**SBAR ‘Flattens the Hierarchy’ Among Caregivers**

Wm. LeRoy Heinrichs, MD, PhD, Eric Bauman, RN and Parvati Dev, PhD

*Chief Medical Officer*, *Consultant* and *CEO*, *Innovation in Learning, Inc.*, 12600 Roble Ladera, Los Altos Hills, CA, 94022

wlh@innovationinlearning.com

**Abstract:**

As a young ensign in the US Navy on a nuclear submarine, Doug Bonacum had to brief the captain of the ship following his night-time shift, reporting about potentially dangerous situations that might emerge. He described the “situation, background, assessment, and recommendation”. This nascent SBAR communication tool served temporarily to *flatten the hierarchy* between the ensign and the ship’s captain. Years later at KP, Bonacum developed SBAR for facilitating effective conversations between obstetricians and nurses. SBAR has been implemented in “real-world” environments with excellent results. We are implementing SBAR to facilitate communication in *CliniSpace* among caregivers in this 3D immersive, virtual learning environment.

**Keywords:** SBAR, communication, caregivers, online virtual environments, interprofessional training, *CliniSpace*TM

**Introduction**

SBAR, the acronym for “situation, background, assessment, and recommendation” is a *Crew Resource Management* tool used in the US Navy. It was later adapted by retired US naval submarine officer Doug Bonacum, for use in healthcare (1). As a young ensign briefing the captain of the ship following his night-time shift, Bonacum was responsible for reporting about potentially dangerous situations that might emerge. The nascent SBAR communication tool served temporarily to *flatten the hierarchy* between the ensign and the captain. The latter wanted the facts in only a few words, with the ensign’s interpretation and recommendation, also in short order.

While serving 25 years later as a quality and safety leader in the Northern California Kaiser Permanente Healthcare Organization, Bonacum in 2002 conceptualized and elaborated the SBAR tool to facilitate improved communication between doctors and nurses in a peri-natal unit. Michael Leonard, MD, Physician Leader for Patient Safety at Kaiser Permanente of Colorado (Evergreen, Colorado, USA) along with colleagues Doug Bonacum and Suzanne Graham elaborated the technique. The SBAR technique has been implemented widely at health systems such as Kaiser Permanente, and tool’s value was recognized promptly and is today used ‘round the world’ (1,2,3).

**Methods**

The SBAR technique, a *Situational Briefing Tool* provides a framework for communication between members of the healthcare team about a patient's condition. SBAR is an easy-to-remember, concrete mechanism useful for framing any conversation, especially critical ones, requiring a clinician’s immediate attention and action. It allows for an easy and focused way to set expectations for what will be communicated and how between members of the team, both being essential for developing teamwork and fostering a *culture of patient safety* (3). An extension is ISBAR where I stands for “identifying oneself, occupation and location”. The content of the SBAR dialogue is unique for every situation. Common situations are

- A nurse calling a physician
- Nurses handing off patients to another nurse
- Nurses transferring patients to other levels of care or to other facilities
• Nurses handing off patients to their families

The Content of the **Situation** includes
1–Identifying oneself, occupation and location
2–Identifying patients by name, DOB, Age, Sex, and reason for report
3–Describing the reason for phone call; if Urgent, say so.

The Content of the **Background** includes
1–Giving the patient's Presenting Complaint
2–Giving the patient's relevant Past Medical History
3–A brief summary of background

The Content of the **Assessment** includes
1–Vital Signs - HR, RR, BP, Temp, O₂ ‘sats’, Pain scale, Level of consciousness
2–List if any VS are outside of parameters, one’s Clinical Impression
3–Severity of patient’s condition, additional concerns

The Content of the **Recommendation** includes
1–Explanation of what is required, how urgent and when action needs to be taken
2–Making suggestions of what actions are needed
3–Indicating specific actions one expects to be taken (4).

**Example of Implementing SBAR in a ‘real-world’ Situation**

In a notable example of SBAR’s implementation in a real-world situation in the St. Joseph Medical Center in Bloomington, IL (5,6), that institution’s clinical staff reduced performance errors substantially by introducing the SBAR tool. The sentinel adverse event that prompted an institutional response was that of “an elderly patient being treated with warfarin sodium (Coumadin) 2.5 mg daily. The nurse received a call from the clinical lab regarding an elevated international normalized ratio (INR) but she did not write down the results (she was providing care to another patient). On the basis of the previous lab cumulative summary, the physician increased the warfarin dose for the patient; a dangerously high INR resulted”.

The St. Joseph Medical Center “initiated a collaborative to implement the use of the SBAR communication tool. Education was incorporated into team resource management training and general orientation. Tools included SBAR pocket cards for clinicians and laminated SBAR “cheat sheets” posted at each phone. SBAR became the communication methodology from leadership to the microsystem in all forms of reporting”. Introducing this communication tool successfully throughout an organization required a major effort. “The framework for spread of SBAR entailed leadership, better ideas, set-up, and the social system. As leadership support has been found to be key to the success in previous projects, this topic was selected in 2004 as a key project in the system strategic map for fiscal year (FY) 2005. Goals were aligned with incentives by naming the chief nurse officer (CNO) as the executive leader of the team, with a portion of her compensation being based on achieving the goal. The CNO asked staff questions regarding SBAR during her rounding and requested that requests and/or reporting of issues be forwarded using the SBAR format. In addition, the medical director was named as an executive sponsor to champion the use of SBAR among medical staff peers. The medical director not only promoted the use of SBAR among staff when reporting a patient condition to him but also encouraged his peers to listen for the use of SBAR and to encourage the staff to provide the “R” or recommendation. The patient safety officer [K.H.] was delegated as the project’s day-to-day leader.”

**Process Measure: Use of SBAR**

St. Joseph Medical Center realized a mean of 96% use of SBAR in FY 2005. Team resource management training was conducted with 98.3% of targeted staff, exceeding a goal of 90%. Retraining was completed with 87% of targeted staff. Abbreviated versions of team resource management training were provided to 39% of physicians and midlevel practitioners, exceeding the goal of 25%.
Figure 1. Use of Situation, Background, Assessment, and Recommendation (SBAR) reached a mean of 96% in fiscal year 2005.

Outcome Measures: Medication Reconciliation and Adverse Events

The ‘spread-the-message’ team considered medication reconciliation (defined as timely and accurate communication) and adverse events as separate processes not directly dependent on SBAR. However, the team’s thinking was that better communication, reflecting SBAR use, would improve reconciliation and reduce the incidence of adverse events.

The frequency of medication reconciliation demonstrated notable gains from October 2002–August 2004 to September 2004–December 2005—admission reconciliation improved from a mean of 72% to a mean of 88%, and discharge reconciliation improved from a mean of 53% to a mean of 89%.

The rate of adverse events was measured using the Global Trigger Tool, which contains a list of multiple triggers appropriate for general care, surgical care, intensive care, emergency department, medication, laboratory and peri-natal care that prompt the reviewer to look further for evidence of an adverse event. The rate of events per 1,000 patient days is measured by calculating the total number of events, dividing by the total of length of stay for all charts reviewed, and multiplying by 1000. Each month, 20 charts were chosen randomly for review. The rate of adverse events was reduced from a baseline of 89.9 per 1,000 patient days in October 2004 to 39.96 per 1,000 patient days overall in FY 2005. Adverse drug events identified through use of the Global Trigger Tool decreased from a baseline of 29.97 per 1,000 patient days to 17.64 per 1,000 patient days.
Use of SBAR in medication reconciliation at admission improved from a mean of 72% to a mean of 88%.

Use of SBAR in changing the rate of discharge reconciliations during 2004-5.

<table>
<thead>
<tr>
<th>Impact of SBAR on:</th>
<th>Before</th>
<th>After</th>
<th>%Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Reconciliation:</td>
<td>72</td>
<td>88</td>
<td>22</td>
</tr>
<tr>
<td>Adverse Drug Events / 1000 days:</td>
<td>29.97</td>
<td>17.64</td>
<td>41.1</td>
</tr>
<tr>
<td>Discharge Reconciliation:</td>
<td>53</td>
<td>99</td>
<td>87</td>
</tr>
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Table 1. Summary Impact of SBAR on Three Clinical Outcomes at St. Joseph’s Hospital

The above published example of the application of the SBAR tool (4) in a real-world situation where the hospital staff changed their practices to improve patient welfare, illustrates the anticipated impact of its’ use in a virtual learning environment. Such studies are being planned.
Example Scenario Designed for Implementing SBAR in a Virtual Learning Environment

A detailed scenario developed for implementation in Clinispace, a newly released virtual learning environment (Innovation in Learning, Inc., Los Altos Hills, CA) plays out over two episodes using an example of ‘abdominal pain’.

In the first episode, the nurse (the learner) uses the tools available in Clinispace to assess the condition of a virtual patient who is in a ‘ward bed’ for observation for a complaint of abdominal pain. The virtual caregiver uses the virtual telephone to call the physician (the teacher or confederate) to inform about increasing pain, and uses SBAR protocol in that communication. The physician orders some tests and labs, which the nurse then executes in Clinispace (see http://www.clinispace.com).

In the second episode of the scenario, the results have been returned and the nurse calls again to report anomalous results, again using SBAR. The nurse and physician decide on a course of action and the scenario closes. The above scenario has yet to trialed among a group of caregivers.

A plausible dialog for the above scenario is suggested:

“I – Identity (optional; if used, creates ISBAR)
RN: Calls MD in physician Call Room
MD: Hello, this is Dr. Smith
RN: Dr. Smith, my name is Oliver, I am the Registered Nurse taking care of Teddy Appleberry in Room 9 here in the Emergency Department.

S – Situation
RN: Mr. Appleberry is a 67 year-old male patient with a chief complaint of acute abdominal pain. He has a history of hypertension, diabetes, and renal insufficiency. He takes the following medications: Metoprolol ER 50 mg bid, Actos 15 mg daily, Metformin 1000 mg twice daily and has no known drug allergies.
MD: Thank you Oliver, do you have any additional information about Mr. Appleberry.

B – Background
RN: He is conscious and alert but appears very agitated and seems to have general guarding of his abdomen. He arrived by car with his neighbor who drove him the hospital. He was not ambulatory; we brought him into the Emergency Department in a wheelchair. Vital Signs: HR is 118 RR 24 BP 168/96 SPO2 94% on Room Air. He is on the monitor and in a sinus rhythm. His temperature is 99.0. His Accu-check Blood Glucose is 170. He has a 3-day history of progressively increasing left upper quadrant pain. He reports his pain as intermittent and sharp in nature and rates the pain as 8 out of 10 on a 1 to 10 pain scale. He has increased diffuse pain with abdominal palpation and generalized guarding. He also says he has had diarrhea for 3 days. He denies nausea, vomiting, a cough, or fever. I started an IV in his Left Antecubital Space at 125 cc/hour per the Abdominal Pain Protocol.

A – Assessment
RN: The patient’s chief complaint seems to be isolated to his abdomen. He denies any shortness of breath or chest pain. He seems to have decreased bowel sounds and also reports a poor appetite over the last 3-days. Mr. Appleberry became increasingly restless during my history and physical.

R – Recommendation
RN: Dr. Smith, do you think it would be appropriate to give Mr. Appleberry some pain medication and put in orders for labs and diagnostics.
MD: Yes, I would like you to give Mr. Appleberry 1-2 of Morphine and order the following labs: CBC, Chem, 8, UA and KUB.
RN: Dr. Smith let me repeat and clarify your orders.
• 1-2 mg for pain; is this a one time order or as needed, and would you like me to give this IV?
• … and order a CBC, Chem, 8, and KUB.
MD: Thank you for asking.
• Please give the Morphine 2 mg IV every 15 minutes for pain up to a total of 10 mg.
• … and yes please order the CBC, Chem, 8 and KUB.
RN: Thank you for the clarification… that’s
• Morphine 2 mg IV every 15 minutes for pain up to a
  total of 10 mg, right?

• … and yes, I’ll order the CBC, Chem-8 and KUB.

LABS COME BACK – RN Calls the MD Again

I – Identity – MD: Hello, this is Dr. Smith.

RN: Hello Dr. Smith this is Oliver. I’m the RN taking care of Mr. Appleberry in Room 9 of the
  Emergency Department. We spoke earlier about his abdominal pain.

S – Situation

RN: I have given Mr. Appleberry the IV Morphine per your order and his lab and imaging results have
  returned. I want to provide you with the results and give you an update on Mr. Appleberry.

B- Background

RN: I have given Mr. Appleberry a total of 4 mg of Morphine over the last 30 minutes for his
  abdominal pain per your orders. He now rates his pain as a 2 of 10 on a 1 to 10 pain scale. Mr.
  Appleberry seems much less agitated.
  His vital signs are: HR of 90, BP 138/70, R 16, SpO2 of 94% on Room Air. He still has a Sinus
  Rhythm.
  His labs and diagnostics are also back.
  • CBC: WBC 15,400 with 72% neutrophils, 18% bands, and 10% lymphocytes.
  • Chem 8: Sodium 135, potassium 3.8, chloride 85, bicarb 23, BUN 38, creatinine 1.8, lactate 5.5;
    UA: 3-7 WBCs, 0-2 RBCs per hpf
  • Of particular note is the radiology report on the KUB: it shows “dilated loops of large bowel in the
    upper abdomen; not obstructive”.

MD: Thank you; he’s pretty sick!

A – Assessment

RN: Given Mr. Appleberry’s recent history and lab results, and particularly the KUB imaging results,
  there may be something acute going on in his abdomen.

MD: Yes. It might be diverticulitis. I better get over there soon.

R – Recommendation

RN: Is there anything else you would like us to do for Mr. Appleberry before you arrive?
  • Do you think he will be an admission?
  • Should we call his Primary?
  • Do think Mr. Appleberry needs a surgical consultation?

MD: Those are excellent suggestions. I’ll be right down to the ward, please meet me in Mr.
  Appleberry’s room, . . . that’s ED room 9, right? Also, please see who’s on call for surgery and page
  them to the ward for me.

RN: I will page surgery right away, and then meet you in Room 9”.

Discussion

In Episode One described above, the nurse (RN) speaks seven times, effectively communicating about an
urgent clinical situation, and in Episode Two, s/he speaks six times, updating with additional information.
The responses of the virtual physician in the first episode are four, and in the second, three. Thus, with a
total of 20 individual exchanges, this team of two clinicians has with SBAR accomplished the requisite
focused communication that will afford excellent, interval care for this virtual patient. Readers should be
aware that the SBAR rubric has yet to be studied and reported as being used in any virtual learning
environments.

Using SBAR among professionals and in inter-professional communication represents a ‘culture change’
among clinicians, not only as a new tool that must be learned and practiced to become useful for exchange
of information, but one that enables nurses to extend and elevate their traditional ‘position as passive
participants’ in clinical practice. This situation was highlighted by nurse reports at the Illinois hospital
where “hesitancy was noted in providing the “recommendation” to physicians”. Traditionally, the role of nurses has been to ‘carry out the doctors orders’, because ‘the doctor knows best!’ Fortunately, modern practice has become more collaborative and cooperative. As indicated in a 2007 article (7), 80% of medical students report positive changes in attitudes and 91% report “educational benefits” from working in mixed professional environments.

The mode of ‘spreading-the-message’ of SBAR described above in the Illinois hospital experience was accomplished with paper/pencil methods – pocket cards for clinicians and laminated SBAR “cheat sheets” posted at each phone in most of the hospital’s departments. This ‘yesterday’s technology’, while effective during the past decade, can these days be replaced with 3D online, interactive, immersive training and practicing among hospital staffs. The modern learning technology is online environments that provide rich and focused learning in virtual 3D environments (also known as virtual worlds)(8) in which learners interact with virtual patients and colleagues. Many platforms offer participation by individuals, and a few offer team-training capacity.

References
CliniSpace™ – A Virtual Learning Environment. Users select the telephone (off-screen) to chat with a role-playing physician, and with the virtual patient, if selected.