
2 DR. SURESH: Modifiers.
3 FEMALE SPEAKER: Modifiers.
4 DR. SURESH: Then it becomes risk --
5 DR. BRUEHL: Okay. I'll write it down as an
6 option. These are all things we could probably
7 resolve easier in an email to let everybody vote on
8 it officially.
9 DR. DWORKIN: The most straightforward way
10 of doing it is that Mike and Pat make a decision
11 and put it in the manuscript, and we all endorse it
12 or object to it. So we can leave some of these
13 terminology challenges up to the two of them to
14 decide during the drafting process. You guys are
15 up to it, right?
16 DR. TIGHE: Yes.
17 DR. DWORKIN: Good.
18 DR. TIGHE: And I also would like to say I
19 think there's certainly room for discussion on the
20 terminology used. But the fundamental concepts on
21 each of these dimensions that Steve has shown is
22 there is general consensus that these concepts are

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1 the important domains we'd like to cover. Or do we
2 think that we need to step back before we get to
3 the terminology and look at a reconsideration of
4 the domains as headers?
5 FEMALE SPEAKER: I think it's helpful to go
6 through -- just as we are now -- and decide what it
7 is that we're talking about before we can totally
8 answer that, if that makes sense.
9 DR. BRUEHL: Well, at the end of this, let's
10 ask that question again.
11 (Laughter.)
12 FEMALE SPEAKER: Yes.
13 DR. BRUEHL: So we got -- now calling
14 modulating, modifying, whatever that is, but we're
15 talking about, yes, those things that increase
16 risk, increase severity or reduce risk or severity.
17 That could be physiological; it could be
18 psychological. That would include, in my mind,
19 things even like family factors and that kind of
20 thing.
21 MALE SPEAKER: Social meaning
22 but [inaudible - off mic] --

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1 DR. BRUEHL: Yeah, any context issues, yeah,
2 like --
3 DR. WEISMAN: I know the synonym would be
4 adaptive.
5 DR. BRUEHL: Well, not necessarily. It's
6 also dysfunctional. I mean, it depends on the
7 direction we're talking about. But it would
8 include adaptive factors for sure.
9 Context is subsumed under that Dimension 3
10 we just talked about. That would also include
11 things like I-hate-my-work; that is a context
12 factor that would be under there. Having
13 litigation potentially could go under there. So
14 it's a nice placeholder for all these other not
15 direct disease-related factors that may make it
16 better or worse.
17 Previous pain experiences also would
18 go -- because that was something that was brought
19 up yesterday. Taking high dose opioids at the time
20 that the injury occurs can affect pain afterwards.
21 All of that could go under this particular category
22 because they are all modifying factors.

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1 FEMALE SPEAKER: Age? What's that? How
2 about age?
3 DR. BRUEHL: Yes, okay. So age would be a
4 modifying factor also, yes. It sure would.
5 Gender, in some cases, maybe. I don't know.
6 Roger? Functional interference and impact,
7 that --
8 MALE SPEAKER: Would genetics go there?
9 DR. BRUEHL: Yes, I would say so. Sure.
10 MALE SPEAKER: [Inaudible – off mic]
11 DR. BRUEHL: Yes, I think that would go
12 under Dimension 3 also, genetics, because that
13 would clearly be something that would modify the
14 person's response.
15 MALE SPEAKER: Did you mean environmental or
16 did you mean [inaudible – off mic]?
17 DR. BRUEHL: Or did I -- oh, that was
18 just -- yes, no, I don't -- we'll worry about that
19 later. But yes, it was not intended to refer
20 literally to the --
21 MALE SPEAKER: I just want to make sure --
22 DR. BRUEHL: -- pollution or anything. Yes,

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1 social context maybe. Okay.
2 Functional interference and impact is its
3 own dimension here, so it's Dimension 4. Let's
4 see. We've got all this already taken care of.
5 Now, response to initial pain treatment, I'm
6 thinking that is something that probably would fit
7 under modifying factor also, because as soon that
8 the person has already been injured, has acute pain
9 when you see them, and you're making a diagnosis,
10 and you find out that they've had high-dose opioids
11 and have not had any response to that; just as an
12 example, that would be something you might list
13 there.
14 Roger?
15 DR. FILLINGIM: You know, in some ways, you
16 could think of that as a method, not whatever the
17 proper term in the ontology is. And that might be
18 a method to discern putative pain mechanisms rather
19 than modifying factors.
20 DR. BRUEHL: Yes. That's certainly a
21 consideration. I'll add that to here because that
22 was brought up yesterday, too, so the treatment

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1 response or lack thereof --
2 MALE SPEAKER: [Inaudible - off mic]. I
3 think it wouldn't be a mechanism but just a way of
4 determining -- [inaudible - off mic]. So I think
5 Roger is saying it's separate from that.
6 DR. TIGHE: So when we look at things you
7 can do to pain, we generally diagnose and treat in
8 general. And don't we usually traditionally have
9 thought of diagnostic tests? So we do imaging,
10 biochemical assays, et cetera.
11 Those treatments, just like our diagnoses,
12 can serve as treatment, as diagnostic tool. So
13 that would actually fit into multiple headings
14 across multiple domains.
15 DR. BRUEHL: It could. The one thing I'm
16 thinking of is by putting it here explicitly in
17 Dimension 5, one thing that does -- which I think
18 is probably appropriate -- is we don't know enough
19 about what drives treatment responsiveness or
20 non-responsiveness to use that in Dimension 1 as a
21 core criterion.
22 So I think putting it here as a way of

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1 inferring something about mechanisms would make a
2 lot of sense.
3 DR. TIGHE: But wouldn't this
4 manuscript -- would it be fair to say that it's one
5 of the more direct linkages that we would have
6 towards mechanisms, because I know there's been a
7 lot of --
8 There was some concern about making that
9 revolutionary step in the first draft but this
10 would be an example where we'd say we did a
11 treatment; we saw a response. We may not know the
12 finite mechanism, but we have some insight into it,
13 whatever it is, as far as the patient is concern,
14 and their response was.
15 MALE SPEAKER: I just -- to me, that box
16 seems like what causes the acute pain disorder,
17 what is the pathobiology, what is the physiology.
18 And I just don't understand why treatment would be
19 in there if it's a way to discern the mechanism or
20 biology but it's not actually part of the biology
21 itself, the physiology itself.
22 Like I might ask someone about the meaning

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1 of their illness as a way of determining something
2 about box 3, but I wouldn't say that that is part
3 of box 3.
4 DR. BRUEHL: No. And that may be very
5 specific to the types of the treatment --
6 MALE SPEAKER: So does it capture your point
7 if the phrase "response to therapeutic trial" would
8 be in there somewhere? Is that the point you were
9 getting at?
10 DR. BRUEHL: With the distinction being
11 drugs were involved as opposed to just an
12 interview?
13 MALE SPEAKER: Well, just the first draft is
14 just response to therapeutic trial, if that
15 captures the concept that's being raised.
16 DR. DWORKIN: So we certainly didn't include
17 anything about treatment response for the chronic
18 pain diagnostic criteria.
19 So I'd love to hear an example of how
20 treatment response really illuminates the patient's
21 diagnosis, because as was just said, I think
22 there's very imperfect association between the

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1 existing drugs we have and underlying
2 pathophysiologic mechanisms.
3 So I just can't think of a good example of
4 where treatment response really illuminates these
5 issues.
6 MALE SPEAKER: Can I suggest from Paul's --
7 MALE SPEAKER: What?
8 MALE SPEAKER: Just fresh in mind is Paul's
9 talk where there's a tiny area that
10 triggers paresthesias if touched just --
11 DR. DWORKIN: Well, is that treatment
12 response or is that just physical exam?
13 MALE SPEAKER: No, I think that was
14 treatment -- that was the treatment --
15 MALE SPEAKER: That was the --
16 MALE SPEAKER: He talked about infiltrating.
17 MALE SPEAKER: But it's still at the means
18 of determining mechanism. It's not a mechanism
19 itself.
20 MALE SPEAKER: Right. Right.
21 MALE SPEAKER: Like for that conceptual box
22 to be the mechanism box, why would we put a

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1 treatment trial in that box?
2 DR. BRUEHL: The keyword is --
3 MALE SPEAKER: I just wonder what -- it's
4 the physiology of the disorder; it's not about how
5 I determine that physiology, just like a question
6 about meaning is not about --
7 DR. BRUEHL: So it's methods -- you're
8 talking about is it a method or is it a concept?
9 Yes.
10 DR. FILLINGIM: Yes. And I think what Mike
11 and Patrick can do when they're -- so Sam's right.
12 That is not a putative pain mechanism. It is a
13 method, a potential test that one might use to
14 provide information about putative mechanisms. And
15 Mike and Patrick can describe that, however.
16 But central sensitization or excessive
17 activation of this channel or nerve damage, those
18 are mechanisms. I don't think we want to list
19 methods that are used to assess the mechanisms in
20 the actual dimensions. You can provide information
21 about that as you write the text.
22 DR. BRUEHL: I will use a different example

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1 there. So the concept we're interested in, that's
2 actually the mechanism, the central sensitization,
3 what we might do is a temporal summation about pain
4 protocol. That is the test for it.
5 So we wouldn't put temporal summation
6 protocol as Dimension 5. We would say that is how
7 you would assess it.
8 I think in the drug trial, what would be
9 relevant would be, for example, you have a
10 particular condition you get that you think is
11 inflammatory. You give anti-TNF drug, and they
12 don't respond. Can you infer from that, then, that
13 certain inflammatory pathways may not be active in
14 that particular patient? That would be one way I
15 might think about using that as a method.
16 DR. TIGHE: Because treatments and diagnoses
17 and any other methodologies have not been
18 considered before, would it be worth rolling that
19 into a stage 2 project so that could be done in
20 conjunction with the chronic pain development, so
21 that we'd be developing an approach to methods --
22 DR. BRUEHL: Yes.

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1 DR. TIGHE: -- in conjunction with others
2 rather than have it --
3 DR. BRUEHL: Yes.
4 DR. TIGHE: Would that be reasonable?
5 MALE SPEAKER: That makes sense.
6 DR. DWORKIN: My recollection is that Rob
7 Edwards' paper on phenotyping for chronic pain
8 trials, which is now in press in Pain has
9 pharmacologic challenge as an example of one
10 approach to phenotyping. And so this would be
11 consistent with that.
12 DR. BRUEHL: Right.
13 Back to where we were, just to finish this
14 up, so we did previous experience with the same
15 condition or treatment. That was brought up I
16 think under the Dimension 3 when we're talking
17 about medical or history factors that are relevant,
18 not only with the opioids but prior pain
19 conditions. And I suppose in that context, you
20 could say something, if it was relevant, about
21 prior treatment or prior response. But there is a
22 place, at least, to put that on there.

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1 Now, I will say what we don't really have
2 covered, explicitly that is, on the original AAPT,
3 are conditions and comorbidities, which is a
4 separate dimension in the chronic pain taxonomy.
5 Now, my argument for why that might be
6 appropriate is that in a chronic pain setting, it
7 was ongoing for a very long time. There's more
8 opportunity for all these comorbidities to be
9 present that may or may not directly impact on the
10 condition.
11 What we've done differently in Dimension 1,
12 compared to the chronic pain -- because, in many
13 cases, really, the only sign or symptom you have is
14 the person reports pain, and there may not be much
15 else to tie it to.
16 To distinguish between conditions, we are
17 having to rely on a description of the location,
18 the organ system, the tissue, and the disease
19 process if there is one. So we've kind of already
20 talked about the most relevant comorbidities like
21 here in Dimension 1, explicitly as part of the
22 diagnosis because those are the ones that are

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1 really relevant to how that person presents right
2 then.
3 I like leaving it that way if everybody's
4 okay with it, just because it keeps this at
5 5 dimensions, which is kind of paralleling what
6 we've got with the other one. The more you've got,
7 the more unwieldy it gets. And we still are
8 capturing relevant, the most relevant comorbidities
9 and conditions in Dimension 1. That is maybe open
10 for debate, but I think that makes some sense.
11 MALE SPEAKER: Can it go in Dimension 3
12 then?
13 DR. BRUEHL: Yes, I mean, I think you could
14 squeeze it in other places like that.
15 MALE SPEAKER: Dimension 2, like at common
16 features, it could be -- like for my world
17 of -- let's say a rape survivor with acute pain, a
18 common feature would be acute stress disorder
19 symptoms or something like that. I mean, you could
20 put it in that box.
21 DR. BRUEHL: Yes. In that context, I would
22 probably do it in Dimension 3 actually, but it's

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1 debatable, I guess.
2 Okay. So if you look, this was the list we
3 had yesterday. Everything that we've talked about
4 needing to go into that is covered somewhere on
5 this. They're all fairly broad dimensions, which
6 was what the intent was so that we could have a
7 place to put other things that might come up.
8 I think we succeeded in doing that, and I
9 will kind of, I guess, leave that where -- oh, can
10 you bring up the one slide? I wanted to just do a
11 real fast comparison here just so you can see.
12 So this is the chronic pain criteria. Core
13 diagnostic criteria, that's exactly what we've got
14 here. The main difference is that we have the
15 event listed and some of the more physiological
16 tissue issues, and that kind of thing that's
17 relevant. But it's basically the same thing.
18 Dimension 2, we called it -- Roger, I didn't
19 realize you -- these are your slides, right?
20 DR. CARR: Mine.
21 DR. BRUEHL: Oh, yours, Dan? So okay, that
22 explains why "frequent" is up there.

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1 MALE SPEAKER: This is a little
2 wordsmithing. When I first read it, if I see
3 common features, I'm expecting to see another thing
4 that has some aspects of it that are in common with
5 the first thing. But I thought the intent was
6 really to use the word "frequent" or, as you said,
7 "associated."
8 DR. BRUEHL: Yes.
9 MALE SPEAKER: So that's a tweak to capture
10 more precisely, what I thought was the intent of
11 that dimension.
12 DR. BRUEHL: Okay. So you guys that are
13 writing this, so we have the -- "common" is what
14 the original chronic pain taxonomy said.
15 "Associated features" is what I had written here
16 originally.
17 Dan is suggesting we could use "frequent"
18 also.
19 MALE SPEAKER: [Inaudible - off mic] or
20 "associated," that -- [inaudible].
21 DR. BRUEHL: Yes. So whatever we call that,
22 though, that dimension is actually very similar to

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1 what we had up here where it was the non-pain
2 features, as well as many aspects of the pain
3 itself that were qualitative. That's where those
4 went in the chronic pain taxonomy.
5 Yeah?
6 FEMALE SPEAKER: Just to clarify
7 then -- because on this handout, signs, symptoms
8 and quality fell under common features, under
9 Dimension 2, so then we moved them back up to 1 or
10 no?
11 DR. BRUEHL: No. So -- yeah, the best way
12 to explain that is a -- remember yesterday in the
13 talk on CRPS, I said if you went to the literature,
14 you'd see this long list of signs and symptoms that
15 have been associated with it.
16 When we did the diagnostic criteria, they
17 only incorporated a certain portion of those. That
18 didn't make those other ones not exist anymore. It
19 just went they weren't used for diagnosis.
20 So what we actually have are diagnostic
21 signs and symptoms that are crucial to diagnosis in
22 Dimension 1. And other signs and symptoms that

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1 aren't actually used to make the diagnosis per se
2 but are kind of characterizing the disorder, those
3 go in Dimension 2.
4 That's an important point because this is
5 what I discovered in doing this for the chronic
6 pain. When we're getting things back from the
7 working groups with proposed criteria, some of them
8 felt like -- it was very clear, they felt they had
9 an obligation to list every single sign and symptom
10 that had ever been reported in the literature as
11 part of their diagnostic criteria. And in one
12 case, I think there were at least 12 or 15
13 criteria.
14 That is not necessary because many of these
15 things only occurred in small portions of patients
16 and were things that maybe didn't differentiate
17 very well from other conditions, so they wouldn't
18 be very useful.
19 Henrik?
20 DR. KEHLET: Where do we have the pain
21 assessment? Rest pain versus evoked pain, which is
22 crucial.

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1 DR. BRUEHL: That's a methodology and
2 that -- okay, but what that would do is
3 Dimension -- in my mind, Dimension 2 would be
4 common features. So the common feature listed
5 might be pain exacerbated with movement or pain
6 only on movement.
7 What you just said, like having them do some
8 activity to evaluate that, to assess that, that is
9 the methodology you would use to carry out
10 Dimension 2.
11 MALE SPEAKER: If it was part of the core
12 diagnosis, it could be in core criteria.
13 DR. BRUEHL: It could be.
14 MALE SPEAKER: If a particular pain
15 disorder -- if mechanical allodynia was a key
16 feature, that could be --
17 DR. BRUEHL: And that's absolutely right.
18 You guys in the working groups would be the ones to
19 decide what's important enough to put as a core
20 diagnostic criterion. And it might very well be
21 that pain with movement is pathognomonic for that
22 particular condition, so you'd put it up there.

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1 DR. TIGHE: To address Henrik's question, we
2 have trajectory, at least, to list under the common
3 features or associated features. We considered
4 expanding that as somewhat to temporal, which
5 included trajectories of ascending, descending, and
6 flat stability for random cycles, or versus
7 stabled, ranges and then inducibilities as well.
8 So we took that single term and we expanded
9 upon it a little bit. But I agree, this is
10 something that will have to be better defined in
11 the working groups outside of this discussion.
12 DR. BRUEHL: And I think the graphic that
13 was shown earlier that had an X-and Y-axis and then
14 five different lines, different slopes or different
15 oscillations, that is what's captured in
16 Dimension 2. That's what part of what would go
17 there.
18 MALE SPEAKER: While the idea is in the air,
19 how about just saying "other features"? Because if
20 something is a feature, that means it's featured,
21 so there's redundancy. Just saying "other
22 features."

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1 DR. BRUEHL: You guys can write that down
2 under 5.
3 We have lots of options. But I think
4 that's -- I mean all these are okay to consider.
5 Greg?
6 DR. TERMAN: So again, I really like the
7 idea of trying to stay near the chronic pain
8 taxonomy as possible. But my real point is that
9 the temporal trajectory may end up in the first
10 dimension to distinguish it from chronic pain
11 conditions.
12 DR. BRUEHL: Can you explain that a little
13 bit? What do you mean by that, like an example?
14 DR. TERMAN: Well, I think Raj's example is
15 the best one. We talked about it -- Dr. Kehlet
16 talked about, you know, certain --
17 If you're talking about post-surgical pain,
18 for instance, well, you're probably talking about
19 it within a certain time epic. So in order to have
20 it be a core criteria of post-surgical pain, you
21 need to put that epic, even if it's arbitrary.
22 You're not going to call it post-surgical pain if

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1 it's 3 months out.
2 DR. BRUEHL: So pain that occurs within one
3 week of having undergoing X surgery --
4 DR. TERMAN: I have no idea what time frame
5 is appropriate.
6 DR. BRUEHL: I think that --
7 DR. TERMAN: But it seems like, for all of
8 these acute sorts of conditions or events, we're
9 going to be talking -- we're going to need, as a
10 core criteria, when is it no longer acute.
11 DR. BRUEHL: So event and the temporal
12 association with the event. Right?
13 DR. TERMAN: Yeah.
14 DR. BRUEHL: I guess we didn't make that
15 explicit.
16 DR. KENT: So another way to possibly look
17 at it, too, on the microfiche is -- we have type of
18 event listed in core criteria and in common, other
19 or associated features, temporal.
20 So one concept would be to lump it into core
21 criteria or to split it in terms of having time
22 from event, whatever that may be for whatever that

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1 working group is. But in the same sense of core
2 versus common, having that graph of undulation and
3 everything being more of the descriptive richness
4 of the temporal nature in common. But at least
5 that core concept of time from event be in the core
6 set.
7 DR. BRUEHL: I will tell you in writing
8 actual criteria to be used in clinical practice,
9 when you have a situation where you're having to
10 arbitrarily pick a time period, like 7 days or
11 14 days, in some ways, that is something that may
12 be better to leave it up to the clinician and leave
13 it as something to say, yeah, you got pain that
14 occurs following X surgery, and the pain is
15 temporally associated with the surgery.
16 You don't say what "temporally associated"
17 means. You leave it up to their judgment, and that
18 avoids the issue of having to be arbitrary in doing
19 that.
20 DR. DWORKIN: But, Steve, you couldn't do it
21 that way if you wanted to do a clinical trial. If
22 I'm doing a clinical trial of acute

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1 post-thoracotomy pain, I've got to define my time
2 window.
3 So I agree with Greg that I think in -- in a
4 sense, I agree with Mike also, that for many of
5 these conditions, maybe all of them, one aspect of
6 the core diagnostic criteria is going to be the
7 time window used to define acute pain.
8 DR. TIGHE: So one of the implicit
9 constructs here under core criteria with time from
10 event is at the time from event is also directly
11 associated with the length diagnosis, so
12 post-thoracotomy, from thoracotomy, but also the
13 tissues involved with Dr. Brennan's talk, so we
14 know exactly what features we're talking about in
15 that, and then the location to give us a little bit
16 more of a representation to other clinical context
17 that already exist.
18 So we've tied those together into a single
19 entity. We really can no longer talk about time
20 from event without also considering the diagnosis,
21 just like we can't talk about the diagnosis without
22 considering how far out we are from the injury.

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1 DR. BRUEHL: And I'm getting a little
2 confused here. So are you arguing that the time
3 window, whatever that may be, is part of the
4 Dimension 1; it's going to have to be?
5 DR. TIGHE: I believe so.
6 DR. BRUEHL: I do, too. I just want to make
7 sure we're agreeing on that.
8 DR. TIGHE: But now, the fluctuations and
9 other sub-characterizations, I think, are common
10 features because they don't necessary drive the
11 core criteria.
12 DR. BRUEHL: Okay. Perfect.
13 DR. TIGHE: And you're not always going to
14 know them either depending on --
15 DR. WEISMAN: Yes, I disagree. In terms of
16 developing this as a hierarchy, you don't need time
17 in this first box or this first category. And to
18 address Bob's concern, that's easy. That falls
19 into Dimension 2, where you might be doing an acute
20 trial for a burn population and the clinical trial
21 defines it as having to be within the first
22 24 hours of the burn.

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1 I mean, that would be easy. You don't need
2 that temporal feature in the definition of the
3 acute pain condition. And I think that's going to
4 cloud Dimension 1.
5 I think Dimension 1 should literally define
6 what the acute pain types are, and it should be
7 irrespective of time because time is a common
8 feature, modifying feature. It might even be
9 modifying, or modulating, or adapting in
10 Dimension 3. That's where time comes in.
11 DR. BRUEHL: Just pragmatically, so if
12 you're diagnosing a patient -- a hypothetical
13 example here, so our criteria say it has to have
14 pain onset within 3 days of X surgery, right? And
15 you've got a patient who has had nothing else
16 happen who, day 4, starts complaining about pain.
17 Then you got another patient where 2 weeks after
18 surgery is complaining about pain.
19 Now, which of those would fall into our
20 diagnostic category? So if the person is one day
21 beyond our window, would you still, as a clinician,
22 think that they had that diagnosis that pain is

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1 linked to the surgery? And if it's 2 weeks out,
2 would you say that --
3 MALE SPEAKER: Well, no, it's like -- it
4 seems like, you know, with the DSM-III example,
5 that DSM-III says, oh, of course, in clinician
6 practice, there may be people that you call
7 depression that just fall one side of the line of
8 the other. But we still need standard criteria so
9 that when you study depression and I study
10 depression, we know that we're both studying
11 something that we call "depression."
12 It seems like these time periods would be
13 similar if I do something for acute pain,
14 something, and I want an indication for that, that
15 it would be sort of a cutoff knowing that they're
16 going to be in clinician practice.
17 DR. BRUEHL: And I think that makes perfect
18 sense logically to have something like that
19 specified.
20 I'm sorry, behind you? Yes?
21 DR. POLOMANO: I'm still grappling with
22 early acute pain, which I do believe has to be

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1 addressed. And early acute pain is going to differ
2 for every pain condition.
3 With zoster, it's not subacute pain 3 weeks
4 later. They're still having acute pain. With
5 joint replacements, they're still having
6 significant pain when they're entering rehab.
7 DR. BRUEHL: And we're not specifying how
8 long the pain lasts.
9 DR. POLOMANO: Right. But we talked about
10 that subacute, which I think, again, subacute
11 infers that it's -- if you have subacute care, you
12 get less care; it's less intensive.
13 So if we could do early and persistent as
14 terms and focus on the early, and not define it by
15 a time course but a way that it would characterize
16 the initial acute pain presentation --
17 DR. DWORKIN: Rosemary, I want to ask you a
18 question. So I agree with you that, personally, I
19 would consider pain 3 weeks after rash onset in a
20 patient with zoster to be acute pain. But what
21 about 5 weeks? And I think it's up to us or the
22 working groups to set those windows.

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1 DR. POLOMANO: Yes. So it's all different
2 but it would be different for every condition.
3 DR. DWORKIN: Absolutely.
4 DR. POLOMANO: Right. So if we could just
5 define that the later kind of pain that might
6 be -- just trying to align with the chronic pain
7 because you have the subacute -- you had the
8 chronic and we have IASP with this subacute
9 category.
10 So I'm trying to line the trajectory up to
11 chronic pain for this particular -- so if there was
12 a way to do early and persistent and not give any
13 time because it's all relevant to the pain
14 condition.
15 DR. BRUEHL: It is specific to each pain
16 condition. And don't mistake the fact that this is
17 standardized language up here to mean that what's
18 in these boxes for any given condition are being
19 specified. That will be totally up to the people
20 in the working group who can factor in that in this
21 condition, 3 weeks is considered abnormal and very
22 long; in this condition, that's totally normal.

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1 DR. POLOMANO: Can I make one more comment?
2 I feel like the source of this whole debate is that
3 for some conditions, different, like temporal
4 character, should be in the core criteria, whereas
5 others, it maybe is more -- it's better to be in
6 common features because it's less important.
7 It seems like Dimension 1 has been like, you
8 know, diagnostic criteria, and then 2 is like the
9 less important features; is that what's happening
10 here?
11 DR. BRUEHL: Kind of. Kind of.
12 DR. POLOMANO: So I mean, it may be
13 different per type, what is in 1 and what is in 2.
14 DR. BRUEHL: I think it is probably true.
15 Correct me if I'm wrong. In any acute pain
16 condition that we're talking about here that you
17 can think of, is there any of those where you would
18 not find that the pain has a clear association in
19 time with whatever the triggering event was?
20 Basically, I'm talking about do we have an
21 acute pain condition that has no triggering event,
22 that just has no way to say that it is linked in

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1 time with any --
2 DR. STANOS: So is that like some person who
3 presents with knee pain for the first time, and
4 they say, oh, my knee pain started Friday? They
5 didn't have an injury, but they just noticed it.
6 DR. BRUEHL: Now, we're going on the
7 boundaries of diagnostic criteria.
8 DR. STANOS: But like what happened before
9 that that led to that time on Friday, they noticed
10 knee pain. I'm just throwing that out there. I
11 mean, it's a little different when you look at
12 these acute conditions.
13 MALE SPEAKER: It's probably true that
14 there's no acute pain condition that wouldn't have
15 some sort of time limit, if that's what you --
16 DR. BRUEHL: Time -- no, I was actually
17 saying that -- because we're talking about two
18 different issues. One is that the onset of the
19 pain is temporally associated with some event, and
20 that's what I was just referring to. But we've
21 also got the issue of once you got that pain, how
22 long does it persist, how does it change over time,

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1 those kinds of issues.
2 I think for a core criteria, it makes
3 perfect sense to say that the pain is temporally
4 related to some identifiable event that will leave
5 out those people that just have spontaneous pain
6 where they can't recall any injury. But maybe you
7 do some exam and you discover they've got a
8 ligament injury from something that they did that
9 they didn't really remember.
10 So we're really talking about two different
11 aspects of that here.
12 Yes, Roger?
13 DR. FILLINGIM: I mean, I think it's safe to
14 say that there's something temporal that belongs in
15 Dimension 1. There are plenty of acute pain
16 conditions for which no event will be identified,
17 so you can't link it in time to an event because
18 there is no discernable event.
19 DR. BRUEHL: Which wouldn't rule out the
20 diagnosis, then, in those cases.
21 DR. FILLINGIM: No, no, no. But there's
22 always a time dimension, right? So if I've had jaw

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1 pain for 17 years, that's almost certainly not
2 acute TMD. But if I've had jaw pain for a couple
3 of days due to nothing whatsoever --
4 So there is something temporal there. There
5 are other temporal things in Dimension 2, and how
6 those apply to the conditions, as you've stated,
7 will depend on what the condition is. And the
8 working groups can figure that out, I think.
9 DR. RAJA: Steve, I'm just thinking of an
10 example. A good example is phantom pain.
11 Epidemiological studies show that while the
12 majority of them come very early on, there have
13 been descriptions of a proportion of patients who
14 have, months to years after their amputation, the
15 onset of an acute phantom pain. So does that rule
16 out an acute pain? I don't know.
17 DR. BRUEHL: That is a gray area, yeah. And
18 you got to think about those odd cases when you're
19 coming up the diagnostic criteria. Do you want
20 them to apply to somebody who would fall under that
21 situation? And if you do, you have to word it so
22 that the criteria would capture that person.

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1 MALE SPEAKER: So --
2 MALE SPEAKER: Steve --
3 DR. POLOMANO: So --
4 DR. BRUEHL: We got two -- you guys fight it
5 out. Sorry.
6 FEMALE SPEAKER: I'm just thinking of that
7 story that Steve gave about somebody who's had
8 degenerative knee disease for many years but the
9 pain starts spontaneously suddenly. So that's an
10 abrupt onset of pain.
11 But I don't know that I would categorize
12 that as acute pain because that's going to
13 continue. That's going to be a chronic pain
14 condition because of the degenerated joint even
15 though the onset --
16 DR. STANOS: Maybe it's not the knee. They
17 just have a short --
18 FEMALE SPEAKER: Right. You can argue, is
19 that acute pain or chronic pain?
20 DR. STANOS: Yes, I guess both ways. They
21 have an acute pain problem, but then they get
22 better on their own. I don't know. I think it can

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1 go either way.
2 DR. BRUEHL: That is probably for the
3 individual working group.
4 DR. SURESH: Steve, I think we do run the
5 risk of overlapping too much on chronic pain if we
6 don't define a time period and if we don't define a
7 clear cut demarcation between this and chronic
8 pain.
9 I'm really concerned that the mode of the
10 discussion is leading towards what happens a month
11 from now. This is acute pain. Let's deal with
12 acute pain. And that's where we need to start
13 focusing because it's extrapolating into this huge,
14 what am I going to be doing a month from now?
15 We'll deal with this as chronic pain later or
16 subacute pain.
17 DR. BRUEHL: Do you want to put up your
18 graphic and let's --
19 DR. COHEN: When Steve Stanos was talking
20 about muscle tissue and the type of pain associated
21 and the transition, that frequently involves a time
22 course that's longer than we might consider as

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1 acute pain.
2 It brought to mind this article that Patrick
3 wrote in Pain, Volume 16 and I just wanted to read
4 about 600 words from page 1813. But if everybody
5 agrees we could just add it to the transcript
6 later.
7 DR. BRUEHL: What is the gist, very briefly?
8 DR. COHEN: It's transition from acute to
9 chronic pain.
10 DR. BRUEHL: Okay.
11 DR. COHEN: And it includes 12 potential
12 mechanisms that could be involved.
13 (Dr. Cohen's insert.)
14 "Transition from Acute to Chronic Pain, an
15 essential component to include in the AAAPT report.
16 (Excerpted from page 1813) in Tighe, P.,
17 Buckenmaier, C. C., Boezaart, A. P., Carr, D. B.,
18 Clark, L. L., Herring, A. A., Kent, M., Mackey, S.,
19 Mariano, E. R., Polomano, R. C. and Reisfield, G.
20 M. (2015), Acute Pain Medicine in the United
21 States: A Status Report. Pain Medicine,
22 16: 1806-1826. doi: 10.1111/pme.12760

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1 "Transition from Acute to Chronic Pain
2 Nearly, all cases of chronic pain begin as acute
3 pain. Many models suggest that prolonged exposure
4 to acute pain leads to structural changes within
5 the central nervous system that transform this
6 condition into a chronic pain syndrome [104–107].
7 Depending on the type of surgery, as many as 50% to
8 70% of patients may experience surgical-site pain
9 at least 6 months after surgery, with approximately
10 10% rating their pain as severe in intensity
11 [108,109]. Established risk factors for the
12 transition of acute to chronic pain in the surgical
13 setting include younger age, female gender,
14 catastrophizing, low socioeconomic status,
15 preoperative pain, impaired diffuse noxious
16 inhibitory control, type and duration of surgery,
17 injury to specific nerves, severity of acute pain,
18 and, possibly, prior exposure to radiation therapy
19 and chemotherapy [21,110]. Notably, the focus of
20 research to date has been on acute-to-chronic pain
21 transitions in the perioperative setting;
22 investigations on the acute-to- chronic transition

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1 in nonoperative patients have lagged.
2 "The association between acute pain severity
3 and the risk of chronic pain deserves special
4 attention. It is important to note the paucity of
5 evidence demonstrating within-subject effects of
6 intervening on acute pain to definitively reduce
7 the incidence of chronic pain. Thus, it remains
8 unclear whether the association of acute pain
9 intensity with chronic pain incidence is predicated
10 upon high nociceptive loads, poor analgesic
11 effectiveness, high pain sensitivity, poor coping,
12 all of the above, or perhaps none of the above.
13 Further, given the importance of timing in such
14 transitions, it remains unclear whether there are
15 certain temporal or even spatial thresholds of
16 acute pain that increase the probability of
17 developing chronic pain. It also remains possible,
18 if unlikely, that observations of acute and chronic
19 pain are conditionally independent of one another.
20 Parsing the independent effects of the above
21 factors is difficult in experimental—let alone
22 clinical—settings, given that the observed state of

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1 a patient in pain reflects the interaction of the
2 above factors. It is even unclear whether this
3 represents multiple facets of a single disease
4 (e.g., chest pain and arm numbness from a ST
5 segment elevation myocardial infarction [STEMI]) or
6 separate disease states with distinct mechanisms
7 that present with a similar set of symptoms (e.g.,
8 gastroesophageal reflux disease and STEMI both
9 produce chest discomfort yet have radically
10 distinct mechanisms).
11 "A limited number of studies have identified
12 predictors for the development of chronic
13 postsurgical pain (CPSP) syndromes, strongly
14 boosting the rationale for advocating for more
15 comprehensive perioperative assessment of pain and
16 related outcomes and aggressive pain prevention
17 management [82,111–114]. It is estimated that 10%
18 to 50% of patients undergoing common procedures
19 such as thoracotomy, breast surgery, inguinal
20 hernia repair, leg amputation, and coronary artery
21 bypass experience chronic pain following surgery
22 [108]. Interestingly, a more extensive body of

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1 evidence for CPSP exists for patients having
2 surgery for cancer [115]. A number of studies have
3 uncovered high rates of CPSP among patients having
4 general surgery, joint replacements, and
5 prostatectomies [116–119]. Simanski et al.
6 conducted a follow-up evaluation (mean 29 months
7 postsurgery; N 5 911) and found that CPSP, defined
8 by pain intensity 2' 3 of 10, was experienced by 83
9 patients (14.8%) [116]. When analyzed by surgical
10 discipline, 28% were general surgery patients, 15%
11 vascular, and 57% trauma/orthopedic, and CPSP was
12 observed in patients having major or minor
13 procedures. Chronic pain prevalence was as high as
14 44% following total knee replacement and 27%
15 following total hip replacement [117]. Overall,
16 estimates of chronic pain prevalence range from 10%
17 to 34% following total knee arthroplasty and from
18 7% to 23% following total hip arthroplasty [118]. A
19 relatively smaller proportion of patients, about
20 14% at 3 months and 1% at 6 months, experience CPSP
21 after prostatectomy [119]."
22 (End of insert.)

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1 DR. COHEN: With that regard, I would like
2 everybody to also channel Steve. Take a deep
3 breath, and then I would like people to take
4 responsibility for providing foster care for the
5 orphan that doesn't have parents.
6 Subacute pain is not part of chronic pain;
7 it's not part of acute pain. Chronic pain medicine
8 is never going to address that. I would suggest
9 that in our system, we create a space that we call
10 "subacute pain," and we leave it empty to be filled
11 later, but that would allow us to take care of
12 patients who may have persistent pain or may be at
13 risk for chronification.
14 So all I'm suggesting is that -- I don't
15 know if my pointer points -- is that right there, I
16 don't care what we call it, just an empty space
17 that could be on a line that everybody agrees for a
18 particular condition is beyond the acute period
19 that we could add stuff to later.
20 I wouldn't debate how long the period is
21 because it might be the separation is different for
22 different conditions.

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1 DR. DWORKIN: So Bob, the way I think about
2 this -- and I just want to make sure whether it is
3 or is not consistent with what you're saying -- is
4 that for Dimension 1, it seems like we've all
5 agreed that there's going to be some time window
6 from event when there's an event or just as an
7 absolute value if there's no event.
8 To me, this kind of acute transitioning to
9 subacute is in Dimension 2 as the temporal
10 trajectory. So for whatever condition, we've
11 already given a window for the diagnosis, but I
12 think it would be a very interesting paragraph in
13 Dimension 2 to talk about the trajectory beyond
14 that window.
15 So to go back to my favorite example of
16 shingles, if let's say with Rosemary, we define
17 acute zoster pain is within 3 weeks of rash onset,
18 I think a paragraph, a very interesting paragraph
19 is what about 3 weeks and beyond? Does that
20 capture what --
21 DR. COHEN: Exactly. And then we can -- if
22 we can own the period of time that goes between

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1 what whatever everybody agrees is acute pain and
2 what everybody agrees is chronic pain, if we can
3 take responsibility for that portion of pain
4 disease, pain conditions to be worked on later, I
5 think we will be making an important step in the
6 right direction to helping a lot of patients who
7 might be in that box but we don't know a lot about
8 it.
9 MALE SPEAKER: We used to call this the
10 course of an acute illness. I mean that's what
11 we're talking about. And without new words, we
12 could just say what doctors know already.
13 DR. BRUEHL: Right. We're calling it
14 "trajectory," but it is --
15 MALE SPEAKER: I know. But it sounds like
16 we're forcing new words on what is, what, hundreds
17 of years old.
18 DR. COHEN: Does anybody have a problem with
19 the idea that our schema could include stuff that
20 went more than a week?
21 DR. BRUEHL: No, I don't have a problem, and
22 I think the relevant issue is the AAPT chronic

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1 pain, in the discussions when we were planning that
2 out, exactly this issue was brought up, was like
3 what is the dividing line for saying somebody has
4 chronic pain?
5 The best we could come up with was what's
6 used in the epidemiological studies, which is
7 3 months or 6 months of persistent daily or near
8 daily pain. And I don't know yet what's going to
9 happen with all the working groups, but I know for
10 several of them, they're just totally skipping that
11 issue because they don't want to have to try to
12 define that.
13 I think that at the very least, we do need a
14 discussion of this because it could very well -- if
15 they're in their heads in the chronic pain,
16 thinking 6 months, then there are clearly going to
17 be a pretty large number of people that will be
18 excluded from any taxonomy, kind of in a gray zone,
19 if we don't at least say maybe this applies to
20 them, too. So I think it's absolutely worth
21 noting.
22 But I will also say we were weasels when we

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1 did the chronic pain when we weren't intentionally
2 not talking about it because we don't know what the
3 right answer is.
4 DR. COHEN: We'll take responsibility,
5 though.
6 DR. BRUEHL: Okay.
7 MALE SPEAKER: But no one is saying that the
8 chronic nosology is permanent.
9 DR. BRUEHL: No.
10 MALE SPEAKER: That's right.
11 DR. BRUEHL: They will be modified also.
12 MALE SPEAKER: So there may be some features
13 here, or words, that may affect the wording there,
14 too. Eventually, they're going to agree, I have a
15 feeling.
16 DR. BRUEHL: I suspect so.
17 Yes. Henrik?
18 DR. KEHLET: Well, if the definition of
19 chronic pain was lasting 3 months or more, why
20 isn't acute pain lasting from zero to 3 months?
21 DR. BRUEHL: Because we couldn't decide on
22 3 months or 6 months or any other specific number.

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1 Although, we could agree that that's most commonly
2 used to define it.
3 MALE SPEAKER: Winner takes all, might as
4 well?
5 DR. BRUEHL: Yes, what we could do is we
6 could say generally less than 6 months, I mean, if
7 you wanted to do it that way. But I don't think we
8 can get very specific about it.
9 FEMALE SPEAKER: So I think the thing that's
10 missing that you see in other definitions is beyond
11 a reasonable period of tissue healing, too, which
12 brings back that issue of procedures versus, you
13 know, an amputation --
14 DR. BRUEHL: Which brings back to Bob's
15 issue of how do you employ that in a clinical trial
16 to be specific because it is clinician judgment,
17 right, whether it's beyond the normal healing or
18 not?
19 DR. STANOS: I'm just going back to knee. I
20 mean, if you have an ACL tear and then you have
21 pain related to that, that's very different
22 from -- like Deb saying, just a prepatellar

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1 bursitis. But if you're looking at these acute
2 pain conditions, there's got to be some flexibility
3 in deciding that.
4 DR. BRUEHL: I'm in favor of having some
5 wording that makes it a little bit flexible. But I
6 think Bob raises a good point. For clinical
7 trials, that can lead to problems, potentially.
8 MALE SPEAKER: Why not have something like
9 an asterisk that says "relevant to" a particular
10 condition can be changed, but give an outlier 3 or
11 6 months, whichever it is. Some conditions, it may
12 be 6 months. Probably, in most, it's 3, but we can
13 discuss that. And then say "subject to the
14 particular condition and its usual course."
15 DR. TIGHE: I'd like to congratulate our
16 group and our team here for having the discussion.
17 I'm brought back to the p-value, 5 percent, which
18 kind of got stuck in the literature without much
19 discussion, and here we are much later.
20 But one of the implicit lessons, the reason
21 it has gone out, it's just little probably too
22 conservative, but not so much that it's been

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1 egregious in how it's been used throughout the past
2 several decades.
3 The numbers that have been thrown out so far
4 has been 3, 7, 14 and 30 days. I do love the idea
5 of an asterisk. I think we could probably make a
6 general stance where we'd say -- we'd pick one of
7 these numbers and say, in general, we expect acute
8 pain would last in this region. However, it's
9 conditioned upon other factors, and so exceptions
10 are common and expected.
11 So we leave ourselves out. It's not a
12 complete firm, concrete stance, but at least we're
13 not abrogating our responsibility to address the
14 elephant in the room there.
15 DR. BRUEHL: I think you should write that,
16 and then let everybody see how it looks in writing
17 when they read that, does it sound legitimate or
18 not.
19 Yes, Sean?
20 DR. MACKEY: To add a mild variation to
21 that, on the NIH chronic low back pain task force,
22 the definition for chronic low back pain was back

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1 pain at least half the time for 6 months. And the
2 idea was that during that, you would have
3 accumulated at least 3 months of chronic pain; so
4 just for the sake of parallelism and other efforts
5 that are ongoing.
6 DR. BRUEHL: It might be good to mention
7 that as an example in there.
8 DR. KENT: I think the example with the
9 asterisks and throwing out something general is
10 appropriate. This isn't the only version that's
11 ever going to be put out there, that to say in our
12 current state with our best discussion that we had
13 in the current state of the literature, we'll
14 generally consider a time frame of this, completely
15 dependent on the condition, with full rights to be
16 revised as evidence accumulates and more consensus
17 is reached.
18 DR. TURK: And you can give one or two
19 examples to illustrate that it's 3 days in this
20 circumstance; it will be 12 days in this
21 circumstance. And that gives you the idea that
22 it's clause specific to whatever case you're

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1 talking about or disorder you're talking about.
2 But I think if you give an example, it'll
3 drive the point that for some circumstances, it's
4 3 days; for others, it may be 3 weeks.
5 MALE SPEAKER: Exactly. I mean, we don't
6 want to sound clinically ridiculous.
7 (Laughter.)
8 MALE SPEAKER: I don't know about that --
9 DR. BRUEHL: Speak for yourself.
10 (Laughter.)
11 MALE SPEAKER: You left out more.
12 DR. BRUEHL: What? Oh.
13 (Laughter.)
14 DR. BRUEHL: All right. It took me a second
15 to get that one, John. Thank you.
16 (Laughter.)
17 DR. BRUEHL: All right. What else do we
18 got? Anything else with this? Okay. Bob?
19 DR. DWORKIN: Question. Is there a broad
20 consensus on these 5 dimensions as a framework for
21 a multidimensional approach to the diagnosis of
22 acute pain? Does anyone have a problem with the

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1 5 dimensions that Steve just summarized?
2 DR. SURESH: I think it's a start, but I
3 think once we evolve into something on paper and as
4 we continue to edit, I think we're going to make a
5 change. I think it's very hard because we're
6 spinning here. And in many ways, I think we all
7 need to just sit down and look at this.
8 DR. DWORKIN: Suresh, thank you. You're
9 exactly right. The consensus-building doesn't end
10 until the colleagues to my right press "send" or
11 "submit" on the journal websites. So these
12 dialogues will continue as the manuscript that they
13 draft is revised and finalized.
14 But does anyone have any kind of comments
15 that need to be considered right now about this
16 5-dimension, multidimensional framework?
17 Roger?
18 DR. FILLINGIM: So maybe just one question I
19 would raise. I don't have any particular opinion
20 about this. But is everybody happy with the order
21 in which the dimensions are listed? Because no
22 matter how many times we say the order is

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1 arbitrary, people interpret them in order of
2 decreasing priority or something like that.
3 So if you accept that people are going to
4 stop somewhere before they get to Dimension 5,
5 which -- yes.
6 DR. BRUEHL: I think they're perfect as is.
7 MALE SPEAKER: I don't.
8 (Laughter.)
9 MALE SPEAKER: I agree, and I think somebody
10 actually used the word "secondary" before, and
11 that's just what we don't want. I mean, each one
12 of these five has importance.
13 The way I envision it, again, just to use
14 Venn diagrams -- or I'm sure you have a better way,
15 Steve -- is just to maybe, centrally, you have the
16 core criteria in the center, and then you have four
17 circles around or boxes, whichever they are for
18 each of the other four, and they all interrelate,
19 not only with one but also the one another if
20 that's feasible. And I'll leave that up to our
21 scribes to pictorialize.
22 FEMALE SPEAKER: Originally, I think I

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1 raised this concern that Dimension 3 or things that
2 are host factors or that are psychosocial and stuff
3 like that would get lost.
4 As someone said, oh, hey, people just look
5 at Dimension 1, whatever is at the top of the list,
6 and then they don't look at the rest and they don't
7 use the rest. And I think that would be doing a
8 disservice to our mission.
9 DR. DWORKIN: On behalf of ACTTION, I will
10 offer the services of a graphic designer if Patrick
11 and Mike need such help in preparing a more visual
12 way of presenting these 5 dimensions that doesn't
13 suggest a hierarchy. It sounds like we all think
14 that would be beneficial if it were possible.
15 DR. STANOS: Could we consider just that,
16 instead of saying "5 dimensions" like something in
17 front of that? Like, I'm looking at core, but "5
18 principle dimensions" or "5 core dimensions" to
19 make that a little stronger, that the dimensions
20 are -- would that help?
21 DR. DWORKIN: Actually, I don't think
22 they're equal because I think dimension -- but it's

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1 not Dimension 1. The core diagnostic criteria is
2 really in a separate status.
3 Those are the inclusion/exclusion criteria
4 for clinical research, clinical trials,
5 epidemiologic studies. But certainly that is a
6 core with the other 4 dimensions enriching it.
7 Those make a lot of sense if it can be written
8 about and depicted in some way that people
9 understand.
10 I learned at lunch that Steve Bruehl's wife
11 is an artist, so I think he was just volunteering
12 her services to Patrick and Mike. So we may be
13 taken care of completely in this regard.
14 Yes, Mark?
15 DR. SCHUMACHER: Yes. Hi. Just a point of
16 clarification in the same theme, the domain, NBPF
17 consequences, was that constructed in any
18 hierarchical way? Again functional consequences
19 landing on the bottom of this sub-box, that was the
20 only thing that really caught my attention since
21 the functional consequences are so critical.
22 DR. TIGHE: I think it's probably worth

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1 discussing what should be subsumed under the
2 functional consequences.
3 DR. SCHUMACHER: In the sequencing here, I
4 was just wondering if -- they're not in
5 alphabetical order, so I didn't know whether they
6 were put in a certain priority order.
7 DR. TIGHE: It was based on -- we listed it
8 based on the initial chronic pain listing, if I
9 recall correctly.
10 The ontologic representation has an example
11 that we started to show for -- under this, it's
12 called risk or protective factors, that box. You
13 can see that there can be further ontologic
14 development on this microfiche. And I apologize
15 again for the small text size.
16 But we can break out biological factors
17 quite extensively. Psychological comorbidities,
18 more factors can be segued into -- for instance the
19 example given here is mood disorders, personality
20 disorders, and substance abuse. And obviously,
21 mood disorders is still quite a broad category and
22 can be expanded on further.

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1 So each of these can influence the
2 underlying dimensions as broadly or narrowly as we
3 like. But the framework, I would like to lock down
4 so that we at least have a structure with which to
5 grow.
6 MALE SPEAKER: But there's no hierarchy.
7 DR. SCHUMACHER: No, I understand that
8 perfectly.
9 DR. TIGHE: There's no hierarchy. We
10 cannot --
11 DR. SCHUMACHER: That's not the question.
12 The question is the sequence in which they
13 appear --
14 DR. TIGHE: We could just say
15 biopsychosocial consequences.
16 DR. SCHUMACHER: Sorry. The common reader
17 would be that that function is on the bottom.
18 DR. TIGHE: If we just say five --
19 DR. BRUEHL: Are you talking about the
20 5 dimensions, the ordering of the 5 dimensions or
21 within each one?
22 DR. SCHUMACHER: No, no, no. No, within the

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1 dimension box.
2 DR. BRUEHL: Maybe we should specify that
3 these are not listed in order of importance --
4 DR. SCHUMACHER: Yes, I would just throw
5 that out there as a detail, that's all.
6 MALE SPEAKER: Also, on the first round,
7 just a procedural note, I would appreciate it if
8 both of you would look at the original notes that
9 Steve had and make sure that everything is written
10 down when you circulate it.
11 Let's not assume that everybody knows that
12 one term implies another, so that we all see it.
13 And you have it all written down. It's just a
14 matter of looking at again.
15 MALE SPEAKER: [Inaudible - off mic].
16 MALE SPEAKER: Yeah, I know. I saw you.
17 That's why -- okay. Good.
18 DR. TIGHE: Hopefully, we'll have them
19 encoded in yet another format to circulate as well,
20 because, yeah, we're depending on this quite
21 heavily.
22 DR. DWORKIN: Rosemary?

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1 DR. POLOMANO: Just a couple things,
2 [inaudible - off mic]. I was just keeping track of
3 all the issues that came up. So we're agreeing
4 that it would be first and center -- or maybe we
5 should agree on some terminology that's going to be
6 used throughout that we are all in agreement in
7 terms of this.
8 One of the other issues that came up that we
9 didn't discuss was the integration of patient-
10 reported outcomes. They came up in almost
11 everyone's talk.
12 So how is -- I mean, I am fine with these
13 domains, and I think they really align with the
14 chronic pain ones. But we really didn't come to
15 any kind of consensus about patient-reported,
16 except for the fact that I think we were in
17 agreement that some are reliable and valid and
18 should be used, and there are far too many to put
19 in this type of a framework for disease-specific,
20 or condition-specific, or event-specific diseases.
21 But I think one of the things that we should
22 do is, if at all possible in this taxonomy, are

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1 there going to be any opportunities to make
2 recommendations because I think one of the things
3 that we should do for patient-reported outcomes is
4 fit these [inaudible -- off mic].
5 DR. DWORKIN: It's a question of how the
6 components of these 5 dimensions are assessed is
7 probably beyond the scope of this paper. Because,
8 of course, we're only so far talking about the
9 first half of this paper. We haven't gotten yet to
10 the taxonomy of acute pain conditions.
11 So what we did with the chronic pain
12 initiative is to have -- and you've heard talk
13 about this. There's a supplement in press in
14 Journal of Pain with 8 articles. About 3, maybe 4
15 of those articles discuss assessment.
16 So it remains to be determined whether we're
17 going to go down the same path for this effort of
18 preparing a supplement that we talk about assessing
19 function, and sleep, and et cetera in patients with
20 acute pain. But I think it's probably beyond the
21 scope of this paper other than to just mention it.
22 DR. POLOMANO: Yes, I think it should be

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1 mentioned. Yes, I think there are far too many
2 outcomes to --
3 DR. TIGHE: So already, we have a list of
4 things we are proposing to address later down the
5 line, and that includes a definition of methods,
6 further exemplar characterizations of explicit
7 acute pain states, what is currently underway for
8 the chronic pain system.
9 I would consider the pros as yet another
10 approach. Hopefully in another two or three years,
11 there will be a much more robust acute pain pro
12 pool. I know that's actively being investigated
13 currently.
14 I think throwing out four to catch later, is
15 that reasonable? And are there other domains that
16 folks would like to us to mention that we would
17 consider in the future? Education, connotations,
18 or others? I think this would be a good point,
19 just trying to kind of plant a flag for looking
20 forward.
21 DR. TERMAN: I'm not sure this is related to
22 that question, but it may be. I personally hate to

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1 lose "comorbidity," the word "comorbidity" out of
2 Dimension 3 there, the title that is.
3 I realize that "comorbidity" is too narrow
4 for all the things that are in there because you're
5 also talking about things that protect against
6 longer-term pain. But I do think that somebody
7 who's on a bunch of high-dose opioids, that that is
8 a comorbidity. And I'm kind of tired of surgeons
9 calling and saying, the only reason they're here in
10 the hospital is because of their pain. Well, yes,
11 actually, the only reason they're here is because
12 of their surgery.
13 (Laughter.)
14 DR. TERMAN: The point is that there's this
15 big comorbidity of the 180 milligrams of OxyContin
16 3 times a day that was completely unrecognized when
17 the decision to have surgery was made, so I hate to
18 lose that.
19 DR. DWORKIN: So Greg, how about making
20 it -- and I think Steve is going to do it right
21 now. The proposal would be making it "modulating
22 factors including medical and psychiatric

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1 comorbidities"?

2 DR. TERMAN: Again, that's just a personal
3 input because I felt like that's what you were
4 asking for us to do.
5 DR. DWORKIN: And it also emphasizes the
6 continuity with the chronic pain effort. It's a
7 little different, but it's certainly continuous.
8 DR. BRUEHL: How about "modulating factors
9 and relative comorbidities" or something like that
10 with short -- is that okay?
11 MALE SPEAKER: That's really [inaudible --
12 off mic].
13 DR. TERMAN: Yes?
14 FEMALE SPEAKER: I wanted to just add to
15 that. I wonder if -- you know, the language that's
16 being used a lot are complex pain patients coming
17 in for acute pain. It's that mixed pain syndrome,
18 which I think that's a little different than
19 comorbidities, which is Greg is getting at to some
20 degree.
21 So I don't know if it's just another word
22 within this category or -- do you know what I mean?

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1 They're complex pain because they've got chronic
2 pain; they're on opioids; they've got a pump with
3 stimulator; they've got a chronic pain syndrome.
4 You're right.
5 DR. TERMAN: So again, the reason I chose
6 comorbidity is because I'm a lumpner and because
7 that's in Dimension 3 of the chronic pain thing.
8 But I think it does add something. You could use
9 another word instead, but I'd hate to see it fall
10 out completely because I think it adds something.
11 DR. TIGHE: Just to make sure I understand
12 it, without exception, would there be a role in the
13 vignette you offered also for including into
14 Dimension 4 as a functional consequence? Because
15 it's heavily not just modulating the pain
16 experience; it's heavily modulating what happens
17 with the acute pain event itself.
18 We run to this issue daily, if not hourly,
19 so I certainly agree with the importance of
20 emphasizing it. I just want to make sure we
21 emphasize it with its due attention.
22 DR. TERMAN: You're calling out opiate

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1 tolerance in particular? Well, I mean it also may
2 be related to Dimension 5. This is just one
3 example. And again, each group is likely to want
4 to work on those examples maybe quite different for
5 other acute things besides surgical.
6 But I guess my point is that if you think of
7 comorbidities as other medical conditions that are
8 affecting this acute pain process -- I mean, a lot
9 of what we've written there are comorbidities.
10 DR. BRUEHL: Greg, is part of the issue with
11 this, trying to increase the parallelism a little
12 bit, too, by using the same wording that we used
13 before?
14 DR. TERMAN: I won't deny that.
15 DR. BRUEHL: Okay.
16 (Laughter.)
17 DR. TERMAN: It's easier to teach when it's
18 not something completely different.
19 DR. BRUEHL: Then we can pay lip service to
20 that and add a word.
21 Raj?
22 DR. RAJA: I just wanted to add that in

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1 thinking of conceptualizing this paper, while it's
2 important to develop these dimensions, I would not
3 lose the opportunity to present some future
4 considerations, both in terms of research and other
5 perspectives, as part of our discussion.
6 DR. DWORKIN: We are halfway to the time I
7 promised you that was going to be the adjournment
8 to this meeting, and we're only halfway through, I
9 think, this manuscript because we haven't yet
10 talked at all about the acute pain buckets, silos,
11 whatever we call it, that we heard about this
12 morning.
13 As you can see from the page in front of
14 you, once you drop below the box of the
15 5 dimensions, there's a proposal for these acute
16 pain silos.
17 So we have about an hour and 15 minutes to
18 talk about what -- so the way we viewed it for
19 chronic pain was that the dimensions were a
20 framework for the diagnostic criteria, that the
21 categorization of chronic pain conditions was a
22 taxonomy.

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1 So what we're now doing is moving from the
2 framework, the multidimensional framework, to an
3 acute pain taxonomy, that depending on how Patrick
4 and Mike do it, is either table 1 or table 2. But
5 these are really the two key tables in the
6 manuscript.
7 So unless there are specific questions from
8 Patrick and Mike, what do people think about an
9 acute pain taxonomy?
10 I don't think we have a slide, but everyone
11 has it in front of them
12 DR. COHEN: While I'm considering the slide,
13 I wonder if part of the process could include
14 faithful mapping between what AAPT has done and
15 what AAAPT is doing.
16 I would include that within the taxonomy as
17 well as the dimensions to make it easier for folks
18 who want to make that transition from RSD and
19 causalgia to CRPS-2 and 1.
20 We should at least be keeping track of where
21 the alignments are. Is there a mechanism for that
22 that doesn't make a lot of work for the people who

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1 are doing this?
2 DR. DWORKIN: So if I'm understanding you,
3 just one possibility is to align as closely as
4 possible the acute pain taxonomy to what we've
5 already done for chronic pain.
6 That would make it look substantially
7 different than what we have at the bottom of this
8 page, where there's a hierarchy that begins with
9 three classes of events, kind of disease trial,
10 mass surgical.
11 We didn't use anything like that for chronic
12 pain. And I think you saw it earlier on yesterday,
13 peripheral and central neuropathic, spine pain,
14 arthritides and arthropathies, fibromyalgia and
15 chronic widespread pain, cancer and sickle cell
16 pain, so that's a taxonomy. It's very different
17 than what's at the bottom of the page here.
18 FEMALE SPEAKER: I actually think what's at
19 the bottom of the -- I like it in that it kind of
20 reflects what we've been talking about the last
21 couple of days and sort of captures that. I think
22 in some ways -- I mean, although we want to keep

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1 parallel, acute pain is fundamentally different.
2 FEMALE SPEAKER: So are you looking for
3 suggestions for the kingdom boxes? Is this the
4 level for the kingdom to -- because I think -- so
5 was procedure -- didn't we say procedural was going
6 to be at the same level of trauma and surgical
7 because procedure wouldn't fall in at that level?
8 DR. TIGHE: So I'll preface this by saying I
9 don't know if this is the best way to proceed. I
10 am certainly not wedded to this idea. It was just
11 an initial framework.
12 The other issue to address is if you look at
13 the example given for a fracture, it has ties both
14 to surgery and trauma. The idea is that each of
15 these elements may overlap.
16 Now, the inheritance pattern suggests that
17 if it's surgical condition, we'd have to consider
18 the ICD procedure code, so the specific event. But
19 you'd also have to consider the anesthetic type and
20 potentially other issues germane to the surgical
21 class.
22 You'd also have to consider details germane

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1 to the trauma class, which might include an injury
2 severity score or an Apache score or such. So
3 fracture would then contain all of the elements
4 from those areas.
5 There are certainly other ways of organizing
6 this aside from surgical trauma and medical. This
7 seemed to be a reasonable approach of an 80 percent
8 solution for acute pain issues. Whether we want
9 it -- and we can put a second layer underneath this
10 layer, for instance, look at neuropathic pain,
11 musculoskeletal, and then have a merging.
12 I've mapped some of that out. I think it
13 got even more confusing. So I don't know if that's
14 helpful or hurtful, to be honest with you.
15 FEMALE SPEAKER: Well, I think it's fine
16 that what you have. The only thing is that I would
17 add the box for procedural as an event, aligned
18 with trauma and surgical. So I would just add
19 "procedural" at the same level.
20 Then to capture that "medical" box, I would
21 put -- instead of medical service, I would just
22 make that box "health conditions." I don't know

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1 that "illness" is the right term, but they would be
2 all of the health problems, diseases, the
3 conditions, and you illustrate it with
4 pancreatitis.
5 So I think it's really good. I would just
6 make those --
7 MALE SPEAKER: Let me just say briefly that
8 I hate the buckets because I think we have no idea
9 what causes so many of these disorders. We're
10 going way beyond what we know, and we're just
11 creating things that'll be --
12 I understand we could say that while we're
13 doing this based on current knowledge, a lot of
14 this is going to be wrong, but why do it? Why not
15 just come up with a taxonomy and a definition for
16 each acute pain disorder and not try to call this a
17 relationship with them?
18 Because if you ask me what causes pain in
19 rape survivors, I will say, well, we have no idea
20 what causes pain in rape survivors. Or if you say,
21 what causes pain in people who've just had motor
22 vehicle collision -- I think that people think very

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1 often that because that trauma is associated with
2 the pain, the trauma caused the pain, and so much
3 evidence suggests that's not the case.
4 So I just I don't know why we're -- we're
5 getting into this big mess where a million things
6 overlap.
7 DR. TIGHE: It's certainly a point well
8 taken and, frankly, if I had my druthers, I'd like
9 to keep that approach. The problem where I run
10 into practically is with any of our outcome
11 studies, where somebody says, I'd like to look at
12 all the patients who had surgery, or I want to
13 separate the surgical and medical patients. We
14 might say, well, actually, all of our surgical
15 patients, all of their pain was not related to
16 their surgery whatsoever. It was for a toenail
17 clipping or something.
18 But there's almost a mandate in developing
19 this for a research domain for a clinical
20 enterprise that we have the ability to roll up and
21 roll down. I'll be the first to admit that
22 those --

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1 MALE SPEAKER: You could still do that
2 without creating a binning. Could you just say, I
3 want to look at acute pain syndromes that occur
4 after surgery? And then it's maybe in a core
5 criteria of, oh, currently, there is 25 defined
6 acute pain disorders that occur after surgery.
7 Here, they are. But you don't have to do that by
8 creating a relationship because, again, we have no
9 idea.
10 DR. TIGHE: Taken to the nth example, and I
11 readily acknowledge this is sort of the extreme,
12 but if we classify them, left total knee
13 replacements versus right total knee replacements,
14 and I'd say I'd like all them knee replacements
15 surgeries, I don't know if I've captured them all.
16 Revisions versus primaries. Are total knees
17 and total hips really similar? I'm not sure. But
18 at some level in a clinical decision-making, we've
19 grouped those together as total joint
20 arthroplasties, even though we know that a total
21 shoulder is probably going to be quite different
22 than a knee, than a hip.

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1 This speaks also, I think, to the difference
2 between revolutionary and evolutionary approaches.
3 With a revolutionary approach, I agree; I'd
4 actually like to go to an analytic report where we
5 look at the pure mechanisms. We only list what we
6 know and keep it at that, and I think there's a
7 reasonable argument to do so.
8 The evolutionary stage would say, we have
9 this long trail of things where we've done
10 something similar in the past, either implicitly or
11 explicitly. And to ignore that would mean we'd
12 have trouble basically pairing the current or
13 proposed schema back to anything historical.
14 But I'm certainly open to other solutions.
15 And these bins that we are proposed, I think
16 they're a step forward, but they're not, again, the
17 optimal by any guarantee.
18 DR. COHEN: Patrick, what comes under these?
19 For example, I could also see these working as a
20 6th dimension, which would allow you to have it
21 very high up in terms of the hierarchy for
22 investigational purpose but wouldn't require

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1 everything to -- it's unclear to me how things are
2 going to align under this.
3 Are all of those categories that are on this
4 slide just simply going to filter under these
5 three?
6 DR. TIGHE: This is a completely
7 separate --
8 DR. TURK: This is my slide. Let me justify
9 it. The only reason I put it up there was whatever
10 the bin -- I call it "categories" -- are going to
11 be, part of the functional reason for doing that is
12 to have working groups who are going to spend time
13 on this.
14 Within those, there may be multiple specific
15 diagnoses, and they're not going to try and cover,
16 as I said earlier, every one of the possible
17 post-surgical conditions under there, but to pick
18 two or three of either prototypic, or very common,
19 or very costly or research-intense, whatever the
20 working group decides, but they will then describe
21 and go into the nuances and the details that we're
22 talking about.

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1 But if we don't come up with some kind of
2 binning, then how are we going to identify a
3 group that's going to work on pulling these things
4 together? Each of which will come to all the
5 issues you're talking about, the nuances, about the
6 rape example.
7 Well, if you have a trauma working group and
8 they chose to pick that as a diagnostic group they
9 want to look at, they could discuss that particular
10 issue. But I don't think you could have this as
11 totally unbinned because how would we divvy up
12 who's going to work on what? What's the focus?
13 So just think of it as for functional
14 purposes at this point. It may be, down the line,
15 we decide we don't like those functional
16 categories -- sorry -- those title categories. But
17 it's the only way that I can see to help us work
18 through with the nuances that you're not going to
19 be able to capture it in the next hour and a half.
20 DR. BRUEHL: The other issue related to what
21 Dennis just said is that for publication purposes,
22 so with the AAPT, publications are coming out by

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1 working groups. So each working group will have a
2 single publication describing their 3 to 5
3 syndromes. It's not feasible to have 40 different
4 papers, each one covering one syndrome.
5 So while it doesn't have to, in the big
6 scheme of things, be a perfect fit, it has to have
7 some logical coherence, some reason why a reader
8 would go, well, that makes sense that they've got
9 these three conditions together. So it's a pretty
10 low threshold for why we would be grouping those at
11 this point.
12 DR. SURESH: Patrick, you had alluded to
13 using ICD-10 codes, but can you just briefly
14 explain how you plan on using that for this?
15 DR. TIGHE: That's a very good question.
16 I'll start the response by saying I'm not exactly
17 sure. The potential first element, actually, that
18 I think would contain the most utility would be to
19 include it as the first the item -- and in this
20 case, I think it would or would be important -- of
21 your core criteria.
22 Because if we have an event that's specified

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1 as an ICD-10 diagnosis, the ICD-10 hierarchy is
2 quite extensive, the turtle's falling on your head,
3 but it also allows us to roll up and zoom down. I
4 think that would allow us to first linkage.
5 How the ICD-10s would map on to this
6 category structure, or the three-category structure
7 or any, I'm not exactly sure. In the post-op or
8 surgical, we could include an ICD-10 procedure
9 code.
10 Rosemary also proposed a procedure bin,
11 which would also be immediately linked to the
12 procedure code rather than the diagnostic code.
13 That is one approach, but I think it certainly
14 deserves further discussion.
15 DR. RAJA: At the expense of being labeled
16 as a splitter, I don't understand the rationale
17 behind these three groups. There should be some
18 mechanistic rationale.
19 Surgery I think is a form of trauma. So
20 separating surgery and trauma is artificially
21 creating two separate groups. And then if Steve's
22 job of lumping pediatrics, geriatrics, and other

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1 groups into one was a difficult lecture, having all
2 medical acute pain into one lump is an enormous
3 task for any working group. I don't think any
4 working group can come to anything that's rational.
5 So I think we need to split this somehow to
6 make it a little more workable and rational.
7 DR. KENT: And you have a good point. The
8 intent wasn't that these would be the three
9 buckets, that they didn't need to be split further.
10 I mean, these would be massive national conference
11 working group, take up a ball room. So yeah,
12 totally, indeed.
13 I disagree a little bit with the trauma and
14 the surgical part. There's obviously true trauma
15 with surgeries, so I think there is some credence
16 to that but overlap, but definitely a gray zone
17 there. But I think bringing up discussion, we do
18 not propose this to be completely sold to it. And
19 I completely agree, there has to be some level of
20 splitting below, especially in the medical
21 component. I mean, surgery, we can pair that down.
22 But yeah, and I think if the discussion can give us

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1 some ideas, that'd be great.
2 DR. RAJA: But as you've always shown in
3 your -- when they come below the next level, you're
4 seeing there's a lot of commonality between surgery
5 and trauma. Your boxes, there's a fair amount of
6 overlapping areas there. I mean, I agree it's not
7 exactly the same, but in terms of either the tissue
8 injury, the mechanisms, there's a fair amount of
9 commonality there.
10 DR. KENT: True. True. True.
11 DR. TIGHE: Well, one important difference I
12 do want to highlight -- and the reason I do
13 is -- this was an independently constructed one
14 that also maintained the post-operative phase -- is
15 that in the surgical population, we often know
16 exactly when the insult initiated, and we're able
17 to intervene and analyze before that.
18 When we get to trauma or many of the medical
19 conditions, we are constrained to the post-event
20 time period, both for analyses and treatments. So
21 I think that's a pretty important temporal
22 distinction to make in some approach.

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1 The surgical trauma medical could also be
2 rephrased as we know exactly when it started. We
3 knew when it started, but we couldn't control it,
4 and we often aren't exactly sure when the tissue
5 trauma initiated. So these could also be
6 reformulated as more temporal distinctions very
7 broadly.
8 You make a great point. I certainly
9 wouldn't want to be writing that paper to do any of
10 those three work groups.
11 DR. DWORKIN: Deb?
12 DR. GORDON: Yes, I've been struggling for
13 the last two days about tissue type versus
14 mechanism. When I look at Dennis', it's kind of
15 helped me clarify why I struggle.
16 DR. DWORKIN: I just want to clarify. I
17 took me a moment too. This is not Dennis'
18 anything. This is this morning's agenda.
19 DR. GORDON: Okay.
20 DR. DWORKIN: I think Steve's talk, so this
21 responds to the seven talks we had this morning.
22 We can give Dennis credit for it.

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1 DR. TURK: I did the slide. I didn't create
2 the time -- I made the slide.
3 DR. GORDON: But if you take colorectal
4 surgery, where people have a referred pain to
5 their shoulder from distention and air put in, they
6 might have, several days later, some inflammatory
7 infectious leak process. Is that post-op pain or
8 is that inflammatory pain?
9 I like the division between medicine and
10 surgery, but I remember Dan yesterday started out
11 by saying anatomy matters when it comes to acute
12 pain.
13 So I'm looking at table 2 of Roger's paper
14 on the chronic that's got the taxonomy of chronic
15 pain disorders. And I think some of this fits
16 under medicine and surgery by anatomy type, right,
17 musculoskeletal pain, visceral pain, orofacial
18 pain.
19 So I think we could probably use some of
20 this division in table 2 under medicine and
21 surgery.
22 I don't know about trauma because you're

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1 talking about both physical and psychological
2 trauma with a rape victim, right? I mean, I'm in a
3 trauma hospital, and people are often coming in and
4 they have -- just like Trip was saying -- all of
5 that stuff. They've got multi-organ trauma, and
6 they've got a lot of psychological trauma.
7 So I think trauma becomes a
8 modifying -- it's like the blast injury, versus the
9 gun shot, versus the surgery. It's a modifying
10 factor. I don't think it's a category in it of
11 itself.
12 DR. TIGHE: Deb, one question I have for
13 you. Are you okay with overlapping constructs? So
14 the person who comes in with the trauma and has a
15 fractured ankle would fit under two different
16 categories here, two different categories in the
17 two-part schema.
18 Are you okay with pulling from multiple
19 categories, or do we think we need to stick
20 with -- force everything to a single category?
21 DR. GORDON: Well, if you're going to do a
22 clinical study, I mean how would you put your

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1 exclusion/inclusion criteria? I don't know.
2 To me, you'd be like, do you want to include
3 people that have been in a trauma, or do you want
4 people who had a planned operation?
5 DR. TIGHE: We do this actually for rib
6 fracture studies. We find people that have rib
7 fractures, and they have lots of other trauma.
8 There's heterogeneity in the rib fracture. I know
9 you all have a lot of experience with that
10 particular population.
11 DR. TURK: I think you want one, and a way
12 we did this in the chronic pain -- and then, Bob,
13 you can speak to this about the chemotherapy-
14 induced neuropathy -- is that under a cancer or is
15 that under neuropathic pain? And we made a
16 decision it was going to go in one, and the other
17 group simply said to refer to the other group to
18 get that information.
19 So I don't think you want something that
20 occurs in two different places. There has to be
21 some agreement among whoever is doing it as to
22 where are they going to fall. And it's totally

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1 appropriate to refer to, see the other one that's
2 relevant to this particular problem. We're not
3 covering it under this particular grouping.
4 So I don't think you want to have two, but I
5 think it's totally okay to cross-reference. In
6 fact, that's part of the beauty -- if I can say
7 that word -- of using the same dimensions, whatever
8 they are, is that, in fact, you can refer back and
9 forth to these, and they'll make sense as you'll
10 hear about them.
11 MALE SPEAKER: I think also we have to take
12 into consideration that we -- a lot of us are using
13 electronic medical records, and it becomes very
14 difficult to separate some of this when we extract
15 the data or we do retrospective data.
16 I've done this. It's easy to separate
17 surgical from non-surgical patients when you
18 extract the data. But trauma patients, there is no
19 easy way to figure out from the rest of your
20 patients.
21 I honestly think that we can say, surgical
22 or non-surgical, trauma can fall into both groups,

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1 non-surgical trauma and surgical trauma, because
2 not every trauma goes to surgery.
3 So we can subdivide after that to whatever
4 we want and make it a bit easier for electronic
5 medical records to go back and extract the data.
6 DR. WEISMAN: It's always going to be very
7 confusing. I was sitting here thinking about
8 actually a real person who was shot, and it took
9 out the greater part of this sciatic nerve as it
10 entered his abdomen and blew out a lot of stuff in
11 his abdomen.
12 When he first hit the ER, he had acute
13 projectile injury pain. Then as he was bleeding to
14 death, he was taken to the operating room, and as
15 you can imagine, had a zipper created in his front.
16 Then as he was recovering from that, after
17 he had been resuscitated, on day 2, developed acute
18 neuropathic pain because his sciatic nerve was
19 taken out by the injury.
20 So I would argue it's okay to have
21 categories like this. And even though I'm sort of
22 going back on myself a little bit, the time in that

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1 individual dictated, if you will, what category he
2 belonged in as he went along this insane acute pain
3 trajectory. Right?
4 So we're going to have a hard time simply
5 dividing all post-op patients into post-op. Many
6 of them come in with acute pain from whatever,
7 either their illnesses or their trauma is
8 et cetera. And I think it's okay still to have a
9 taxonomy which looks at these different buckets,
10 these different categories. And at different
11 points in time, an individual may fit into multiple
12 buckets. That's totally okay.
13 DR. DWORKIN: They're multiple diagnoses.
14 DR. WEISMAN: Sure, absolutely. And they
15 would be in the electronic record that way as well.
16 Their ICD-10 codes, for that individual I
17 described, he'd have all of them in there.
18 DR. DWORKIN: Bob?
19 DR. COHEN: Just to make clear, I didn't
20 understand the children before, but now, I do. So
21 under medical, the children are everything else
22 that was presented, and they could be specifically

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1 listed as acute musculoskeletal, acute visceral,
2 other acute disease associated.
3 I'm looking at your handout that says
4 surgical trauma, medical. And as long as medical
5 then has these other boxes to take care of the
6 other topics that were discussed this morning, it
7 would seem that, although they might be at slightly
8 different levels in your tree diagram, they all
9 would lend themselves to working group, to be a
10 good size for a working group.
11 DR. KENT: Just for the sake of throwing out
12 an idea that can get shot down, if we take the
13 surgical and non-surgical -- I'm just throwing this
14 out as a proposal. You have the surgical and
15 non-surgical. Under surgical, you're going to have
16 all surgery, but it'll be subclassified for
17 whatever framework that is.
18 FEMALE SPEAKER: Often hard to --
19 DR. KENT: And then you take non-surgical.
20 Other than post-op, just put all that stuff under
21 non-surgical. I'm not saying that's a perfect
22 listing, but at least just make -- you know, like

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1 chalk talk, just moving something up there, like
2 it, not like it. But all surgery, subclassified in
3 whatever we decide it to be, ortho, neuro,
4 whatever.
5 Non-surgical acute pain, everything there
6 minus post-op, and maybe it's a place to start,
7 moving forward to see if we have acceptable
8 buckets.
9 DR. TIGHE: So then you could also
10 take -- if you had surgery for a specific type such
11 as neuro, you could also pull the elements over
12 from neuro. We found there are certain elements
13 that were very particular for back pain. You just
14 make sure they were included in the post-operative
15 back pain domain. So you could still have
16 splitting of certain elements in those areas.
17 FEMALE SPEAKER: Can I just ask a really
18 simple, practical question? How many working
19 groups are there going to be?
20 MALE SPEAKER: One million.
21 DR. BRUEHL: It depends on how many clusters
22 we end up with.

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1 (Laughter.)
2 FEMALE SPEAKER: Do we have like just a
3 ballpark figure? I mean, just so we can sort of
4 wrap our --
5 DR. DWORKIN: We have like 8 or 9 for
6 chronic pain, and that's worked really well. So I
7 imagine the same neighborhood would work equally
8 well for acute pain. Two or three is too small
9 because it means the working groups are responsible
10 for too many conditions, and 20 is clearly
11 unwieldy.
12 FEMALE SPEAKER: Right. Because it seemed
13 like the presentation sort of followed these kind
14 of natural predestined things. And one thing that
15 struck me was that, although, obviously, there's
16 going to be lots of boundary issues, there are
17 certain boundary issues that it might be helpful
18 for us to discuss as a group that are more
19 important than other smaller-boundary issues.
20 Like it would be good to get to that today
21 if we could find like, okay, here's what we think
22 the buckets are going to be --

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1 DR. TURK: What we did in the chronic pain
2 group was we came up with the categories because we
3 had people who were willing to work on those areas,
4 which partially defined this. But then when there
5 became boundary issues, it went to a steering
6 committee, which was essentially who we were, the
7 five people organizing this.
8 We would say, well, there's an overlap
9 between the chemotherapy-induced pain for
10 neuropathy, both in the cancer -- which
11 group -- and then we would negotiate with the
12 groups to see who preferred to pick this up, and
13 then we let them cross-reference.
14 So you had somewhat of an adjudicating
15 group, if you will, to oversee it. But the reason
16 we came up with the number of working groups is
17 because we had people -- and I'm emphasizing this
18 because when you asked the question how many
19 working groups, that's interesting. How many
20 people in this room are willing to be involved in a
21 working group? And if it turns out that only two
22 of you, we'd have two working groups.

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1 (Laughter.)
2 DR. TURK: That's going to be partially
3 reality.
4 DR. DWORKIN: To go back to the taxonomy, I
5 just want to make sure I know what's on the
6 table -- because it sounds to me like there's a
7 fair amount of agreement -- that we could have a
8 superordinate structure that would be very simple.
9 And what's been proposed is either what's on the
10 piece of paper, which is medical, surgical, and
11 trauma, or I might just mention combining surgical
12 and non-surgical.
13 So there's two different superordinate
14 proposals on the table. But it sounds to
15 me -- separate and apart from what we decide about
16 that superordinate structure, it sounds like pretty
17 much every agrees that the agenda for this morning,
18 which is on Dennis' slide, is a reasonable
19 breakdown for seven or eight working groups.
20 Is that correct or am I being too
21 optimistic?
22 DR. RAJA: I'd like to tell Mike that I like

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1 that new organizational structure that you've
2 indicated because from what we heard yesterday
3 that -- and we have as it core criteria that the
4 organ tissue systems make a difference. And we
5 heard from all the presentations today that there
6 are some differences between the nature of the
7 pain, between these different systems.
8 So surgical, non-surgical, and then listing
9 some of these other categories makes a lot of sense
10 to me.
11 DR. DWORKIN: Greg?
12 DR. TERMAN: I guess another way to ask it
13 is whether there is anybody's favorite or even
14 non-favorite acute pain event that is not included
15 in those categories up there.
16 FEMALE SPEAKER: Ischemia.
17 DR. RAJA: Vascular ischemia is not really,
18 though, the same thing.
19 DR. SURESH: There was also another area
20 that Rosemary alluded to, and that is procedural
21 pain; so as a separate category because there's a
22 lot of procedural stuff that is done, cancer

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1 patients and other patients.
2 DR. GORDON: So I wonder if that fits with
3 burn, though, as a skin, as an organ? Because it's
4 cutaneous, it's percutaneous needle sticks for a
5 lot of these procedures. Right?
6 DR. KENT: Can that be grouped -- it's not a
7 surgery, but can it be grouped under surgery?
8 DR. GORDON: No. I'm just asking, is it
9 grouped under procedures or is it skin? Because
10 where does burn fit up there?
11 DR. KENT: Oh, burn? I thought you were
12 talking about IV sticks.
13 DR. TIGHE: So I think the intention is for
14 procedure, it fits, and we know when it's going to
15 occur. So it could fit under -- because we've
16 identified timing is so important, it seems like it
17 would fit well under the surgery category that Mike
18 proposed.
19 DR. DWORKIN: And that's what we had this
20 morning with Chris' talk.
21 DR. TIGHE: Would that be reasonable,
22 Dr. Suresh?

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1 DR. SURESH: So there are things like a --
2 DR. TIGHE: It would be a subheading.
3 DR. SURESH: Okay. No. My only concern is
4 there's a lot of procedural stuff that's done.
5 Particularly in the pediatric population, there's
6 tons of procedural stuff that's done and carries a
7 completely different implication.
8 These are repeated stuff, too. Like a
9 lumbar puncture could be done 10 times in a week;
10 that's a lot of procedural pain.
11 DR. TIGHE: One other advantage to
12 addressing the procedural pain has allowed us to
13 make a distinction between intra-procedural
14 nociception versus procedural pain, versus
15 post-operative pain.
16 I think we can create that. If we have its
17 own heading, as Mike proposed for surgery, it would
18 allow us to both differentiate those elements under
19 the surgical heading but also give them some
20 important special attention.
21 DR. SURESH: So what happens to the patient
22 in the emergency department then, who's not

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1 actually having surgery yet but could have a
2 fracture?
3 DR. TIGHE: If they're having a procedure,
4 the pain attributed to that procedure would be
5 under the surgical heading, or maybe we'd
6 generalize it to a more procedural anticipated.
7 DR. BRUEHL: One thing I wanted to mention
8 just to complicate the issue a little bit, I'm
9 being bothered as I'm listening to this and looking
10 at this up here. And Patrick indicated he's
11 confused too, which is a problem is he's the
12 organizer of everything.
13 We got a little bit of confounding, I think,
14 between what the trigger is and what the presumed
15 mechanisms are. You can see that, so we're talking
16 about surgical, non-surgical and trauma. But
17 conceivably within all three of those, you've got
18 neuropathic pain, you've got visceral pain
19 conditions, you've got musculoskeletal conditions.
20 So if we're coming down to a taxonomy where
21 we've got a defined number of, let's say, 3 to
22 5 conditions within each working group, do we end

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1 up with like -- do we have 9 different diagnostic
2 criteria, each one specific to trauma, non-surgery
3 or surgery, or do we have three conditions, like a
4 neuropathic, visceral and musculoskeletal that has
5 some modifier that says whether it's associated
6 with surgical, non-surgical or trauma?
7 I'm just wondering, in practice, how does
8 that get laid out?
9 DR. TIGHE: So I haven't been able to figure
10 how to rectify that with having subordinate
11 classes. One solution would be -- when we talked
12 about the putative pain mechanisms as one of the
13 dimensions -- is that we make sure that every pain
14 object up here includes details on the mechanism.
15 So we have subtypes of orofacial pain that
16 are predominantly neuropathic or -- visceral is not
17 the right term. But you would just emphasize those
18 in the dimensional characterization, rather than
19 have certain subtypes.
20 I don't know how that overlaps with what was
21 done with the chronic pain approach because it
22 seemed to be that those were taken out as

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1 mechanisms and instead put as separate objects.
2 Are we going to be implicitly describing
3 them according to those mechanisms, according to
4 the dimensional structure for everything?
5 MALE SPEAKER: It seems to me like that
6 might be having our cake and eating it in a good
7 way and that we're not putting our money down on a
8 specific mechanism when the mechanism is very dirty
9 and overlapping.
10 No one can argue that the surgical pain is
11 surgery-related. I mean, in most cases, if you
12 have an incision-related -- for example, or a
13 trauma-related. So at least that's general
14 category that's not so artificial.
15 DR. BRUEHL: So just to make sure I
16 understand what you're saying there, so the
17 diagnosis would be post-surgical pain, something
18 like that. And then within that, for a given
19 individual, you would actually select out the
20 modifier and -- I don't know exactly what it would
21 be. I guess it would be reflected to some
22 extent in the -- pain qualities and things like

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1 that might differ between these 3 subgroups.
2 It still implies though that post-surgical
3 pain is not a distinct diagnostic category because
4 you're going to have a great deal of variability
5 within that.
6 For example, if we try to say all
7 post-surgical pain is one diagnostic category, when
8 we get to trying to list the signs and symptoms
9 that you'd use to make the diagnosis, we would have
10 to include features that are characteristic of
11 neuropathic pain, and visceral pain, and
12 musculoskeletal.
13 MALE SPEAKER: The surgical is just a
14 bucket, and then the individual disorders might be,
15 you know --
16 DR. BRUEHL: That's what I'm asking.
17 MALE SPEAKER: -- your laparoscopic
18 cholecystectomy, or pain after -- you know, much
19 more specific.
20 DR. BRUEHL: Okay. So it doesn't use the
21 neuropathic, visceral, musculoskeletal at all, but
22 it implies those mechanisms were relevant in these

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1 other dimensions.
2 MALE SPEAKER: The individual diagnoses or
3 individual acute pain disorders could be under
4 that, and then within each -- a pain disorder, as
5 we've said, one of the dimensions relates to the
6 mechanisms, the putative mechanisms.
7 DR. TURK: Think about the function. How is
8 this going to be used? If someone is interested in
9 post-surgical pain issues, they're going to go into
10 this and go to post -- they're not going to look
11 across by mechanism; they're going to try and
12 identify where do I start to use this?
13 So if you don't put them in some kind of
14 buckets, how do you guide the user making decision
15 where do they go?
16 DR. BRUEHL: So in the surgical bucket, we
17 might pick the top five surgeries that are
18 associated with problematic acute pain, right, and
19 those would be your five diagnostic categories.
20 Within there under non-surgical acute pain, you
21 might have sprains and strains as a category. I'm
22 not sure what else would fall in there.

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1 So the working groups, it would make sense
2 to organize by event, in a sense, surgical,
3 non-surgical trauma, orofacial or disease, right?
4 DR. KENT: I was going to throw that out
5 there. I was wondering if for non-surgical pain,
6 what the group felt of the agenda today. The names
7 of each of the talks today, do you think that's
8 sufficient to fill non-surgical pain, non-surgical
9 musculoskeletal pain, non-surgical visceral pain,
10 et cetera, et cetera?
11 I'm throwing that out there to --
12 DR. BRUEHL: I think the one problem child
13 with that is the cancer pain. And I think it was
14 mentioned earlier that you could look at cancer
15 pain as, in some context, a surgical -- it could be
16 a surgical pain in some cases. It could be
17 procedural. It could fall into other categories.
18 DR. KENT: But if we don't -- let's not go
19 back to the -- my thought would be let's not go
20 back to the mechanism-based because then we just
21 run into the same problem we've been trying to
22 avoid if we, within those buckets, name it by the

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1 type of -- I mean, you can call it orofacial if you
2 want to, but if we use bins that are descriptive
3 but not mechanistic, not impugning a specific
4 mechanism --
5 DR. BRUEHL: We have "disease-related," was
6 kind of a category with cancer being one. Are
7 there other prototypes for that are major -- that
8 would fall under acute pain?
9 Sickle cell, by the way, is under the
10 chronic pain. Do we want to have -- here's an
11 issue. I would say for something like that where
12 the features may be similar, do we want to just
13 co-opt what has been done for the chronic pain and
14 modify it?
15 DR. FILLINGIM: I don't think the chronic
16 group with sickle cell is doing vaso-occlusive
17 crisis pain.
18 MALE SPEAKER: I agree because they're not
19 chronic.
20 DR. BRUEHL: Okay.
21 DR. FILLINGIM: So like cancer pain, they
22 will be both acute and chronic disease associated.

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1 DR. DWORKIN: So the other thing, I think,
2 for this taxonomy, we don't have to select at this
3 point the 4 or 5 specific conditions that would be
4 in each of these bins. That would be up to the
5 working groups.
6 The way we did it for the chronic pain
7 effort is that the early paper, Roger's paper, just
8 gave some examples of each of these buckets that
9 aren't necessarily what was moved forward into the
10 actual activities of the working group.
11 It sounds like we certainly have a
12 sufficient number of examples for each of these for
13 this step of the process. And then the working
14 groups would decide, are those examples the most
15 prevalent, clinically, and research-relevant
16 conditions, or are they different conditions that
17 should be focused on?
18 DR. BRUEHL: I think I've written up here
19 the buckets that may be appropriate would be
20 surgical, non-surgical, trauma, orofacial, disease
21 and neuro. Is that not correct?
22 FEMALE SPEAKER: Non-surgical contains

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1 trauma and -- I think we were talking about two.
2 We have medicine and surgical. That's what I
3 was -- that's what I'm -- what's the word?
4 Promoting now. I don't think trauma is a separate
5 bucket.
6 MALE SPEAKER: Or disease-related.
7 DR. BRUEHL: That's fine. I'm just --
8 DR. FILLINGIM: Steve, I think you're mixing
9 superordinate categories with subcategories.
10 DR. BRUEHL: That's what I'm trying to get
11 is what is the --
12 DR. FILLINGIM: There are two proposals on
13 the table for the superordinate categories:
14 surgical/procedural and non-surgical. That's one.
15 DR. BRUEHL: Okay.
16 DR. FILLINGIM: And the other is what's
17 written here, and I don't know if Patrick and Mike
18 are going to decide or if we're all going to
19 decide. And then under that, I think the current
20 proposal is everything from trauma to the right
21 goes under non-surgical.
22 MALE SPEAKER: Should we also include an

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1 ischemic pain category?
2 MALE SPEAKER: Is that a mechanism or --
3 MALE SPEAKER: We actually treat it
4 distinctly. And interestingly, we see certain
5 treatments will not work for ischemic pain.
6 DR. DWORKIN: So does that fit as other
7 disease-associated acute pain?
8 DR. COHEN: We've also left out -- where
9 would obstetrical pain fit in? Because being
10 pregnant isn't a disease.
11 MALE SPEAKER: And I don't understand how
12 neuro is separate from post-surgical.
13 DR. DWORKIN: It's non-post-surgical
14 neuropathic pain, John, because obviously --
15 MALE SPEAKER: That means I don't have to
16 worry; I can't create any pain by doing surgery?
17 DR. DWORKIN: No, no, no. Certainly, some
18 acute post-surgical pain is neuropathic. It's just
19 for the sake of moving the effort forward, we have
20 to create some arbitrary artificial distinctions,
21 and that's a reasonable one.
22 In other words, in Raja's talk this morning,

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1 he didn't talk about, as I recall, neuropathic pain
2 following surgery because that was already covered
3 by Chris. But I completely agree with your point;
4 that's arbitrary.
5 We could put post-surgical pain in the
6 neuropathic bin if we all believe it's mostly
7 neuropathic. There's going to be these arbitrary
8 placing conditions in bin because it's
9 not [indiscernible].
10 MALE SPEAKER: Similarly, orofacial, so much
11 of the orofacial pain is due to a surgical
12 procedure on a tooth. Now, what is that going to
13 be? Is that going to orofacial or is it going to
14 be post-surgical?
15 DR. DWORKIN: It's equally arbitrary.
16 MALE SPEAKER: Okay.
17 DR. TIGHE: One comment about the ischemic
18 issue, we have unpublished data. We looked at
19 600,000 abstracts on PubMed and looked to see to
20 what they're actually talking about using natural
21 image processing. The first thing we -- all of the
22 abstracts contain the term "pain."

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1 Far and away, the number one thing everybody
2 was talking about was cardiac, and it was all
3 pertaining to myocardial ischemia, chest pain,
4 et cetera, et cetera. We had to do some fancy
5 footwork to avoid getting into the pure cardiac
6 domain for the first 30 concepts we looked at.
7 So whatever we look at as our perspective
8 for how we would rank different categories, I think
9 it's worth at least acknowledging that the broader
10 health community is going to say cardiac is pretty
11 important to some extent. And I don't know what
12 other domains we may be missing in that area as
13 well.
14 DR. GORDON: So I like the idea of
15 surgical/procedural medicine, and then kind of
16 again like table 2 from the chronic pain, there is
17 a condition-associated pain not classified
18 elsewhere or special, like labor and delivery,
19 acute ischemic events like MI or, you know, you've
20 struck your toe, and now you've got a dead toe, or
21 something else somebody mentioned.
22 Maybe sickle cell, maybe acute sickle cell

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1 is called out as a special condition that's not
2 really classified anywhere.
3 DR. TURK: I keep wanting to remind
4 you -- and I'm sorry to sound like a broken
5 record -- we're not assuming that this covers every
6 possible condition in that category -- some group
7 may come along and say we'd like to take on that
8 particular issue. As long as they follow whatever
9 template we agree on, that's fine, but it's not as
10 if this covered -- there's no --
11 In the IASP classification, I believe
12 there's 317 different chronic pain diagnoses.
13 We're not trying to cover every one of those
14 317 diagnoses. We're trying to say, here is a
15 template; here are examples within these different
16 buckets that we've chosen to use.
17 There are many things that were not covered.
18 There are some overlap, and we will refer back and
19 forth to each other.
20 But I think we're getting caught up that
21 we're going to have the -- the total taxonomy is
22 all going to be handled by this group, at least not

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1 in the next year and a half. That's for sure.
2 DR. DWORKIN: Sean?
3 DR. MACKEY: Yes. Steve, you may have
4 already covered this. One could frame this as
5 either traumatic or not traumatic and have surgery
6 as a form of trauma.
7 I mean, when you think about it, surgery is
8 nothing more than a controlled induced trauma. The
9 patient just happens to be unconscious, paralyzed,
10 and amnesic. But the mechanisms, the things that
11 you're doing to the patient is no different than if
12 they walked out and were struck by a car. It's
13 exactly the same mechanism. It's just clean.
14 DR. BRUEHL: You could look at it that way.
15 DR. MACKEY: So you've got trauma, which
16 you've got surgical trauma; you've got
17 non-surgical, and then you've got your other
18 bucket, which is non-traumatic.
19 MALE SPEAKER: That's a non-surgical way of
20 looking at it.
21 (Laughter.)
22 MALE SPEAKER: The only thing I would say is

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1 I think that whether to have the trauma with the
2 surgery underneath, or surgery with trauma
3 underneath, that having the surgical and
4 non-surgical is perhaps more context-sensitive
5 because undergoing a particular type of surgery
6 is --
7 MALE SPEAKER: So on that theme, one of the
8 things that's fascinates me is this group has
9 basically assumed that acute pain starts when the
10 patient hits the recovery room.
11 Why not start when the patient starts to
12 have a surgical procedure? Why are we overlooking
13 what may or may not be done during the operation
14 that plays a role in this?
15 DR. BRUEHL: Surgical trauma.
16 MALE SPEAKER: Like when it says post-op, it
17 doesn't say "surgery."
18 DR. TIGHE: We could easily revise, as
19 Dr. Suresh also pointed out, procedural pain. And
20 so if we looked at the surgical category and looked
21 at procedural and classified it as from the time of
22 the onset of tissue injury, whether it's an IV

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1 placement or it's a cystectomy, but also continue
2 that general superordinate classification to
3 include surgery and post-operative issues as well,
4 and then the non-surgical superordinate category
5 would have the remainder.
6 MALE SPEAKER: Particularly since you're
7 looking later on here at risk factors and
8 preventative things, I think we need to start when
9 the scalpel comes out, not when the stitches go in.
10 DR. DWORKIN: So I've heard relatively broad
11 agreement on minor modification on what's on the
12 slide. I'm not sure I know -- and this goes back
13 to a question Roger raised a moment ago. Are we
14 thinking that the superordinate categories are 2 or
15 3? And if it's 2, which are the two?
16 DR. BRUEHL: Yes. Can you tell me what they
17 are? I'm trying to write this down. Since you
18 can't see this -- how it stands now, we have
19 surgical/procedural with no categories under it,
20 separate.
21 We have non-surgical that's neuro, disease,
22 visceral, musculoskeletal, and trauma, and maybe

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1 ischemic, and those are the only two. So we have
2 all these subcategories under non-surgical and none
3 under surgical at this point.
4 Is that correct?
5 DR. TIGHE: Correct. But I would actually
6 put "procedural" and "post-operative" under the
7 surgical category, and then under the post --
8 DR. BRUEHL: Oh, okay. Yes. So "surgical,"
9 then under that you've got procedural and
10 post-operative.
11 DR. TIGHE: Correct. And then we can
12 distinguish that by type of surgery or other
13 hallmarks.
14 FEMALE SPEAKER: That's like major surgery
15 versus procedure. Now, you're going to have a
16 post-procedure period, too.
17 DR. TIGHE: The intention of the procedural
18 aspect is to look at the nociceptive and/or pain
19 response that occurred during the active procedure
20 or surgery, and the post-operative would be things
21 that occur after the official end of the surgery.
22 DR. TURK: So Patrick, as the resident

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1 ontologist in the room, can I ask, what added value
2 do we have of having this superordinate distinction
3 of surgical/procedural versus non-surgical, as
4 opposed to kind of the more level playing field on
5 the slide?
6 DR. TIGHE: The two general attractions
7 would be if we had certain attributes or
8 constraints that we would like to apply only to the
9 surgical setting or to the non-surgical setting
10 that allows us to distinguish the two.
11 So we have our core dimensions. If there
12 are other features we would like to consider for
13 all surgical patients but not all medical patients,
14 the split allows us to consider those because of
15 the inheritance patterns.
16 The second is when we're doing a roll-up.
17 So I would need to all the patients' pain scores in
18 the hospital, and I need to make some distinctions.
19 Having a vertical hierarchy allows me to track up
20 or down that tree as much as I like.
21 Now, those are arguing for it. Obviously,
22 against it are that it adds some certain complexity

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1 to this, and that is not a trivial amount of
2 complexity. But our current experience with
3 ontologies in EMRs is that we generally end up
4 getting in trouble by not addressing these
5 assumptions early enough, that we end up having to
6 go back and do some fancy footwork to address
7 post-op rules. And it's sometimes easier to buy a
8 little complexity early.
9 DR. DWORKIN: So you think the superordinate
10 dichotomy of surgical/procedural versus non adds
11 value in terms of doing studies of electronic
12 medical records?
13 (Crosstalk.)
14 DR. TIGHE: My personal belief, yes, but I
15 don't want to minimize that there is a
16 counterargument that's certainly [indiscernible].
17 DR. DWORKIN: Raj and then Steve.
18 DR. RAJA: I think one other aspect of this
19 dichotomy is that except for the emergency surgery,
20 in most other surgeries, we know when the temporal
21 event is going to happen, while in diseases and
22 other conditions, we're not sure when that time of

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1 event is.
2 DR. TIGHE: I think that's an excellent
3 point. You had changed the term "surgical" to
4 "anticipated." We know exactly when it's going to
5 occur. Whereas, as those that are non-surgical,
6 we're usually playing catch-up to some extent, not
7 always but --
8 MALE SPEAKER: That then poses the problem
9 of lumping trauma under surgical, which is one of
10 the thought processes that I had when I was sort of
11 suggesting having trauma as a third branch, is
12 because of the predictability and a lot of the
13 psychological and other factors, risk factors that
14 go into trauma versus predictable or elective
15 surgery.
16 DR. DWORKIN: Steve, you were --
17 DR. STANOS: Yes. I'm just thinking for
18 musculoskeletal pain, for low back pain, patient
19 has acute low back, right leg pain, radiculopathy,
20 has a laminectomy, where do we put that in? I mean
21 is it still musculoskeletal or is it going to be
22 under non-surgical? I mean it's kind of --

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1 DR. DWORKIN: Before the laminectomy, it's
2 musculoskeletal. At the point at which they
3 entered John's OR, it becomes surgical, not
4 post-surgical.
5 DR. STANOS: Okay, I'm just --
6 MALE SPEAKER: And then six months later
7 failed back surgery [indiscernible].
8 (Laughter.)
9 MALE SPEAKER: If you could just book that,
10 you just predict that right up front.
11 (Laughter.)
12 DR. COHEN: What is the disadvantage of
13 having this level one be an additional dimension?
14 Is there a disadvantage that this would be a
15 dimension so that it could be applied to every
16 patient?
17 DR. TIGHE: You lose some of the inheritance
18 patterns in that regard.
19 DR. COHEN: Okay.
20 DR. COHEN: I like it because, again, it
21 stresses that these are defined by context and
22 not -- it's mechanistically bound as one might

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1 think looking across that list.
2 DR. BRUEHL: So at this point, we are not
3 creating trauma as a separate category. It goes
4 under medical/non-surgical; is that correct?
5 DR. DWORKIN: Paul?
6 DR. DESJARDINS: The one gap that strikes me
7 is that multiple speakers have talked about
8 post-orthopedic as being some of the most
9 recalcitrant pain to treat. But yet, that doesn't
10 explicitly seem to land in this category.
11 It may well be that orthopedic and
12 musculoskeletal are close enough that we'll
13 consider it there. But it just seems to me that if
14 it really is a major problem, a set of disorders
15 are difficult to treat, they don't follow as
16 predictable a trajectory, you need more of whatever
17 therapy you need. My question was maybe we need to
18 pump up orthopedic a little bit.
19 I don't have a dog in the fight. I'm not an
20 orthopedist but --
21 DR. TIGHE: So Paul, to support that, I
22 think when we get to our work groups for looking at

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1 the exemplar classes for post-operative, I think
2 many of our orthopedic surgeries will probably flow
3 to the top as one of the first to address in a
4 subwork group. And likely, that may occur on the
5 non-surgical side as well. Because it's so common,
6 it may be one of the first to addressed.
7 DR. DESJARDINS: Okay. I think that's a
8 reasonable way to target it.
9 DR. DWORKIN: Greg?
10 DR. TERMAN: So Dennis may tell me that this
11 isn't important, but this morning when we heard
12 about trauma, we heard about burn as well. And
13 although you'd put trauma underneath surgery maybe,
14 I'm not sure you'd want to put burn underneath.
15 DR. BRUEHL: Yeah. We don't have burn up
16 here. What does that go under?
17 (Crosstalk.)
18 MALE SPEAKER: You're missing an organ. It
19 should go under an organ called "skin," which after
20 all has lots of nociceptors in it.
21 DR. TIGHE: And it could easily be put in
22 under trauma.

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1 MALE SPEAKER: Why don't you take this?
2 FEMALE SPEAKER: "Trauma/burn"?
3 MALE SPEAKER: And "burn" if you want.
4 (Crosstalk.)
5 DR. TIGHE: Would burn fall under trauma?
6 MALE SPEAKER: Why not?
7 MALE SPEAKER: At first, it was a trauma.
8 And then subsequently, there typically would be one
9 or more surgical procedures.
10 (Crosstalk.)
11 FEMALE SPEAKER: Fracture would be the same
12 thing, right?
13 DR. TURK: Could you use your microphones so
14 the transcriber --
15 (Crosstalk.)
16 FEMALE SPEAKER: What were the other ones
17 besides labor and burn?
18 DR. GORDON: So it seems to me that there's
19 just a couple of conditions that really stick out
20 that fit under there that can't be classified any
21 other way. It's probably labor pain, it's burn,
22 and it's acute sickle cell crisis.

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1 DR. BRUEHL: Sickle cell --
2 DR. GORDON: Because labor pain is visceral
3 medical medicine, but you can't really lump it in
4 with all these other things, can you?
5 DR. TURK: Labor pain could be special
6 populations.
7 DR. GORDON: Right. That's what I'm saying,
8 burn, I think, is too.
9 DR. BRUEHL: Now, are special populations a
10 modifier of the other categories or is it a
11 separate category?
12 DR. TURK: It was special this morning.
13 DR. BRUEHL: Thank you. Very helpful.
14 DR. SCHREIBER: Like let's say people want
15 to work on a particular topic. I think it'd be
16 great to sort of flesh out these individual buckets
17 and say what's going to go where, like is
18 post-surgical going to -- like what's all going to
19 include, and what is neuro going to include. You
20 know what I'm saying? Can we do that?
21 DR. BRUEHL: I don't think that -- I think
22 that was the one we were waiting for next time to

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1 do.
2 DR. DWORKIN: Right.
3 DR. SCHREIBER: Okay.
4 DR. DWORKIN: The way we did it with chronic
5 pain is that the working groups made those
6 decisions because they're not straightforward
7 decisions about what are the most prevalent and/or
8 most clinically relevant conditions to include
9 within, for example, musculoskeletal pain or acute
10 neuropathic pain.
11 So I think it would be taking some autonomy
12 away from the working groups that will ultimately
13 be constituted for us to do that here. By the way,
14 we don't have the time.
15 DR. SCHREIBER: Okay. But looking at it
16 another way, to define the working groups, to
17 decide who's going to go on what working group, it
18 may --
19 DR. DWORKIN: Kristin, I think we've defined
20 the working groups, to my satisfaction, that's --
21 DR. SCHREIBER: No. But I mean like who's
22 on what working group.

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1 DR. DWORKIN: You will be hearing from us.
2 The answer to that question is, wait and see.
3 DR. SURESH: So I do have a little bit of
4 concern about the special groups because I think we
5 do run the risk of missing out on certain things
6 that you would have clumped under the others.
7 So I think my personal bias would be to
8 include these special groups as an addendum to each
9 one of these subcategories. Otherwise, you know,
10 what are you going to do, rewrite the entire thing
11 for these special categories? It won't make sense.
12 DR. BRUEHL: That's actually what we did
13 with the chronic pain group. We had a chapter on
14 special populations that gave all the details and
15 general things that apply across disorders.
16 DR. SURESH: Right.
17 DR. BRUEHL: And in the individual working
18 group chapters for specific diagnoses, we are
19 referring to that group paper unless there's
20 something very specific to that condition with
21 regards to kids or older people. And in context to
22 the diagnostic description, we would put that

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1 information. So it's kind of like an addendum.
2 Now, one thing we didn't do -- and this is
3 up for debate, I guess -- once you get in a working
4 group is whether to have alternate criteria that
5 were more appropriate for kids. I think in the
6 adult chronic pain literature, the conclusion was,
7 from the experts, that we didn't know enough to do
8 that yet at this point. So we left it by default.
9 DR. SURESH: But there's a lot of data on
10 acute pain, though, in children.
11 DR. BRUEHL: And maybe that is something
12 that needs to be done differently.
13 Bob, I don't know if you have other things
14 to add to that.
15 MALE SPEAKER: What about infectious pain?
16 Where is that going to fit?
17 FEMALE SPEAKER: Medical.
18 DR. BRUEHL: Disease, under disease, I
19 guess.
20 MALE SPEAKER: So the pulpitis, which is the
21 most common type of dental pain, which is really an
22 infection, that's where it would go? And otitis

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1 media was mentioned also as common.
2 DR. BRUEHL: Orofacial, is that on here?
3 MALE SPEAKER: Orofacial is not there
4 anymore.
5 DR. BRUEHL: Oh, that got dropped off.
6 Sorry.
7 MALE SPEAKER: Okay. So that's how you get
8 there? Okay.
9 DR. BRUEHL: Yeah.
10 DR. DWORKIN: So is there any disagreement
11 with the superordinate dichotomy of surgical
12 procedural versus essentially other, and then a
13 subordinate set of, I guess, it's 6 or 7 categories
14 that you saw on Dennis' more content-filled slide,
15 the one before this one?
16 Or do we have broad agreement in the room
17 with that superordinate and subordinate structure?
18 Because we don't have the time, and I think it's
19 really beyond our purview to fill out the very
20 specific set of 20-30 acute pain conditions that
21 will be included in these seven bins.
22 But is there any disagreement with the

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1 structure that we've just finalized over the last
2 hour or so?
3 MALE SPEAKER: Just a question. What
4 happens if the hypothesis that created the
5 dichotomy is inaccurate? We've started by lumping,
6 but we're eventually going to be having 7 or
7 8 buckets, let's call them.
8 Maybe we should do the buckets, which are
9 there already. And if he's right, because I think
10 you mentioned, too, there's a differentiating
11 factor between the two genres, let's call them.
12 And if you're right, then we then lump into the
13 two.
14 DR. DWORKIN: Maybe I should let Patrick
15 answer, but if one of the key drivers of the
16 superordinate dichotomy is use of electronic
17 medical records being facilitated, it's hard to
18 imagine that anything we're going to do is going to
19 invalidate that.
20 DR. TIGHE: Well, it also brings up a good
21 point, though, the 1 in 12 rule. I think because
22 we have in other, and we've already thrown a couple

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1 other new areas out that were not directly
2 addressed, we're starting to get to the upper bound
3 of how many different classes we would like. And
4 that suggests that we need to figure out some way
5 to split that, not necessarily critically for today
6 but to promote further growth without having to
7 reorganize the structure.
8 So by having the superordinate piece also
9 allows us to grow without having to redo this
10 framework.
11 MALE SPEAKER: I thought the main
12 reason -- I thought Dennis said it quite well.
13 We're going to have working groups. We're not
14 going to have 2; we're going to have 7 or 8. So in
15 the end, we're going to have 7 or 8 working groups.
16 I'm just a little concerned that we're
17 assuming that the medical record system, the
18 electronic medical records can't find these 7
19 without this dichotomy. I don't know if that's
20 true. I've heard some people, who know more about
21 it than I do, say that's rubbish; we're still
22 going -- you can still locate them without the two

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1 genres. That's all.
2 I don't think it matters at this point. I
3 just hate to see anything published that has the
4 two overriding genres, and then later we abandon
5 them because we realize they weren't necessary.
6 That's all.
7 DR. TIGHE: There's no reason we can't
8 remove them, and there's nothing keeping us. This
9 is not an overriding constraint. We could keep it
10 as well.
11 MALE SPEAKER: I'd just like to see the
12 readership -- and there are multiple audiences we
13 talked about that some are pedagogic, some are
14 clinical and a lot of them are research and
15 regulatory -- have a great response and acceptance
16 of this and familiarity with the terminology, as
17 well as the organization.
18 I don't want to turn people off by saying,
19 oh, I don't think there should be that false -- to
20 them, false; I'm not saying it is. But I
21 understand the rationale for it. I just don't know
22 if that's true. But I know later -- I mean I was

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1 always trained to be a lumper later.
2 So that's my bias. And I know from what
3 Dennis said, his experience with Roger and Bob
4 before, is that it's really to create the working
5 groups, which we're going to do anyhow.
6 MALE SPEAKER: Yes, but if it's presented
7 later, and people walk up, and they see those, and
8 they see their condition underneath it, and they
9 go, that's not visceral, that's this -- I think
10 having the ordinate groups serve these utilities,
11 but it also helps people understand that it's sort
12 of a functional working group and we're not going
13 mechanism-based, though.
14 DR. DWORKIN: I think at a moment like this,
15 there are two options. We could vote on whether
16 the superordinate structure appears to all of us to
17 add value. The other option is we just let Patrick
18 and Mike draft the manuscript, and then we get to
19 see how it all looks.
20 I can't imagine that very many words are
21 going to be devoted to this kind of superordinate
22 dichotomy. And I think if during the drafting and

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1 revising process, we all kind of end up agreeing
2 with Bernie, that it'll be easy enough to take out
3 if they decide to keep it in. Does that seem
4 sensible rather than voting on it now? It just
5 seems like it's not something we should be voting
6 on at this point.
7 Dennis is making faces, meaning he doesn't
8 want to vote on it. So let's defer to Dennis'
9 wisdom to defer this --
10 DR. TURK: Always. Always.
11 DR. DWORKIN: We're going to defer to
12 Dennis' wisdom to defer this decision to the review
13 of the manuscript that we will all be involved in.
14 I love ending meetings at least a few
15 minutes early. Any other comments about the
16 multidimensional framework, the superordinates,
17 subordinate taxonomy that's on the slide?
18 MALE SPEAKER: Who's going to come up with
19 an acronym? That was very important.
20 Next Steps
21 DR. DWORKIN: Well, I think we have the
22 acronym.

1 Okay. So just a couple of final comments.
2 As you've heard, you're all going to be seeing a
3 draft manuscript from Mike and Patrick. We will
4 also, at some point in the next several months, be
5 getting in touch with the individuals who gave
6 talks this morning to begin to think in more detail
7 than we had time to do today about working groups,
8 populating working groups, next steps for working
9 groups to develop diagnostic criteria. So that is
10 also in the horizon in addition to in tandem with
11 the manuscript.

12 I've been asked to emphasize to all of you
13 who gave presentations to make sure to get
14 up-to-date slides to Valorie and Andrea because if
15 you've revised your presentation, we want your
16 latest version of your presentation to go on the
17 ACTTION AAAPT website rather than the version you
18 prepared a week ago.

19 I'd like to thank all of the speakers on
20 behalf of the AAAPT steering committee, ACTTION,
21 APS, AAPM, for really a wonderfully provocative,
22 interesting, stimulating series of talks.

1 Personally, I think the talks we've had at
2 this two-day meeting have really been better than
3 just about any of the previous meetings in terms of
4 the quality and the care and thoughtfulness that
5 went into the talks.

6 I'd like to thank all of you for your
7 patience and hanging in here until 4 o'clock on a
8 Friday afternoon. And particularly, they're not in
9 the room, but again to thank Valorie and Andrea for
10 making sure this has been a seamless, and easy, and
11 straightforward meeting.

12 So you'll be hearing from us. Email us if
13 you have any concerns, any questions, thoughts.
14 And safe flights home, everybody.

15 Finally, thank you, Patrick and Mike.
16 (Applause.)

17 DR. DWORKIN: If it weren't for the two of
18 them, Dennis would have to be writing this
19 manuscript, and you wouldn't see it until 2027.

20 (Laughter.)

21 (Whereupon, at 3:49 p.m., the meeting was
22 adjourned.)

	204:20		252:14	135:8
\$	1:33 (1)	2	28% (1)	44% (1)
	205:2		252:10	252:14
\$800-name (1)	10 (11)	2 (48)	29 (2)	45 (1)
166:20	21:2;24:11,11;27:6;	14:1;18:11;23:2;54:5,	1:10;252:6	175:5
[107:3;132:9;151:13;	9;73:3;74:3;77:21;80:1,		481 (1)
	167:13;174:7;252:8;	20;81:5;82:4;83:19;	3	128:14
	306:9	92:19;93:1,17;97:10;		4-point (1)
[104–107] (1)	10% (3)	107:14;178:3;182:19;	3 (59)	170:18
249:6	249:10;251:17;252:16	184:20;199:1;209:9;	5:6,7;18:11;23:2;28:8;	4th (1)
[108,109] (1)	10.1111/pme12760 (1)	210:18;223:19;226:15;	54:5;55:12;74:3;80:20;	188:1
249:11	248:22	227:18;229:9;230:3;	85:22;87:5;100:20;	
[108] (1)	10:17 (1)	231:3,10;232:16;	106:4;107:17;116:5;	5
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[116] (1)	100-person (1)	297:17;318:16;322:14,	3;224:16;226:11,22;	30:17;44:13;45:5;60:9;
252:9	164:15	15;337:14	234:1;238:10,14;240:3,	61:1;74:3;80:1,3;88:5,
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[117] (1)	12 (5)	20 (7)	20,22;259:10,12;260:4;	218:17;223:6;226:5;
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[118] (1)	248:11;261:20;336:21	124:15;186:3;301:10	271:14;273:2,16;275:7;	259:17;262:20;263:1;
252:18	12:27 (1)	200 (1)	288:2;307:21;310:1;	264:4;265:12,16,17,18;
[119] (1)	204:21	164:12	322:15	268:20,20;271:6;276:2;
252:21	128 (1)	2008 (3)	3:49 (2)	277:15;288:2;307:22;
[21,110] (1)	128:16	135:2,7,10	1:11;342:21	314:3
249:19	130 (1)	2009 (1)	30 (7)	50 (5)
[82,111–114] (1)	107:16	24:15	107:10;140:11;	68:17;106:8;126:17;
251:17	14 (2)	2010 (2)	146:17;175:4;205:20;	148:14;151:14
[Inaudible (15)]	235:11;260:4	35:8;105:2	260:4;318:6	50% (2)
67:1,3;162:6;209:14;	14% (1)	2013 (2)	30-degree (1)	249:7;251:18
212:10;214:22;216:10,	252:20	14:9;17:1	147:7	55 (1)
16;218:2,4;228:19;	14.8% (1)	2015 (2)	30s (1)	84:14
269:15;270:2;271:4;	252:9	135:8;248:20	103:22	55-bed (1)
274:11	15 (9)	2016 (1)	316 (1)	104:22
[inaudible] (1)	20:8;23:4;30:16;31:2;	1:10	135:9	57% (1)
228:20	174:7;178:13;205:15;	2020 (1)	317 (2)	252:11
[indiscernible] (3)	230:12;277:17	35:8	319:12,14	5-dimension (1)
317:9;325:16;327:7	15% (1)	2027 (1)	32 (1)	263:16
[STEMI] (1)	252:10	342:19	34% (1)	5th (4)
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