Supplemental File 2: Quotes and observations associated with each HRO principle

HRO Principle	Representative quotes and observations
Preoccupation with failure	
Identifying errors and contributing factors to prevent future failures.	I think that the Caring Safely, recognizing small risks and just the little things like [Verification and Resolution tool], and things like that. I think even the little risks that have been brought forward to my attention, I hadn't considered them, so I think Caring Safely has certainly brought slight preoccupation with failure. (42, Pharmacist) With Caring Safely there is more of a recognition that there are mistakes that are made. We're human, we make mistakes, and so shifting to just the fact that it was so pushed in terms of doing the training. There was just so much buzz about Caring Safely that I think it just brought to light that, yes, mistakes are made, we need to figure out how to prevent mistakes, and then how to address medical errors, which I don't think was quite here before, the full initiative, like, just by means of exposure to even the title alone just brought more awareness to that. (71, Social worker) The recognition when someone says "I have a concern" is a little bit different. One of the staff physicians just took Error Prevention last week and she came up to me at the end of the week and she said, I understand now why everybody is saying to me I have a concern. Now I actually have to pay attention. That's why everybody is saying that. That's true. That is why everybody is saying that, because they're concerned, and, yes, you should pay attention. I think it's getting there. (17, Quality Improvement and Patient Safety (QIPS) staff)
Insufficient effort, investment, and support to redress past errors to prevent future errors.	Right now, we're having so many issues with our pumps. They're shutting down. We have brought this to our executives for the last three years and because of budgeting we're just now in the conversations, three years later, about replacing the pumps…We still have our patients put on pumps with really critical medications like Epinephrine, Dopamine, things like that, that are going to life-sustaining medications…So, are we managing those unexpected things to happen? Are we doing a good job of it? No, because we're not preoccupied, because it is going to fail, and we're not preoccupied without the fact that this is going to actually result in an event that is going to be either really bad for the patient. (74, QIPS Staff) During a unit safety meeting there is discussion about an event where a patient had a missed treatment and then needed to receive another treatment with sedation. There is discussion that this event was not classified as a serious safety event as it did not meet the criteria. One person commented that their concern was less about the decision about the classification and more that they do not have enough organizational support to implement the recommendations which lands on the local units. (Observation 36).
Variation in exposure and uptake across professions.	During a unit quality meeting discussing the safety reports and good catches the [nurse practitioner] asks if the good catches come mostly from nursing or are other professions becoming involved in this. The [quality improvement] lead answers that it continues to be very nursing heavy, but there are some from pharmacy as they tend to catch a lot of medication errors through reconciliation. (Observation 22) The respiratory therapists, they are very similar to nursing in the [critical care unit] in how they use [Error Prevention tools] and talk about it. They don't have any safety coaches yet in the respiratory therapist group, we're still building our safety

	coach team, and we also don't have any physicians yet as safety coaches. So, that will take it up a next layer. (34, Nurse) The safety coaches, I haven't had much to do with the safety coaches because we practice within the medical realm as the nurse practitioner. I know the safety coaches. They're on the unit and they are more nursing focused. So even though I am a nurse practitioner my role is more in the medical realm. The safety coaches were more for the frontline nurses. So, we didn't have a lot of interface, I don't have a lot of interface with the safety coaches but I am aware of their presence and I am aware of what they're modelling in the unit for the frontline nurses. (39, Nurse)
(Over) preoccupation with failure.	I don't think anyone wants to be preoccupied with failure, it just sounds negative. I would rather frame it in a positive to say, like, a conscious…Do you want people to be consciously thinking about it? You want it in the forefront of their mind, so a very deliberate focus on success or something. (71, Social worker) Everybody is worried about failure, but it is very hard when you have these random events in very different patient settings and operations to try to come up with something that correlates with what went wrong. So, people are definitely preoccupied with it, but it almost makes you more crazy than leading to an answer. (65, Medical Trainee)
Reluctance to simplify interpretations	
Organizational and peer support for different perspectives to increase awareness of problems and potential solutions.	We have two safety coaches in the office, they'll be like, oh, that's [using the Assertion Tool], good job, just talking. Sometimes it's joking too, but then you also think, oh, what do you think about this situation? This is my concern. How should I bring this forward? We are talking more about safety because I think also, we have acknowledged that this is how we get some changes made too. (30, Occupational therapist) During a safety coach meeting the quality and safety leads share examples of 'good catches'. One of them is an instance of a case in the [critical care unit] where the patient was being transferred to the operating room. The anesthesiologist noticed at handover that not everyone was present so said 'let's wait a few minutes for everyone to be here for handover', recognizing the importance of different perspectives to increase awareness of situation. (Observation 10)
Lack of safety to speak up and challenge assumptions.	I think the problem with some of the principles as it is, I'm not sure we yet have a culture, at least in surgery, where people really feel in power to [speak up]. You know, if you have a climate that is hostile towards speaking up. If it's not a culture that embraces people questioning things, people won't. So, it's that simple. (57, Physician) I think that there's been more of a push to bring everyone to the table. But sometimes, I think, as a bedside nurse, you don't feel this is, like, your perspective is being shared. It's very hard to get bedside nurse's perspective just based on shift work and being able to get away from the bedside. (36, QIPS Staff)
Sensitivity to operations	
Senior leaders insufficient understanding of demands at point of care.	I think it's getting better in that we're seeing more [vice presidents] come to the units, and they've been doing some shadowing off and on recently. But I do still feel like, sometimes, and no fault of their own, but they're just so far removed and so high up…And things for nurses to remember, and our kids are getting more acute, and we're getting busier, and our census is trending up. So, we're stretched already and people are stressed and adding those things on, it might look like a good time

	on paper, or it might look like a good process on paper, but actually taking it to the frontline and the people that are going to have to do it, it's not always as easy as it might seem on paper. (19, QIPS Staff)
Challenges of consistently maintaining awareness and alertness to moment-to-moment changes.	During a safety coach meeting on a medical specialty unit, a patient safety staff member is doing a presentation about the [Mindfulness tool]. A slide listing all of the potential conditions that should lead to people using [Mindfulness tool] is shown to the group. Conditions listed include fatigue, safety critical process, time pressure, something new or unfamiliar or distracted. One of the unit managers notes that these conditions are so common for nurses (i.e., there is almost always time pressure and distractions and there are so many different [medication] orders, that they often have to give new medications) that if frontline nurses are expected to do [Mindfulness tool] in these conditions they would always be using [Mindfulness tool]. There was no response from anyone else in the meeting about this observation and the conversation moved onto discussing more reasons why staff may not use [Mindfulness tool]. (Observation 22) I would say we're probably still working on sensitivity to operations. There would be some people that would definitely see that, and other people that very much just are looking at what you're doing day to day, just because it … sometimes it is just making it through that day. Things have been very busy, and acuity is high. (33, Nurse)
Commitment to resilience	
Focus on personal resilience.	I think it's like there's a lot of talk about resiliency. In [medical unit] if there have been situations which have been difficult, unexpected, there's always a debriefing and always other people are brought in to discuss it. We have a chance to talk. And so I do feel like there is that kind of mentor-ism, especially in [medical unit]. Resilience is a big thing. (42, Pharmacist) So, we've had other programs being introduced since Caring Safely. We have a really unbelievable Peer Support program, which I think has been just amazing really to have that kind of immediate support for people who are going through stress or crisis, maybe a second victim to an error. So, really paying attention to how clinicians are affected, or providers are affected when errors do happen, or just realizing that people are very stressed and traumatized by the continuous stress of just the complexity of the care. (76, Leader)
Emphasis on an individualized approach to resilience rather than a collective or system-oriented approach.	But the unexpected, we don't … for instance, we don't staff for unexpected volumes. We staff for what our previous year had showed we should staff for. We go back. We don't staff for, things like that, we won't staff for if a code orange were to happen. We can't. Financially we can't. There's a lot of … we couldn't do it. It wouldn't be possible. (74, QIPS Staff) If I called any of my colleagues and said, bad stuff is happening, I cannot handle this on my own, I need you to come, I have no doubt in my mind that they would come. But it is all part of that paradigm of the way you solve this is by asking more, and more, and more of people. (47, Physician)
Deference to expertise	
Expertise equated with years of experience and organization position.	Honestly if I run into a problem I run outside and try to find someone who I know wasn't hired with me or after me, because they have more experience and they have probably seen it…If something arises that I haven't seen before I just find someone who has been here longer. (54, Nurse)

	It's not simply a case of someone that has been here 25 years, they may not be the expert. And I think sometimes we gravitate toward experience as qualifying one as an expert. (72, Leader) I'll take daily safety brief as an example. It's very small handful of people that are on that call. It's supposed to go up to that one person's director on call to share the information…what is going to happen at the hospital today and what to anticipate in the hospital today. But I think personally, it shouldn't…they're not getting to the actual safety issues...Having managers and local managers or even charge nurses talking about…I anticipate that this one patient is going to be very challenging or I anticipate that this one, something is going to actually impact our hospital today. Those type of things are supposed to trickle up to director on call. I don't know how often they do...They have the in-depth knowledge of what's happening whereas we don't include and involve those folks. (74, QIPS Staff)
Examples of navigating formal authority and hierarchy.	The benefit of the chain of command is when things get hot, you go up your chain of command and then back down. That's not to say there isn't ongoing communication, but just use that chain of command to your benefit so you're talking to somebody who has had some experience likely and will get what your issues are who can either reassure you or redirect, and then bring in some help so those are my two. (51, Physician) We'll get a consult service, for example, they make a recommendation, we don't agree with them. Like, our new chief was like, guys, it's a recommendation, we don't have to follow it. That is like, oh my god, but we'll make them angry. We'll wake the beast. That's not the way medicine works. If you're asking for an opinion, it's an opinion, but you can choose to do something differently. And I don't think we do that here. I think that's changing… (62, Dietitian)