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Event
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Presenter
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Hi. My name's Julie Considine. I'm the Professor of Nursing at Deakin University in Melbourne, Australia and I hold a joint appointment with Eastern Health, which is one of Victoria's largest health services.

Thank you so much for the opportunity to give this presentation today and I'm so sorry that I can't be there in person, but I hope you're having a great event and we can learn some common things from these conversations. My brief is really to talk about the role of nurses in diagnostic error and mitigating diagnostic error.

My clinical background is emergency nursing so I'm quite passionate about the role of nurses in patient assessment and in patient safety. So I guess before we start just some of my disclosures. I represent the College of Emergency Nursing Australasia on the Australian Resuscitation Council. That's a volunteer position. I also represent Australia and New Zealand on the International Liaison Committee on Resuscitation and I'm the Deputy Editor of the Australasian Emergency Nursing Journal, which will be rebranded shortly to Australasian Emergency Care.

I've no financial conflicts to declare. So I guess when we look at the background to the involvement of nurses in diagnosis. There's certainly been a shift away from using the term diagnosis and using the term health problem or health issue. And I think when you look at the diagnostic process it's a complex, patient-centered, collaborative activity that involves the whole team and involves gathering information and clinical reasoning to determine the goals of care for that particular patient in relation to their major health problems.

Diagnostic error, as we know, is the failure to establish an accurate or a timely explanation of the patient's health problems, or more importantly to communicate that process to the patient. And sometimes I think, you know, as health care professionals we have these conversations amongst ourselves and often the patient is the missing link in the diagnostic process.

When you look at the indicators of high quality care from the Institute of Medicine, I think they're quite

nice because they really, I guess, typify what we're trying to achieve as nurses. We want to provide care that's safe, that's effective, that's patient-centered and respectful of the patient's cultural values and their healthcare goals.

It's timely, nobody likes to wait. It's efficient, and, you know, results in resource use wisely in terms of human resources, equipment, and also financial resources and it's equitable. As nurses, I think we take great pride in providing care that doesn't vary according to patients' personal characteristics like gender or socioeconomic status. Some of the factors that contribute to diagnostic error, you can group them broadly into six major categories.

So patient and family factors. So that might be things like preferences, likes, dislikes, cultural considerations. There's certainly clinician factors. So things like knowledge and experience, educational preparation, stress and fatigue are major issues in terms of diagnostic accuracy and quality of care, and decision biases. Also we can have perceptions and misperceptions of diagnosis.

So diagnosis is actually a dynamic state and sometimes I think when we view diagnosis as a static state that can be the beginning of our undoing. Diagnosis have the potential for evolution and I think one of the really big issues is that misdiagnosis is viewed as negative rather than as a consequence of evolution of the patient's healthcare status.

There are certainly many system factors and I think these are common the world over. Time pressure, interruptions, competing priorities, and that tension tension between compliance and safety and quality. And certainly, when we look at diagnosis tests, there are limitations to many of our tests in terms of sensitivity and specificity. And we often are conflicted when we get a test result that doesn't quite match the patient's clinical status.

So the Improving Diagnosis in Healthcare report from the Institute of Medicine is based on three central tenants. That diagnostic error is certainly an underappreciated cause of harm in healthcare, that patients are absolutely central to the solution, and that diagnosis is a collaborative effort. And it's pleasing to see that they go on to say that nurses are often not recognized as collaborators in the diagnostic process, and I think that's important given that we are the healthcare professionals with a bedside presence 24 hours a day, 7 days a week.

There's no other professional group that has the level of direct patient care contact that we do as nurses. I think the other pleasing thing that this report acknowledges is nurses' critical role in ensuring that communication, coordination of care, patient education, monitoring, and surveillance are essential to nurses' roles and to patient safety.

However, when I look at their conceptual model nurses are again absent from that model. So it was contentious to me because it refers to physicians, advance practice nurses, and physician assistants as diagnosticians, and there's no mention of nurse practitioners or nurses in general in that process.

So I don't actually agree with those statements and I firmly hold the view that nurses should, can, and do diagnose. So I'm going to tell you why I hold those views in the slides of follow. So nurses are definitely the largest component of the healthcare workforce. We're also the most expensive. Like I said before, we have more direct care presence than any other professional group in healthcare and we're responsible for

the structures and outcomes of healthcare 24 hours a day, 7 days a week.

We have key patient safety responsibilities. Surveillance, which is the accurate measurement and interpretation of clinical data, data driven decision making, symptom management, and prevention of complications and adverse events. I'd also like to highlight that surveillance is quite different to observation and I think nurses actually surveil, we don't just observe.

We are constantly taking in data, interpreting data, and making care decisions based on that data. Not just simply observing what's going on for the patient. So if you look at the evidence, healthcare is absolutely a team sport but we know patients are safer when nurses have appropriate nursing workloads and it seems in the literature at the moment that six is about the right number.

We know that patients are safer when nurses are well educated and the more degree prepared nurses you have in your workforce the better are patient outcomes. We know patients are safer when there's effective inter-professional relationships and when there's appropriate skill mix. So we know that if you start reducing the number of registered nurses in the nursing workforce there's increased length of stay, pain management is worse, there's an increase in infections, falls, and medication errors.

So there's pretty clear evidence around all of this and we've known this for about two decades. So nurses and diagnosis. I guess the traditional notion of diagnosis is that it's a medical activity, that it's based on the diagnosis of a specific condition or illness, it's based in clinical, biochemical, and radiological criteria, and while it was traditionally seen the domain of medicine it's now really seen much more as a collaborative activity and a collaborative endeavor.

But I want to put it to you that nurses diagnose different things. So as an emergency nurse I can listen to a chest, look at a chest x-ray, and tell you that patient has a pneumothroax. Or I can read an ECG and tell you that patient's having a STEMI. But I think where nursing is quite unique is we diagnose patients' safety states. So and by that I mean deterioration, wellness, and recovery.

And sometimes even dying. So these states don't fit the traditional notion of a diagnosis and they're both processes and outcomes at the same time, but this is what we do as nurses. And the way we do that is three-fold. We look at the indicators of deterioration and those indicators can be objective, such as vital sign abnormalities, or they can be subjective, such as a change in patient behavior or a new healthcare issue.

We diagnose deviation and that's largely deviation from what we're expecting as the trajectory of care. So we know that on day three if a patient who's had a total hip replacement's not out of bed, something's not right with that patient. We know that when pain from a lower leg fracture is not relieved by the normal doses of analgesic medications that that's not normal.

So we start thinking beyond that diagnosis and looking for things like compartment syndrome. We also diagnose risk. We're constantly assessing risk as nurses. Risk of falls, pressure injuries, infections, delirium, clinical deterioration, and we also actively take measures to mitigate those risks.

So I think all of those diagnoses should be underpinned by patient and family preferences and their values. But I think as nurses this is the diagnostic domain that we're really used to, but I think is largely

invisible in the literature around diagnostic error. So moving onto nurses and diagnostic error, there's a little bit of evidence but it's certainly an emerging field.

There are some specific studies of nurses' experience of medical error but there's not much specifically related to diagnostic error, although some of the medical errors will be diagnostic in nature. So I thought I'd give you a snapshot of some of these studies. There's a really nice adaptation of the Eindhoven model of error and recovery by Elizabeth Henneman and her colleagues, and they talk about nurses as being part of the defense.

And they're in the middle of the model, which I think is quite nice. And if that defense is good, the patient will not experience an adverse outcome. So when we talk about error recovery, there are three distinct stages in the nursing literature. They talk about nurses identifying, disrupting, and correcting errors. And I think that is quite a nice model.

In this study of error recovery by nurses in an intensive care unit environment, it's estimated that nurses recovered about 18,000 errors in a 12-month period. Now that's enormous in a highly vulnerable group of patients. As you can see from the list on your right, those errors are diagnostic related so things like symptom mismanagement, absent or incomplete assessment, incorrect interpretation of data, and test delays.

So nurses clearly have a key role in mitigating the risk of diagnostic error in these patient groups. This is a study of error in medical and surgical wards, and it's estimated in this study that nurses recover in the order of 13,000 errors per year. This study is really interesting because it looked at nurse characteristics and error recovery, and it's interesting that error recovery was increased when nurses were experts, when they were well educated, and when they had reasonable workloads.

So that matches all of the evidence that I showed you a couple of slides before. Here's an example from my clinical area, the emergency department, and this was a qualitative study that looked at how nurses recovered error. And it showed that there were key themes in error identification, disruption, and correction.

And, again, clinically, I think we've all probably done many of these things in all sorts of clinical practice contexts. But I think the major themes around identifying errors were surveillance, anticipation, and experiential knowledge. The themes around disruption of error were patient advocacy, clarification, and creations of delays. And the error correction strategies used by these nurses were assembling a team and involving clear clinical leadership.

So coming back to this model, let's talk about diagnostic error identification. So when you look at the literature about the strategies that nurses use to identify diagnostic error, there are three main themes.

The first theme is about knowing. So knowing the patient and the family, knowing the clinical team, knowing the environment and the organization, and like I said before, knowing the expected clinical course. Knowing the patient's expected recovery of care is a really important mechanism that nurses use to identify when things are going wrong.

The second issue was surveillance, and this was really purposeful and ongoing surveillance. And in this

model, they talked about surveillance being related to the acquisition, interpretation, and synthesis of data and then using that for clinical decision making. So like I said before, it was beyond the simple monitoring or observation of a patient's condition.

And the third thing was questioning, and nurses, when they identify what they think is an error, the first person they question is themselves. Which I'm sure you all know. But they talked about questioning the patient and family, questioning the team, talking to colleagues, and we know that error detections increase when there are positive working environments, positive relationships between clinicians, highly engaged nursing workforce, and when nurses are well supported by management with a strong safety culture.

We know that error detection by nurses is reduced when there's task stressors. So things like frequent interruptions, unreasonable time pressures, performance constraints, and task uncertainty also impacts on nurses' ability to identify diagnostic error. So moving on to disrupting diagnostic error, I love this term and I love the thought of nurses as disruptors.

I think it's the rebellious emergency nursing side coming out in me, but, you know, nurses certainly are a disruptive force in healthcare. I'd like to draw your attention to disruptive innovations, which were first coined in the late 1990s by Clayton Christensen and he defined innovation that creates a new market by applying a different set of values which ultimately overtakes an existing market as a disruptive innovation.

So, certainly, in my home country of Australia, things like Uber have been a very disruptive innovation to our taxi industry, for example. And disruptive innovations are often described as cheaper, simpler, and more convenient products that start by meeting the needs of consumers. So in this case, meeting the needs of our patients.

Disruptive innovations are also the opposite to sustaining innovations and I think one of the core values of nurses and nursing is that we constantly evolve and change our scope of practice and our view of the world to meet the needs of the patients and communities that we serve. So disruptive innovation is often used to describe technology. So things like smartphones and Walkmans, but there's disruptive innovations in every industry.

Another example is the evolution of defibrillators. If you look at the first defibrillators they were enormous, they were on wheels, they had to be pushed by a team of people around the hospital. If you look at modern day defibrillators, they weigh less than a kilo and you can just swing them over your shoulder and go where you need to go. So if we consider patients as our consumers, I'd like to pose the notion that nurses may be an example of a disruptive innovation.

When I reflect back on my career, and I like to think I'm not that old, but certainly, I was hospital trained. You know, I got around in a starched apron and a red cape, and in those days nurses were very reticent to question the status quo. It wasn't the done thing to question nursing leadership or the medical staff.

However, when I think about those days there were also pockets of very clear nursing leadership and I've worked with some amazing charge nurses or unit managers who really ruled their wards with an

iron fist. And the standard of patient care was just exemplary. But there were also pockets of less than optimal inter-professional relationships and I think for young nurses to question anything that was going wrong was really to stick your neck out in those days.

Patients were regarded as the passive recipients of healthcare and pretty much did what we told them to, and the authority gradients and the hierarchies were alive and well and very, very strong. As time went on and nursing education changed, and the quality and safety gathered momentum, there's been significant cultural shifts in healthcare which are patient-centered.

We're looking at engaging patients and families much more in their care and care processes, we have much better team work and communication, and we have safety and quality as the drivers of change. So the notion of healthcare as a system in which patients and healthcare professionals all have a role is much, much stronger than back in the days when I certainly started nursing.

Now, I'm not saying that all nurses need a PhD, but we do know from the evidence that nurses, when they're well educated, have provided quality of care that's superior and patients do better and patients are safer. So I think that's a system that we should all be striving to support, and I know that I'm preaching to the converted talking to this audience. So one of the very well-known ways that nurses disrupt diagnostic error is through collaboration and clear communication.

Certainly, at Deakin University I teach in our post-graduate emergency and critical care courses, and I also teach in our Master of Nursing Practice/Nurse Practitioner course. We teach and assist teamwork and communication in all of our post-graduate emergency and critical care courses as those students work at the pointy end of healthcare and are caring for some of the most vulnerable patients within the systems in which we work.

Some of you may recognize this. We use the PACE model to teach effective communication and that's really about graded assertiveness, and it's about advocating for patients while maintaining professional relationships which are really important to patient safety. PACE has also been taught in many medical education programs, so it's not just the domain of nursing but it's actually a really useful model and what I like about PACE is that it puts the patient at the center of the conversation, which is exactly where they should be.

As we saw earlier, the literature around graded assertiveness can often be framed as offering assistance or clarification or interruption. And there's certainly some of the strategies that we use in this framework. The other thing we teach is not only how to PACE other people but how to recognize when you're being PACEd yourself.

And we view that as a positive event because you would hate to think that your colleagues would stand by and not say anything if you're about to make an error that put a patient's safety in jeopardy. So we really look at the PACE process as a positive event and that's really centered on patient safety. Interesting there's not a lot of literature about how nurses correct error, which is phenomenal, really, when you think about it, and particularly diagnostic error.

But there are a few themes that are emerging and coming through in the literature. The first one is tenacity and perseverance, and really if you've been on the receiving end of a nurse whose got a mission

then you'll know that that's really common in healthcare. But the persistence is not to deliberately annoy our colleagues. It's driven by real concern for the patient and a need to resolve whether the error that you're perceiving is occurring is real or not.

When you're on the end of multiple calls from nurses then you really need to give that some credence and pay attention to what they're saying, because the odds are that there is an error that's very real. Another theme that comes up often in the literature is this theme of physical presence and nurses, I think, when engaged in error recovery prefer face to face communication.

Nurses, we're a very verbal tribe. We like to talk and in case you haven't noticed, this is not just the case in error recovery. It's how we just do business every day. I think confirming or reviewing the plan of care is also really important for nurses for a few reasons. The first thing is that we need to know what's the expected trajectory of care because we need to have a frame of reference for when the patient's deviating from that, and that's actually really important to nursing practice.

Second, the plan of care's really important particularly when nurses are heading into times when medical staff are less available, such as overnight or out of hours as it may change your surveillance strategies and it may change your threshold for escalation of care. And the final themeabout error recovery in nurses is collaboration, and again, I don't think this is a surprise to any of us in the room.

But nurses are very good at offering alternatives and getting team members together to have a conversation, and often there are very strong undercurrents to those conversations but, you know, nurses are very good at coordinating the team and getting the team around the patient. So it takes a team to keep patients safe and avenge diagnostic error, and I think all members of the team have a specific skill set, as you can see from this Avengers slide.

However, it's the collective that wields the power and I think, you know, there are always room for new team members, but the more skills we can harness the safer our patients can be. So thanks very much for the invitation to speak and, again, I hope your meeting is as fabulous as you are.

Thank you.