

## Commentary

# Improving within-team communication to reduce the risk of medical errors

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Medical error is widespread in both human<sup>1</sup> and veterinary medicine,<sup>2-4</sup> although the latter is much less studied. Much of this error is attributable to poor communication, either between the veterinarian-physician and client-patient or within the medical team. This commentary focuses on the issues of within-team communication.

### Handoffs

Within-team communication failures often occur during shift changes or transfers of case responsibility. In fact, an Institute of Medicine 2001 report indicates that inadequate handoffs are “where safety often fails first.”<sup>5</sup> As a result, there has been great interest within the human medical field in developing systems to optimize communication during handoffs.

One such system, SBAR, an acronym for “situation, background, assessment, recommendation,” has gained widespread use in hospitals across the US.<sup>6</sup> In one hospital that implemented SBAR, adverse events and adverse drug events fell, respec-

tively, from 90 to 40 events/1,000 patient-days and from 30 to 18 events/1,000 patient-days.<sup>6</sup> While SBAR can be an effective mnemonic system for ensuring adequate handoffs, other systems have been developed that are better suited for conveying more complex information about patients. One of these systems, I-PASS, has risen above the rest by incorporating additional complexity without becoming too unwieldy to use.<sup>6</sup> I-PASS stands for the following: I = illness severity, P = patient summary, A = action list, S = situation awareness and contingency planning, and S = synthesis by receiver (**Table 1**).

Originally a tool for improving handoffs between pediatrics residents, I-PASS has been implemented across specialties in a number of US hospitals. I-PASS implementation has been shown to decrease medical error rates while at the same time not having any negative effect on resident workflow.<sup>7,8</sup> A sample I-PASS handoff is shown below (**Table 2**).

While medical errors at most veterinary referral hospitals have not been quantified, there are often a significant number of patient handoffs oc-

**Table 1**—Elements of I-PASS mnemonic for handoffs, adapted for veterinary use from Starmer et al.<sup>6</sup>

<b>I</b>	<b>Illness severity</b>	• Stable, “watcher,” unstable
<b>P</b>	<b>Patient summary</b>	• Summary statement • Events leading up to admission • Clinical course during hospitalization • Ongoing assessment • Plan
<b>A</b>	<b>Action list</b>	• To do list • Timeline and ownership
<b>S</b>	<b>Situation awareness and contingency planning</b>	• Know what is going on • Plan for what might happen
<b>S</b>	<b>Synthesis by receiver</b>	• Receiver summarizes what was heard • Asks questions • Restates key action/to-do items

**Table 2**—Sample verbal handoff using I-PASS® mnemonic, adapted for veterinary use from Starmer et al.<sup>6</sup>

Sample verbal handoff		
<b>I</b>	<b>Illness severity</b>	“This is our most critical patient. He has been severely azotemic and hypertensive throughout hospitalization. He’s a yellow code.”
<b>P</b>	<b>Patient summary</b>	“Arthur is a 3-year-old castrated male rat terrier who presented 2 days ago, following one day of vomiting and anorexia. Initial bloodwork showed moderate anemia and marked azotemia, but no other abnormalities. Urinalysis showed isosthenuria and proteinuria, but no bacteria nor significant numbers of white cells, making an ascending pyelonephritis less likely. His 4Dx was negative, but we’ve sent off a full tick panel as well as leptospirosis titers. He is currently on ampicillin-sulbactam, doxycycline, and maropitant. Doses are in his treatments, and all meds have been scripted through the night.”
<b>A</b>	<b>Action list</b>	“I have a recheck packed cell volume/total solids scheduled for 2 AM.”
<b>S</b>	<b>Situation awareness and contingency planning</b>	“If his respiratory rate is persistently > 40 beats/min or you otherwise suspect fluid overload, reduce fluid rate from 80 to 40 mL/kg/d (ie, 33 to 17 mL/h). If PCV drops and he’s clinical for his anemia, we have owner permission for a packed RBC transfusion.”
<b>S</b>	<b>Synthesis by receiver</b>	“Okay, Arthur is severely azotemic and hypertensive. You want me to monitor for fluid overload. If fluid overloaded, I’ll reduce his fluid rate by at least 50%. If he becomes clinical for his anemia, I’ll transfuse him with packed RBCs. If systolic blood pressure exceeds 200 mm Hg at any point during the night, do you want me to give amlodipine? If so, what dose?”

curing every day. Every night, a dozen or so doctors might entrust their patients to a single overnight doctor. At busy hospitals, this can mean that the overnight doctor is responsible for over 30 inpatients and overseeing the ER. In addition, overnight doctors are expected to appropriately transfer new patients and verbally round the incoming ICU team on all patients staying within service. The additional strain on hospital caseload and understaffing due to the COVID-19 pandemic have made these overnight shifts even more challenging.

In hospitals with so many patients, the role of the overnight doctor may not be to set a course by making treatment plans for other doctors’ patients. Instead, the aim is, at a minimum, to keep the hospital afloat until the day shift arrives. To do this, overnight doctors have three key responsibilities to inpatients. The first is to carry out the prescribed treatment plans of the patient’s primary doctor. The second is to reevaluate patients, critical patients as scheduled, and noncritical patients with status changes. The third is to respond to medical emergencies and status changes such as respiratory crises and seizures.

While handoffs via unstructured verbal rounding can work somewhat effectively, there is frequently both extraneous and missing information. Most importantly, the “situation awareness and contingency planning” element of I-PASS is frequently lacking when transferring responsibility of patients to the overnight doctor. Call parameters can be uninformative (eg, animal has been outside of call parameters during the entire hospitalization). Equally difficult is when call parameters are informative, but there is no contingency plan in place. While overnight doctors are qualified to make these decisions, a lack of contingency plans places unnecessary cognitive burdens on them to deal with readily foreseeable problems. These decisions frequently involve sedation protocols for anxious patients, changes in fluid therapy, and next steps for refractory hypertension or hyperglycemia.

In some academic veterinary hospitals, daytime clinicians are responsible for their patient’s treatment plan overnight, so setting reasonable call parameters and contingency plans is of paramount importance. When this doesn’t happen, the likelihood of medical errors, of both commission and omission, increases.

Implementing I-PASS or another similar handoff system, with both a written and verbal component, can likely result in a better quality of patient care. Putting such a system into place would require hospital-wide training; however, the cost of this training may be offset by a reduction in medical errors. At the individual level, the I-PASS system would force young veterinarians to think about both what may happen over the next 12 hours and how they would respond to those contingencies and provide them with a formal structure to organize their thoughts. While potentially irritating, this exercise would almost certainly result in better clinicians.

## Consult Courtesy and Psychological Safety

In addition to suboptimal handoffs, communications between consulting services and the primary care service (ie, the emergency service or general practice) can suffer from a lack of trust, courtesy, or both. This has been noted in the human medical field, where different services can take on vastly different identities, or specialty silos.<sup>9,10</sup> These different identities can lead to consulting services believing they are superior to others, they are correct, and others have varying degrees of incompetency.<sup>9,10</sup> These beliefs, conscious or unconscious, can result in communications marred by condescension.<sup>9-11</sup>

Importantly, strained communications rarely change whether or not a consult or a surgery occurs.<sup>11</sup> Thus, it is important for consulting veterinarians to trust that they would not have been called if not for a legitimate concern about the patient.<sup>11</sup> By

reframing in this way, consulting clinicians can become better teammates, as it is no longer a matter of *our* service versus *their* service but rather what is best for the patient. Emergency veterinarians, for their part, should call for emergency consults judiciously only when they feel treatment delay will result in significantly worse outcomes.<sup>11</sup> When emergency veterinarians do call for emergency consults, they should also have as much pertinent clinical and diagnostic information available as is feasible.<sup>11</sup>

Related to the specialty silos of different consulting services is the second-guessing of primary care services. Occasionally, a consulting clinician will perform a consult or surgery and follow up with the primary veterinarian to the effect of “this could have waited until the morning.” A corollary to that response is “we should have been called about this sooner.” Both responses are riddled with hindsight and outcome bias and fail to consider the difficulties of decision-making in light of uncertainty.<sup>12</sup> Beyond that, the first response may even lead to inappropriate hesitancy in calling for future consults, which could result in patient harm. Second-guessing regarding the number and appropriateness of transferred patients is similarly prevalent.

To combat these issues of specialty siloing, it is essential to build a team-based approach to medicine. One way to do that is by cultivating psychological safety (PS).<sup>13</sup> “Psychological safety refers to the degree to which individuals perceive their work environment as supportive of interpersonally risky behavior, such as asking questions, seeking help, reporting mistakes, raising concerns, or offering suggestions.”<sup>13</sup> In institutions with a high degree of PS, individuals feel comfortable doing those things without being seen as ignorant or incompetent. Thus, cultivating PS is especially important for hospitals with either trainees or recent graduates. High degrees of PS should be the norm both among veterinarians and at all levels of veterinary staff, from students to technicians and assistants, as it has been shown that human patients treated in settings with low PS often experience adverse events.<sup>13</sup> One reason for this is that nurses were less likely to speak up about potential medication errors in low PS settings. One predictor of PS is leader inclusiveness or “the extent to which leaders, such as physicians or nurse managers, sought and appreciated others’ input, made themselves available, and displayed fallibility.”<sup>13</sup> In institutions with this kind of empowering leadership, not only is psychological safety high, but so too are team learning and performance.<sup>13</sup>

## Conclusions

It is widely recognized in both human and veterinary medicine that within-team communication issues are at the root of many medical errors.<sup>1-4</sup> In this commentary, we suggest implementing I-PASS or other formal written and verbal handoff systems. By doing so, we believe we can reduce the risk of medical errors, especially during overnight care when a

large number of patients are under the supervision of a single doctor, and improve the quality of veterinary training by requiring doctors and students to think about the clinical progression of their patients and how they might respond to foreseeable problems.

In this commentary, we also suggest the need to eliminate the specialty siloing that exists among different services. Such views lead to reduced PS and, in turn, poorer performance of the team. Instead, by reframing consults from a “this service wants us to do X” mentality to that of patient-centered team approach, we can improve outcomes. Accordingly, attending veterinarians can model this behavior for their house officers and younger clinicians by seeking and appreciating others’ input, happily making themselves available, and displaying fallibility.

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