Promoting Brain Health for Older Adults Around the Time of Surgery: The HELP Program

2018

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Host: Welcome to the American Society of Anesthesiologists’ Perioperative Brain Health Initiative Podcast: Promoting Brain Health for Older Adults Around the Time of Surgery.

Dr. Carol Peden: Welcome, everybody, to this podcast where I’m very pleased to be able to interview Dr. Sharon Inouye, Director of the Aging Brain Center and Milton and Shirley Levy Family Chair and Professor of Medicine at Harvard, on her work in delirium prevention and the Hospital Elder Life Program.

My name is Carol Peden. I’m a Professor of Anesthesiology at the University of Southern California in Los Angeles, and I have a long-standing interest in improving outcomes for older patients undergoing surgery, so I’m delighted to be able to speak to one of the world’s experts on improving brain health after surgery.

The American Society of Anesthesiologists has recently launched the Perioperative Brain Health Initiative which is a campaign—a public health campaign—to improve brain health around the time of surgery for older patients. And Dr. Inouye’s work is absolutely central to what we are trying to do with this campaign.

So, without further ado, Dr. Inouye, can you tell us about yourself and how you developed an interest in older patients and delirium?
Dr. Sharon K. Inouye: Sure. Dr. Peden, I’m delighted to be here, and I want to thank you and the ASA for inviting me.

My background is that I am board certified in internal medicine and geriatric medicine, and I also have additional training in epidemiology, public health and chronic disease prevention. It was really out of that background and out of my clinical work where I saw older patients often becoming confused in the hospital setting and largely being neglected. That was the experience that got me very interested in this issue and I wanted to find a way to see if I could prevent that from happening.

In fact, the story of how I began was that on my very first general medicine rotation as a young attending physician, I was—back then—at a hospital in Connecticut. I saw older patients come in the hospital and many of them were cognitively intact and independent at home and they would come in with a variety of chronic illnesses or undergo major surgeries and become very confused during the course of hospitalization, often ending up with bad outcomes: ICU transfer, nursing home stay or even death.

I asked a lot of colleagues and my Chief of Staff why was this happening, and the story that I repeatedly was told was: “This just happens in older adults, don’t worry about it.” But I worried. And so, that’s how I came to create The Hospital Elder Life Program to try to prevent delirium in older adults.

Dr. Carol Peden: Now, your initial work that you published in *The New England Journal of Medicine* in 1999 was done on general medical patients, I believe?

Dr. Sharon K. Inouye: That’s correct.
Dr. Carol Peden: And how did you get to transfer this work? How did you develop it into the surgical arena?

Dr. Sharon K. Inouye: As you said, the original work was on the general medicine service and we developed targeted intervention strategies towards risk factors for delirium, and what happened over the course of time was that the program—after it published in *The New England Journal of Medicine*—many, many, many other hospitals reached out to us wanting to translate it to their hospital, and very early on we were contacted by groups that wanted to try it out in surgical patients.

And so, we began to test it. Some of the interventions had to be translated for the surgical services because not every surgical patient could immediately start to mobilize on day one and many were still NPO on day one [such as GI surgery patients] and so we had to adapt some of the protocols.

The original protocols focused on orientation, trying to help patients maintain orientation throughout hospitalization. We used strategies such as orienting communication, therapeutic activities—which basically means fun, and cognitively stimulating activities that we did at the bedside—early mobility, attending to nutrition and hydration, trying to assure an uninterrupted period for sleep at night, and avoidance of inappropriate medications.

And so, those were the main protocols of the HELP program and they were instituted by a clinical team centering around the nurses, but physicians were involved, also the nurses’ aides and trained volunteers. And we really tried to address the need for meaningful human interaction, communication, socialization, and prevention of functional and cognitive decline.
And now those strategies have been tested, validated and we have published trials in the surgical population, most recently by Dr. Cheryl Chen out of Taiwan in a general surgical population.

Dr. Carol Peden: Yes, and we featured that study on the Perioperative Brain Health website, where we’ve commented on a lot of these resources and people can go there and look at that study because I think it’s a very important one of modifying your program for high-risk surgical patients—and these were in Chen’s paper, these were patients having very major surgery, weren’t they? They were a predicted length of stay of more than six days, so they were very high-risk patients.

Dr. Sharon K. Inouye: That’s correct, very high-risk patients, and the other unique and important thing about her trial is that they didn’t use trained volunteers in her program; they actually used nurses that incorporated the protocols. She used three protocols which were orientation, mobility, and attention to hydration, nutrition and oral care—which was sort of one unified protocol—and it was all incorporated as part of the standard nursing practice.

Dr. Carol Peden: Yes, I think that’s so important because of its translation into the real world, which is really making it happen.

Dr. Sharon K. Inouye: That’s right.

Dr. Carol Peden: So, some people have described the HELP program as tender loving care for surgical patients. What do you think about that?

Dr. Sharon K. Inouye: Well, I think in many ways I agree that HELP really is a way to introduce humanism, the really important aspects of caring, back into hospital care which can sometimes, as you know, Carol, lose perspective in terms of
making sure all of our older adults have had hydration, have had sleep, have had mobility. And so, it really does address that.

But I hope that the TLC, tender loving care title or nomer, doesn’t sort of trivialize the program…

Dr. Carol Peden: Yes, absolutely.

Dr. Sharon K. Inouye: Yes, these things I view as just as essential as IV fluids and antibiotics. These have been documented to reduce the risk of delirium, to reduce the risk of cognitive and functional decline during hospitalization as well as prevent falls, prevent pressure ulcers, prevent a lot of the other complications of hospitalization and surgery in older adults.

So, now, that’s been very well-demonstrated, so we can’t trivialize how important addressing these areas is.

Dr. Carol Peden: I know. I think for the sake of the audience, you might just want to state how much HELP has been shown to reduce perioperative delirium by?

Dr. Sharon K. Inouye: Yes. So in Cheryl Chen’s study, for example, there was over a 50 percent reduction in the rate of delirium. In other studies, in other settings, there have been reductions ranging from 30 to 60 percent in the delirium rate. So, very, very substantial reductions.

For those listening who may be hospital administrators or involved in costs of care, HELP has been documented to reduce length of stay in addition to reducing these postsurgical complications and to save—if you extrapolate nationally—millions of dollars in terms of the postoperative care of surgical patients.
Dr. Carol Peden: And I think it’s worth saying that you have a fantastic website where there are business tools that administrators or people wanting to implement this program can download, and a slide set. And I think the emphasis on the economics that this has is also quite important to drive adoption.

Dr. Sharon K. Inouye: Yes, absolutely. As you say, we’ve developed a lot of materials to help people who are interested in setting up a program.

Dr. Carol Peden: If I’m an anesthesiologist and I’m hearing this podcast and I want to implement a program, where should I start? I mean, I’ve mentioned your website. Do you want to talk a little bit more about that?

Dr. Sharon K. Inouye: Sure. So the best way to start is by registering on our website which is—if you just Google “Hospital Elder Life Program,” you will find it. The URL is hospitalelderlifeprogram.org, all one word, and there is a section on how to start a program; I think it’s under the “About” tab. And then look at the materials. As you said, Carol, there is a package of business tools or start-up tools to help you plan out the program, how you would staff it, how much it would cost, how much ultimately it would save the hospital.

Then once you get a sense of that and there are questions to be answered, we do have a very active online community or Google groups that you can register for right on the website to ask questions. We do regularly—usually several times a week—have questions from new sites.

As programs get implemented and more advanced, they can schedule a visit to a HELP Center of Excellence. We have eight centers in the United States and one in Canada where you can see HELP in action. The sites typically charge a small fee to offset their time to free up their staff to spend a half day with a
site coming to learn about their program. But I know many, many sites have
told me that that was an invaluable way to learn about the program because it
is so unique.

Dr. Carol Peden: That’s amazing, and it is an amazing resource. What key things should
anesthesiologists be thinking about in relation to your program in prevention
of delirium? We’re featuring a number on the website, but I’d like to hear
your thoughts.

Dr. Sharon K. Inouye: So, I think with anesthesiologists, there are a number of areas that are
exceedingly important. I think often anesthesiologists are involved in the
preoperative screening and there can be, as you know, many preventive
strategies put into place even prior to admission to make sure that patients are
in as good shape as possible prior to the hospitalization.

So, educating patients about things to know before they come into the
hospital. There are several educational pages and brochures that are on the
same Hospital Elder Life Program website that are educational modules or
packets of what to know before you come to the hospital, what to bring to the
hospital on the first day, how to communicate with your physicians, how your
family can communicate with physicians and advocate for you, what is
delirium, what are good things to do to prevent delirium. So, some basic
things can be very helpful just to give a heads up to patients about when
they’re there.

And then I think the other thing is to just make sure that everything is as
optimized as possible metabolically in terms of activity, nutrition—the things
that we know can help to build or maximize brain reserve.
If they are on psychoactive medications [i.e., medications with brain effects], it’s very good to think about how those will be managed during the course of the surgery. Sometimes patients are advised to taper off things like sleep medications or anxiety medications, sometimes they’re not; it has to be very individualized. Alcohol use should be addressed, smoking should be addressed, glucose control should be addressed. All these kinds of things I think the anesthesiologist can be critical about addressing in the preoperative setting.

During the perioperative period, obviously during the surgery itself, the anesthesiologist has a huge role in choosing which agents and which medications are going to be used preoperatively and intraoperatively, how monitoring will be done, whether there will be BIS monitoring or not. And those are all areas where there are many studies, as you know, Carol, to address how to optimize these approaches for older patients in the O.R., and you’re much more an expert on that, I’m sure, than me.

But one of the things as an internist that we do ask for and ask for our anesthesia colleagues when someone’s at high risk is to try to minimize anticholinergic medications, for example, or to try to use more short-acting agents where it’s appropriate, and to use non-opioid agents where it’s appropriate. And so, those are sometimes the conversations that we have as we’re trying to optimize perioperative care.

Dr. Carol Peden: Yes, and avoid benzodiazepines, if possible; all those drugs on the Beers Criteria which people can look at [https://www.guidelinecentral.com/summaries/american-geriatrics-society-2015-updated-beers-criteria-for-potentially-inappropriate-medication-use-in-older-adults/#section-420].
Dr. Sharon K. Inouye: Yes.

Dr. Carol Peden: Can I ask you a little bit more, perhaps, about the pathophysiology and how is perioperative delirium related to dementia? And if you’re an older patient and you get delirium, are you at greater risk for dementia?

Dr. Sharon K. Inouye: Yes, and yes. So, delirium and dementia are highly interrelated, and dementia is the leading risk factor for delirium. So, someone who has mild cognitive impairment or unrecognized cognitive impairment is at very high risk for developing delirium, and then on the flip side delirium is also a strong risk factor for subsequent dementia. Work that we’ve done in our group as well as others has shown that nuance, that dementia following delirium may be increased by as much as twelve-fold increased risk which is just huge. And this is new or incident dementia following a delirium.

I think the evidence is stacking that delirium may hasten cognitive decline both in those who don’t have any cognitive decline to begin with, and there’s also evidence that if people have already started on that pathway to decline, that delirium will accelerate it.

You asked, Carol, about the pathophysiology of that and that is not really known; there are a lot of hypotheses, there’s a lot of exploration going on in that area. It seems that there may be inflammatory mechanisms that are contributing, there may be acceleration of neurodegenerative factors, things like apoptosis, increased burden of amyloid, for instance, may be potentially triggered by operative or perioperative factors or by inflammatory cascades that are set off.

So, it’s an area of very active investigation and I think—I feel very excited that we may have some answers in the upcoming years as to what are the
strongest pathophysiologic elements and, even more importantly, what we can do to intervene to prevent the decline.

Dr. Carol Peden: I know, you’re right. It’s such an exciting area of research. Now, you’ve shown that approximately 40 percent of the cases of delirium may be preventable with some of the measures that we’ve talked about. But then 60 percent of cases may not be. So, what would be the practical advice for anesthesiologists who are managing those patients to help minimize the impact of that event?

Dr. Sharon K. Inouye: Yes. This is a really important point that 60 percent may not be preventable totally, but we also have evidence that similar strategies to the HELP program may be able to make the delirium less severe and of shorter duration, and that’s really critical.

I think that to really treat delirium, to really eliminate it from occurring in that remaining 60 percent of patients, we are going to have to understand the pathophysiology and be able to approach patients with medications and other approaches; it might be cognitive reserve enhancement, or it might be anti-inflammatory medications, or it might be sleep agents. I’m not sure. I think it’s going to be a multifactorial approach.

But you were asking for practical advice about how to implement these strategies, how to run a HELP program. So, Carol, to get back to that question for practical advice, our HELP program—including my team and other teams throughout the country and the world—have looked at how you implement and sustain a HELP program successfully long-term.

So, just a few of the learnings that I think might be helpful for your listeners are: it’s very important to gain support from your hospital administration,
from the higher-ups in the organization, and to have effective champions at the high-up levels, people who really know about the program and who are very supportive and who realize how detrimental delirium is.

Then the next challenge is to try to shift organizational culture to really embrace excellence in this area in providing better care for older patients and providing optimal perioperative care and preventing delirium in older adults. And I think that’s happening at many hospitals. I think we witnessed that, Carol, at a conference we recently attended.

Then we want to garner support from influential hospital staff and leaders throughout the organization and, really, interdisciplinary. So you want to have your rehabilitation departments, your pharmacy departments, your nursing departments, your geriatrics departments, multiple other departments—nutrition, chaplaincy, social work, et cetera—all rallying around to help the program and to kind of cheerlead for the program.

It’s always important to adapt to local circumstances. We kind of talked about that with what Cheryl Chen did already to make the program very successful at her hospital. And then it’s very important to document outcomes at your program, even though there’s probably been 30 or more publications about HELP, don’t depend just on those. Those are very useful to show your hospital when you want to start out, but document outcomes at your own hospital and publicize them and make sure the outcomes are the ones that the leaders care about.

So you have to ask them and sometimes patient satisfaction is what they care about at that time, sometimes it’s length of stay and cost, sometimes it’s delirium, sometimes it’s nursing satisfaction and nursing retention. So,
whatever they say is the priority for them, that’s what you really need to focus on.

Dr. Carol Peden: You’re absolutely right. And on the Perioperative Brain Health website we’ve got not only the academic papers, but we’ve also got stories from hospitals in their context about what they’ve done so people can read that and take some practical points. And we’ve also got some quality improvement implementation tips which say exactly what you said: get everybody—all the stakeholders—in the room, get the data, create the burning platform, celebrate success. All those things which are so important in the practical implementation.

Dr. Sharon K. Inouye: That’s very good. The other thing is community support.

Dr. Carol Peden: Yes.

Dr. Sharon K. Inouye: And I hadn’t realized how important that can be, both in the startup of a program, but also there’s a long-time survival of a program, and we were asked by one of our initial funders of the HELP program, when I first started it, to set up a Community Advisory Board.

I was a very young investigator and I didn’t understand why that was important. But they were telling me to do it, so I went out into the community and I enlisted 20 leaders of senior service organizations: Meals on Wheels, the Visiting Nurse Association, the Senior Housing Association, the local geriatric chaplaincy group, the pharmacy that delivered to our older adults in the community, our senior action group.

So, I got them all into a room, and they couldn’t believe that our huge university hospital was reaching out into the community.
And it became such a huge selling point {laughter} for the hospital about the HELP program. They were so excited that we had developed this very strong link to the community and then that Community Advisory Board, they helped our patients stay at home and they—Meals on Wheels prioritized to our patients, the pharmacy prioritized to our patients. So, we just got the best service you can imagine.

Then after our grant expired and we had to come up for permanent hospital funding—or else our program was going to dissolve—the hospital initially wasn’t sure it could meet our budget and there were many other new programs in the pipeline. Our Community Advisory Board started a letter-writing campaign to the hospital board and the hospital president. I had no idea they were going to do that.

But we got our full funding for the program and it was, I think, all due to our Community Advisory Board and the fact that they loved the program and never wanted it to go away…

{Crosstalk}

Dr. Carol Peden: I think that’s an amazing story. I think the fact that the recent summit that you mentioned, the conference in Washington was a joint venture between the ASA, but it was hosted by the AARP. So…

Dr. Sharon K. Inouye: That’s right.

Dr. Carol Peden: …these patient advocate groups are very, very interested in this.

Dr. Sharon K. Inouye: That’s right.
Dr. Carol Peden: We’re already seeing as we’ve publicized the website and the campaign, more and more patients and their families coming in and asking about these types of programs. So, I think it’s very, as you say, it’s very important for hospital leadership to know about this.

Dr. Sharon K. Inouye: That’s right. And I think that kind of grassroots awareness of what we were doing, but also [patients and families] recognized immediately the TLC aspect of the program, exactly what you were saying, sort of the loving care that was being given through this program and they wanted all older adults to have it. Initially, we were only on one unit and we expanded to three units and our Community Advisory Board wanted it to be on every unit at the hospital. They were really helpful to advocate for that.

The last thing that I did want to mention too is that HELP has served as a quality improvement model of care. And, in fact, has led to commendations from JCAHO and for hospitals to achieve Magnet status, and this is something we learned just recently in a follow-up survey that we did with our HELP sites to say, “What benefits has your hospital had from the HELP program?”

Many of them talked about the obvious ones that we’ve already talked about, but we could not believe the number that came back and said, “Well, we got a JCAHO commendation based on our HELP program.” We heard that from like five sites. Another large number of sites said, “Oh, we qualified for Magnet status on the basis of our HELP model.”

And so, in a real way it’s providing a model of excellence, a model of care that hospitals are finding they can utilize to really raise their status in their marketplace and in their field.
That was very exciting for us to learn and we got a lot of other feedback from sites that the HELP program is where they educate their nurses, their medical students, their nursing students, their social work students about elder care. So, many, many ways that we didn’t think about or anticipate, HELP is providing value at the hospitals.

Dr. Carol Peden: That’s so fantastic. So, not only better outcomes for patients—and particularly surgical patients, for our audience—but a happier community, improved hospital outcomes, reduced costs. I mean, for those of you out there who are not doing it, go to the website now, I think, it is the answer.

{Laughter}

Dr. Sharon K. Inouye: Well, I think it provides a real way to better serve older adults in the hospital, and I know we talk about it for delirium prevention, but it really is a way to provide just holistic better care for older adults. And, as you’ve heard, maximize perioperative care for older adults as well.

Dr. Carol Peden: Well, on that note, Dr. Inouye, thank you so much for speaking to us and thank you for your support of the ASA Perioperative Brain Health Initiative Campaign.

Dr. Sharon K. Inouye: Thank you. And I’m delighted to be involved.

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