Medical Xpress

Geriatrician discusses treating trauma in the elderly

August 19 2015, by David Orenstein

One morning five years ago in the parking lot of Rhode Island Hospital, Dr. Michael Ehrlich, chair of orthopaedics in the Alpert Medical School, flagged down Dr. Richard Besdine, a geriatrician and professor of medicine and health services, policy and practice. Ehrlich sought to enlist Besdine's help in improving care for elderly patients with hip fractures because they are highly vulnerable to serious complications and even death after such a trauma.

Together they launched a collaboration in which geriatrician Nadia Mujahid, M.D., assistant professor of medicine, and orthopaedics professors Drs. Chris Born and Roman Hayda, worked together to create a co-management program to improve the care of elderly hip fracture patients. While orthopaedists treated the fracture, the geriatrician managed and tried to prevent dangerous complications, such as delirium, kidney failure, or heart problems.

That work and similar efforts elsewhere around the country have shown very positive results, including fewer deaths, Besdine said. Now Besdine will lead a new effort to disseminate this idea of geriatrics co-management of hip fracture patients to hospitals across the United States. He spoke with David Orenstein about the project, which is funded by the John A. Hartford Foundation and will be administered by the American Geriatrics Society and the Association of Directors of Geriatric Academic Programs.

How does the patient experience with a hip fracture sometimes go awry?

No matter how robust an 80-year-old is, there is substantial restriction in the ability to maintain homeostasis under stress—in other words, most straws can break the camel's back. This applies to maintaining intravascular volume and electrolyte control, and perfusion of key organs like the brain and the kidney.

What happens is this common scenario. An 80-year-old with a hip fracture comes into the hospital, probably has a little bit of cognitive impairment or just normal cognitive aging, and is in a strange environment. She has been sleep-deprived because the hip fracture occurred 12 hours ago and she wasn't promptly discovered. She's in a lot of pain, but in the emergency department they are afraid to give her enough pain medicine because of fear of over-sedation and addiction. So she's in severe pain, sleep-deprived, in a strange environment, and has not had anything to eat or drink for 12 hours. All of these combine to make her delirious. And then her renal function is noted to be impaired and dehydration is detected, but with hydration, she develops heart failure. Next, diuresis provokes renal failure. And after a long hospital stay, she dies. This kind of downward spiral of causality is something geriatricians have written about for decades, and it still can happen.

What's behind the interventions you and others have been studying?

Rhode Island Hospital agreed to fund the net cost of a geriatrician to work side-by-side with the orthopaedic surgeons—not to consult on these very vulnerable elderly patients with hip fractures, but rather to co-manage them—to see them concurrent with the orthopedic surgeons pre- and post-operatively. We geriatricians don't manage the fracture, we try

to help the orthopaedics team manage and try to prevent the complications that are so devastating to elderly patients.

There are about 300,000 hip fractures annually in the United States. The vast majority of them occur in elderly persons. There are a host of associated problems that are common in older adults—not only gait instability and osteoporosis, but also that whole constellation of chronic diseases that afflict older people so commonly: heart failure, cognitive impairment, lung disease, ischemic heart disease, diabetes, and more.

So we developed this program at Rhode Island Hospital, seeing about 200 hip fractures annually with one geriatrician, Dr. Nadia Mujahid, and her mentor Dr. Lynn McNicoll.

We have replicated the principle in three other clinical venues. We do it for elderly patients who have major joint replacement at The Miriam Hospital, for elderly trauma surgery patients at Rhode Island Hospital and, most recently, for elderly colo-rectal and general surgery patients at The Miriam.

How does this help patients?

The outcomes of a pre/post analysis of our intervention are stunning. Mortality is down 70 percent. The proportion of patients going directly home rather than passing through a nursing home following hip fracture care at Rhode Island Hospital has tripled. The length of stay has been shortened by more than two days, which translates not only into a better experience for the patient but also substantial financial savings for the hospital. Infections, mostly due to urinary catheters, have plummeted. The rates of delirium have dropped substantially and patient satisfaction is high.

As geriatricians, we know and dread some common complications that

harm and kill elderly persons in hospitals—falls, delirium, adverse drug events, infections, pressure sores. The initial assessment that's done is not just are they going to have a heart attack in the operating room, but also to identify risk factors for these dreadful events and to intervene to prevent them.

For example, delirium used to be routine in these patients. It extends the stay, it increases the likelihood of going to a nursing home. It increases the likelihood of getting mind-numbing drugs. It increases mortality. Once it happens, management is a nightmare.

The first step in preventing delirium is to optimize the well-being of the person prior to surgery. If they've got a little bit of heart failure and a little bit of diabetes out of control and a little bit of cognitive impairment, you do the things to optimize those conditions. A former student of mine, Sharon Inouye, showed in the *New England Journal of Medicine* that delirium is preventable. It consists of managing fluids and electrolytes, keeping the environment comprehensible, letting people sleep at night, and other simple interventions.

What will you be doing with this new grant?

Wherever data have been collected, the intervention has shown positive results. Reports have come from dozens of sites, but there are more than 5,000 teaching hospitals nationwide. The Hartford Foundation's idea is that disseminating this idea is really urgent and would have a potential major impact.

So the question that Hartford asked us to address is not what is precisely the very best iteration of the intervention, but rather, if the intervention is so great, why isn't everybody doing it? What are the barriers to implementation and how do you overcome them?

Our working hypothesis is that some of these barriers are generic, but many will be specific to the environment. Hartford has challenged us in this first phase to develop a sustainable, break-even enterprise, like a business, that will market and disseminate evidence-based interventions to improve care of older persons with serious advanced chronic illness, beginning with hip fracture co-management by geriatrics and orthopaedics.

This will be the first one out of the box, but if we're successful there are a number of others that will follow.

Has this also affected medical education?

We've had two grants from the Reynolds foundation. One was to educate health professionals, mostly medical students. The second was to have much more of an impact on care by teaching geriatrics principles to many specialties.

We are educating residents in orthopaedic surgery, trauma surgery, and general surgery. It isn't just hip fracture patients they see; they see patients with other kinds of orthopaedic conditions. This is a powerful vehicle for education. When Nadia Mujahid speaks, her orthopaedic residents and faculty colleagues listen because she has demonstrated value working collaboratively with them to get better outcomes.

When we have interns in internal medicine for a mandatory geriatrics month, we send them to round and to work with Nadia in the hip fracture program to see how you apply geriatrics to patients in other domains.

It's not just teaching, it's also getting wider recognition of the wider value of geriatrics.