

In Conversation With... Urmimala Sarkar, MD, MPH

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Editor's note: *Urmimala Sarkar, MD, MPH, is associate professor of medicine at the University of California, San Francisco and the UCSF Center for Vulnerable Populations, and a primary care physician in the Division of General Internal Medicine at San Francisco General Hospital. Her research has focused on ambulatory patient safety, including missed and delayed diagnosis, adverse drug events, and monitoring failures for outpatients with chronic diseases. We spoke with her about patient safety in the outpatient setting.*

Dr. Robert Wachter, Editor, AHRQ WebM&M: Why do you think the safety field began with its focus so much on the hospital?

Urmimala Sarkar: I think the focus on the hospital began because it's more dramatic, more immediate, and more apparent. Patients are under constant observation, and it's very easy to realize that something has gone wrong—the consequences appear much more readily. In the outpatient setting if we're lucky, we get our patients for a 15-minute visit a few times per year, and we don't have any observation in between those visits. It's hard to know about what things are going wrong. So that has led to a lag in focusing on outpatient safety.

RW: Do you think that's starting to change?

US: Yes, many factors have made it easier to get at what's happening between visits. The challenge for outpatient safety is it's very much related to patient behavior, self-management support, and patient understanding; whereas, the field of inpatient safety is much easier to relate to other safety industries like aviation. I don't think that analogy holds as well for outpatient safety, so the methodology, tools, and lens through which we look at it have to be different.

RW: Are there any other differences that make it hazardous to extrapolate things we've learned from the inpatient world to the outpatient world?

US: The penetration of technology has been different. With Meaningful Use, that's changing. But there is a big information gap in outpatient safety because the majority of US physicians are still not using electronic health records, and it's hard to even know what's happening. To some extent we have been looking at

outpatient safety in integrated health systems with robust electronic health records, and we're looking for our keys under the lamppost.

RW: What are the major sources of harm and mistakes in the outpatient arena?

US: Several things. There is a very high burden of adverse drug events in outpatient settings. Our [study](#) looking at data from the National Ambulatory Medical Care Survey showed that 0.5% of all ambulatory visits were related to an adverse drug event. Just to give a sense of proportion, that's more visits than for strep throats—so relatively common. Adverse drug events are complicated by the fact that patients are self-managing their medications. It's very hard to take medication, and the number of medications prescribed to ambulatory patients is going up and up.

Another area that has received more and more attention, rightfully after many years of neglect, is the area of missed and delayed diagnosis. Tejal Gandhi did a [paper](#) back in 2006 about this, but the field has been very slow to gain momentum, mostly because it's hard to study. The whole diagnostic process usually goes on inside the brain of a clinician. The most common cause of closed successful malpractice claims in outpatient settings is missed and delayed diagnosis.

The third key area for outpatient safety is results management, which is incredibly challenging because most of our care is delivered in fragmented systems. Most people still get their primary or outpatient care from small physician practices that are not integrated with the other diagnostic services patients receive, such as imaging or laboratory results. Communication of these results has long been known to be a source of errors and delays in outpatient care. Electronic health records have made these delays more transparent because you can often more readily see when the result first appeared versus when it was acted upon, which was more opaque when all our records were on paper. But we still haven't solved the problem of interoperability, how results make their way from one system into another, and how outpatient physicians act on actionable patient results in a timely fashion. Hardeep Singh did a [study](#) at the VA that looked at results management and found that it's still plagued with problems even when electronic notification is in place.

Even though electronic health records didn't solve this problem, with the transformation of primary care and the development of patient-centered medical homes and team-based care, I actually feel somewhat optimistic that we have a chance to solve it. Ambulatory physicians often do not have it in their workflow to look at results for patients who are not right in front of them. We are still in this model of visit-based care, which doesn't account for results of patients who are under your care but not in front of you. As we move to team-based care and population health management, using registries where you look at whole populations of patients with a disease or condition and examine whether there are gaps in care systematically—that approach will allow us to manage results better.

RW: So you think the gap between putting in an electronic health record and effectively managing results is a people-and-workflow problem—having the right people whose job it is to be following up tests—as opposed to a the-EMRs-are-not-good-enough problem?

US: I would say yes to both of those. I would not want to say that EMRs are good enough for addressing ambulatory patient safety because I don't think they are. They have several shortcomings, but I don't think

that the best EMR in the world could solve the results management problem in the outpatient setting. It's fundamentally a workflow problem. Many studies show that the non-visit workflow is highly significant for primary care physicians. Right now that non-visit workflow is not compensated for the vast majority of primary care physicians.

RW: Talk about the role of patients. What happens to patients when they're out of the office? How much can patients protect themselves from errors and how might patients introduce new kinds of errors?

US: Patients certainly can protect themselves from errors. And many errors are brought to light because patients have noticed that something has gone wrong. We have many examples of that.

In terms of patients introducing errors, this concept is still fairly new to the patient safety literature. As a practicing primary care physician, I recognize that patients can self-manage in a way that ends up causing them harm. We're not blaming the patient, but we're acknowledging that self-management is very difficult. We have not traditionally thought of it as a safety issue if someone takes their insulin and then doesn't eat and becomes hypoglycemic. But to me that's a safety issue. That is harm resulting from their medical care that could have been avoided, which doesn't result from the disease process itself but results from the treatment. I would call that an adverse drug event, and I would not blame the patient. But the patient is giving him- or herself insulin, so we have to acknowledge that we cannot fix that without involving the patient. We have great tools from other fields like health communication that can inform improving the safety of patient self-management. I'm really passionate about taking these approaches from the fields of health literacy and health behavior and applying them to safety.

One example is the [universal medication schedule](#), developed by Michael Wolf and colleagues at Northwestern. It is a set of medication instructions that are much more comprehensible to patients. As an example, the standard instruction to take two pills twice a day is poorly understood by patients. But if you say, "Take two pills in the morning and two pills at bedtime," that is much better understood. And that is one of the universal medication schedule instructions. Implementing the universal medication schedule as the default instructions in an electronic health record would vastly improve patient comprehension of medication instructions.

RW: We're entering an era where the electronic tools we can offer patients are not just the ones in our office, but patients are running around wearing Fitbits, and they're stepping on scales that speak to them and all of that. How does all of this electronic app stuff influence safety?

US: That's a great question. I'm very interested in between-visit interactions with patients; what you are doing is expanding your observation time. In studies where we've used automated telephone self-management and had between-visit contact with people, the more that you contact people the more potential adverse situations will be revealed. This has been shown across a range of technologies across a range of settings. So the challenge is how do you separate the signal from the noise? To me, the goal of between-visit technology vis-à-vis safety is to intervene before harm occurs. Any time you want to intervene before harm occurs, you are trying to make your best estimate of how likely harm is going to be. The challenge is how do you separate a true safety signal, such as a low blood sugar, from a symptom, such as abdominal pain, which a patient may report—it might have an actionable clinical significance or might be

something that can wait. In terms of number of steps and scales that wirelessly upload to your physician, there is a significant technology gap: the algorithms to deal with vast volumes of data. If I have 100 congestive heart failure patients weighing themselves every morning and we're looking for a standard deviation of 2 pounds, the computer has to do that math and present data to someone in the clinic who will be able to act on it, not just as a text message to me or an electronic notification. It creates a workflow problem. So the problem of analyzing the data, making it meaningful, and integrating it into physician workflow are the shortcomings of the self-tracking movement.

RW: At one level, you're describing a data overload for the clinician or the medical home that's trying to deal with now thousands of new signals coming in. You could also go in the other direction. A friend of mine told me the other day that a family member left the hospital and got seven different phone calls from the hospital. Because the hospital is now calling people to see how they're doing, but all different clinics were calling and eventually, you know the first call was terrific and the second call was okay and by the third call they didn't want to pick up. So you can see these electronic connections can become overwhelming.

US: Yes, there have been many electronic interventions focused on patient self-management, and they may remind you to take your medications. And not all patients want to be reminded three times a day to take their medications. People want to be able to decide. For example, "I only forget my pills when I'm at work, so only remind me then." There is a real need for being able to tailor these interventions on the provider side and on the patient side.

RW: So speaking of tailoring, you've done a lot of work in health literacy. If you create materials and interventions that are appropriate for low health literacy patients, are they inappropriate for people of high health literacy? Is there one size fits all here or do we need to tailor it to where patients are in terms of their understanding?

US: I'm going to go out on a limb and say one size fits all here. Rebecca Sudore's [work](#) illustrates this beautifully. She designed a limited health literacy advance directive, and she compared it in a randomized trial to a standard advance directive. Then she asked patients of all literacy levels, "Which advance directive do you prefer?" The vast majority preferred the limited health literacy version. In studies that we have done with the universal medication schedule compared to standard medication instructions across five or six different languages, every single patient prefers information that is delivered to them in the most clear, simple, and comprehensible form.

RW: In the hospital there are significant pressures and drivers that create a business case to invest in safety. You may get visited tomorrow by The Joint Commission. Much of your data is now publicly reported. There's value-based purchasing. What are the drivers like in the ambulatory world and how are they changing?

US: Only a very small proportion of ambulatory clinics is actually accredited by The Joint Commission. If they're physically located at a hospital, that proportion is a little bit higher. But the regulatory accreditation and financial incentives to pursue safety policies have not been there. Safety has been driven from a desire to do the right thing, which as we know makes it strikingly local and not widely disseminated. So there are

opportunities. For example, in California with the Medicaid expansion being all in managed care partnering with payers and trying to mitigate harms, there is an opportunity to align incentives a little bit more to promote safety incentives. I also think ACOs [accountable care organizations] provide a way of aligning across the spectrum of care in such a way that there will be more ability to invest in safety and more prioritization of safety in ambulatory care.

RW: And why is that? If you move from a freestanding ambulatory practice now to now being part of an ACO, why does that change the decision making about whether you'll invest in safety?

US: I think you'd be more tied to the downstream consequences. If there were an ambulatory missed opportunity that led to a subsequent hospitalization that would be something. That would carry a financial penalty in a way that it doesn't now for freestanding clinics.

RW: What are the issues around ambulatory safety in academia that are distinctive?

US: For me there are both pluses and minuses. The great strength of working in an academic clinic and having the learners present is the focus on safety as an academic discipline spills over into clinical practice. So we have our safety curriculum. We have ambulatory morbidity and mortality conference, which is not just for our learners but also for our practicing physicians, nurses, and all clinical staff. And that aspect of the academic environment fosters safety. The challenge with regard to safety in an academic environment is the part-time nature of all the providers and the multiple handoffs that we have in our primary care clinic. So in addition to all of our supervising physicians being only part-time in the clinic, we have our learners coming in and out of clinic, sometimes going a month or more without having the continuity clinic, and that presents a significant challenge to maintaining primary care.

We use a team-based approach. We match our supervising physicians within a team with our resident physicians so there's a shared responsibility and oversight for patients. Nurse practitioners, nurses, and medical assistants are also part of a team, such that a group of clinical staff is available to try to care for patients in as close as we can to a seamless fashion. I won't say we've gotten there but that's the vision.

RW: People talked about the lack of teams in health care as being partly we've never had the organizational model, partly finances, partly because physicians never learned how to be team players. So are they learning that today, and what strategies have you seen to try to teach that effectively?

US: The best person to answer that question would probably be one of the medical assistants or nurses in the clinic. I think that we're getting better at learning to be team players. I hope they think so too. We try to imbue that in our residents, and they are teaching us how to do that well. They shadow the medical assistants. They shadow the nurses when they start in clinic. They shadow patients so they understand the clinic flow and everyone's role. They get feedback about their work from other members of the team. And we try to create opportunities for very simple even social interactions between nursing, medical assistants, clerical staff, and the physicians. That's an important and perhaps overlooked aspect of teamwork: just having a human, social relationship is very helpful.

RW: About 6 or 7 years ago, I [interviewed](#) Brian Sexton for this series. We talked about safety culture. Then we [interviewed](#) him again about a year ago. And he said he wasn't focusing much on safety culture

anymore because people were so burned out that he felt you couldn't even begin to teach about teamwork until you created some level of joy in practice and reengagement. And when we think about burnout, I tend to think about primary care first. How much burnout do you see and how does that influence efforts to try to improve patient safety?

US: I see a lot of burnout. I wish I didn't have to say that because I'm very committed to primary care. But it's an epidemic in primary care. Unless we have some serious workflow reform and primary care transformation, we're not going to fix it. A couple of things that on a very hyper-local level can mitigate burnout are a sense of mission. A big part of what keeps me energized to do primary care in an underserved setting is my sense of mission and patient advocacy. I share that advocacy with the entire team, not just with my physician colleagues but also with the medical assistants, the nurses, and the clerks. A continuously learning environment where you feel like you're being challenged and you're becoming a better doctor every day, that's the other factor that can help you overcome burnout. To the extent that safety can be a shared responsibility among colleagues with a sense of mission and that it can be an academic discipline, which can make you a better doctor. Those are the two ideas that I try to harness when I bring safety to the clinic. In my role as a quality and safety liaison for the medicine clinic, I try to think about how I can bring the idea of safety to our physicians without adding one more thing for them to do.

RW: You mentioned that some lessons from other industries that seem to be at least somewhat useful in the inpatient side didn't translate that well to the ambulatory side. Are there lessons from other industries that do translate very well to the ambulatory side?

US: Yes, two industry analogies are helpful to the ambulatory side. The first one for me is consumer technology. A lot of my patients won't use our Internet-based patient portal when it becomes available because it is not going to be a usable interface for them. But the same patients use Google, they use Facebook, they use the Internet, they have cellphones. When we think about our patient-facing technology, we need to be looking outside of health care to other industries that know how to interface with a very diverse population in a user-friendly way. The other important analogy is with all customer service industries. We really need to work on our patient experience.

RW: Are you hopeful about the future in ambulatory safety?

US: I am. We have a convergence of several forces that are really helpful. Primary care transformation is going to vastly improve patient safety. The focus on value-based care has the potential to very much improve outpatient safety because we're going to see fewer complications of procedures and interventions that never should have happened. The expansion of insurance is going to bring many, many more people into primary care, and we'll be able to intervene on incipient problems in an upstream fashion. I am very optimistic because we're going to be in a much better place because of these. Technology is the fourth new wave in primary care right now. Those forces are going to all collectively improve safety. It's a great time to be in this field.