How to use this guide
This guide gives actions and resources for creating and sustaining safe practices for hand-off communications. In it, you’ll find:

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APSS: Hand-Off Communications

Executive Summary

The Problem
Communication is the root cause of most errors because hospitals lack a systematic, universal method to accurately transfer important information. Adoption of a clear and consistent communication strategy, whether I-PASS, SBAR, or another method, has been shown to reduce ineffective hand-offs by nearly 60% (Benjamin, Hargrave, & Nether, 2016), reduce readmission rates by almost half (The Joint Commission), decrease preventable adverse events by 30%, and decrease medical errors by nearly a quarter (Starmer, et al. 2014). According to a report by the WHO, nearly twice as many adverse events occur due to breakdowns in the hand-off compared to inadequate skills of the practitioner across the globe (WHO, 2007).

The Cost
Inadequate hand-offs are often where safety fails first (Friesen, White, & Byers, 2008). Poor hand-offs were a contributing factor in nearly 80% of adverse events in a study over one decade (Lee, Phan, Dorman, Weaver, & Pronovost, 2016). Failures in communication have been shown to account for nearly 30% of all malpractice claims. Furthermore, inadequate handoffs have been shown to contribute to 1,744 deaths and $1.7 billion in malpractice costs over a five year period (The Joint Commission, 2017).

The Solution
Many healthcare organizations have successfully implemented and sustained improvements to reduce errors attributable to poor hand-off communication (HOC). These organizations have focused on implementing a standard, universal agreed-upon method of communication.

This document provides a blueprint that outlines the actionable steps organizations should take to successfully reduce HOC-related errors and summarizes the available evidence-based practice protocols. This document is revised annually and is always available free of charge on our website. Hospitals who make a formal commitment to improve HOC and share their success on the PSMF website have access to an additional level of consulting services.
Leadership Checklist

On a monthly basis, or more frequently if a problem exists, the executive team should review all errors and near misses related to communication breakdowns. Use this checklist as a guide to determine whether current evidence-based guidelines are being followed in your organization:

☐ Measure and report HOC error rates (SSEs attributable to communication failure/total #SSEs). Note trends in areas with low compliance and high error rates. Routinely reassess outcomes.

☐ If HOC error rates indicate room for improvement, initiate a PI (performance improvement) project. If a problem is not indicated, routinely reassess to identify gaps, and ensure integrity of the data collected.

☐ Ensure frontline involvement in HOC improvement activities. Maintain their engagement and remove barriers to progress.

☐ If a PI plan is put in place, measure the associated process outcomes.

☐ Ensure there is a written policy outlining the standardized, agreed upon approach to communication for every interaction for your organization

☐ Ensure that any tools and reports that are intended to facilitate the communication method are actually in the agreed-upon format

☐ Ensure that HOC protocols are embedded into clinical workflows, whether electronic or paper.

☐ Ensure there are enough staff to effectively manage change.

☐ Ensure adequate training and documentation of HOC competencies and skills.

☐ Eliminate barriers to making rapid changes to documentation templates and order sets.

☐ Debrief on a regular basis to solicit team feedback about barriers to sustained compliance. Adjust the plan quickly and nimbly as needed.

☐ Hold staff accountable for providing the standard of care and reward success.

☐ Ensure that leaders have a simple process to oversee HOC improvement work while also considering how it aligns with other initiatives across the organization.
## Clinical Workflow

The content and information that will be communicated between staff members will be different based upon the disciplines involved and the location of the handoff, but the method by which that information is communicated will be standardized according to the organization’s guidelines.

### CLINICAL HANDOFF EXAMPLE

*customize as appropriate for discipline and setting*

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<td>Ensure that there is an opportunity for the receiver to ask questions.</td>
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*A comparison of SBAR (Situation, Background, Assessment, Recommendation) and I-PASS (Illness severity, Patient summary, Action list, Situation awareness and contingency planning, Synthesis by receiver)*
Performance Improvement Plan

Follow this checklist if the leadership team has determined that a performance improvement project is necessary:

☐ **Gather the right project team.** Be sure to involve the right people on the team. You’ll want two teams: an oversight team that is broad in scope, has 10-15 members, and includes the executive sponsor to validate outcomes, remove barriers, and facilitate spread. The actual project team consists of 5-7 representatives who are most impacted by the process. Whether a discipline should be on the advisory team or the project team depends upon the needs of the organization. Patients and family members should be involved in all improvement projects, as there are many ways they can contribute to safer care.

- Nurses
- Leadership
- Clinical educators
- Performance improvement specialists
- Information technologists
- Physicians
- Pharmacists
- Case managers
- Respiratory therapists
- Physical, occupational, and speech therapists
- Radiology technologists
- Admitting and registration staff
- Quality and safety specialists

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<th>RECOMMENDED HOC IMPROVEMENT TEAM</th>
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Table 1: Understanding the necessary disciplines for a HOC project improvement team

☐ **Understand what is currently happening and why.** Reviewing objective data and trends is a good place to start to understand the current state, and teams should spend a good amount of time analyzing data (and validating the sources), but the most important action here is to go to the point of care and observe. Even if team members work in the area daily, examining existing processes from every angle is generally an eye-opening experience. The team should ask questions of the frontline during the observations that allow them to understand each step in the process and identify the people, supplies, or other resources are needed to improve patient outcomes.

- Information exchange at the leadership level
- Information exchange across and within departments
- Information exchange between differing levels of hierarchy
- Information exchange in a high stress, distracting environment
- Information exchange in the EHR
- Information exchange to the patient and family
- Quality and safety specialists

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Table 2: Consider assessing these processes to understand where the barriers contributing to HOC may be in your organization

**Complete this Lean Improvement Activity:**

Conduct a [SIPOC](#) analysis to understand current state and scope of the problem. A SIPOC is a lean improvement tool that helps leaders to carefully consider everyone who may be touched by a process, and therefore, should have input on future process design.

Create a [process map](#) once the workflows are well understood that illustrates each step and the best practice gaps the team has identified ([IHI, 2015](#)). Brainstorm with the advisory team to understand why the gaps exist, using whichever [root cause analysis tool](#) your organization is accustomed to ([IHI, 2019](#)). Review the map with the advisory team and invite the frontline to validate accuracy.
Prioritize the gaps to be addressed and develop an action plan. Consider the cost effectiveness, time, potential outcomes, and realistic possibilities of each gap identified. Determine which are a priority for the organization to focus on. Be sure that the advisory team supports moving forward with the project plan so they can continue to remove barriers. Design an experiment to be trialed in one small area for a short period of time and create an action plan for implementation.

TYPICAL GAPS IDENTIFIED IN HOC

- Lack of organizational HOC method
- Lack of accountability
- Lack of leadership oversight
- Lack of leadership implementation in their own exchanges
- Varying levels of education and expertise
- Complex work environment with many distractions
- New or visiting staff members
- Emergent patient needs
- Fragmentation by discipline and specialization
- Language barriers
- Inconsistent tools
- Lack of patient involvement

Table 3: By identifying the gaps in HOC compliance, organizations can tailor their project improvement efforts more effectively.

Evaluate outcomes, celebrate wins, and adjust the plan when necessary. Measure both process and outcome metrics. Outcome metrics include the rates outlined in the leadership checklist. Process metrics will depend upon the workflow you are trying to improve and are generally expressed in terms of compliance with workflow changes. Compare your outcomes against other related metrics your organization is tracking. Routinely review all metrics and trends with both the advisory and project teams and discuss what is going well and what is not. Identify barriers to completion of action plans, and adjust the plan if necessary. Once you have the desired outcomes in the trial area, consider spreading to other areas (IHI, 2006).

It is important to be nimble and move quickly to keep team momentum going, and so that people can see the results of their labor. At the same time, don’t move so quickly that you don’t consider the larger, organizational ramifications of a change in your plan. Be sure to have a good understanding of the other, similar improvement projects that are taking place so that your efforts are not duplicated or inefficient.

HOC COMPARATIVE OUTCOMES

- Total SSEs
- Near misses
- Routine observation audit results
- Readmission rates
- Execution of procedures
- Staff satisfaction

Table 4: Consider evaluating related metrics to better understand HOC presence and contributing factors.

Be sure the plan includes the following:

- Assess the ability of the culture to change and adopt appropriate strategies
- Revise policies and procedures
- Redesign forms and electronic record pages
- Clarify patient and family education sources and content
- Create a plan for changing documentation forms and systems
- Develop the communication plan
- Design the education plan
- Clarify how and when people will be held accountable

Read this paper from the Institute for Healthcare Improvement to understand how small local steps can integrate into larger, system changes.

Read this paper from the Institute for Healthcare Improvement to understand how small local steps can integrate into larger, system changes.
What We Know About Hand-off Communications

Hand-offs
A hand-off is considered the transfer and acceptance of care from one individual or team to another. It involves the live passing of patient information to ensure continuity of care. A successful hand-off can only be achieved by effective communication. HOC must happen whenever care of a patient is transferred from one individual or care team to another. Accurate, effective, and complete HOCs are vital for patient safety. An ineffective hand-off, however, can quickly turn into a problem for the patient and healthcare team that may cause a medical error.

Poor Hand-offs and Complications
Serious patient harm can occur when HOC information is absent, incomplete, erroneous, or delayed. The consequences of failed communication during handoff are medication errors, inaccurate patient plans, delay in transfer of a patient to critical care, delay in hospital discharge, and repetitive tests among others (Flemming & Hübner, 2013). It is estimated that some teaching hospitals may conduct 4,000+ hand-offs in one day (The Joint Commission). Without a consistent and organized structure guiding the exchange of information, there are more risks for error. Being a part of this fast-paced environment means that it takes a more dynamic, thorough process to translate every detail in every hand-off. In fact, some nursing units may “transfer or discharge 40 percent to 70 percent of their patients every day” (Friesen, White, & Byers, 2008).

- **Financial implications**: A study released in 2016 estimated that communication failures in US hospitals and medical practices were responsible at least in part for 30 percent of all malpractice claims, resulting in 1,744 deaths and $1.7 billion in malpractice costs over five years (The Joint Commission, 2017).

Careful consideration of the emotional, economic, and clinical risks at stake provides a significant incentive to ensure adequate hand-off procedures in your organization. An organizationally-adopted method of communication will inherently emphasize consistency and will prepare both the sender and receiver for the conversation, as both share the same mental model, thereby increasing understanding of information presented and comprehensiveness and clarity of information communicated (Powell, 2007).

Organizational Implications
In addition to the lives lost and the financial burden, the Joint Commission requires all health care providers to “implement a standardized approach to handoff communications (HOC) including an opportunity to ask and respond to questions” (The Joint Commission, 2020). The Joint Commission has made standardization of hand-offs a National Patient Safety Goal and the World Health Organization has introduced prevention of handoff errors as one of the top five patient safety solutions (Arora & Farnan, 2017).

From a curriculum standpoint, Society for Hospital Medicine has elevated handoffs as a core competency for practitioners in the hospital (Arora & Farnan, 2017).

Strategies to mitigate breakdowns in hand-offs are prevalent both in the US and globally. A literature review assessing SBAR implementation in a number of global hospitals reported overall improvement in the completeness of information transferred, decreased time spent on reporting, and increased patient safety in hospitals, rehabilitation centers, and nursing homes (Muller, et al. 2018).

**Populations At Risk**
Any time a patient is transferred from one individual or care team to another, there is a potential for error.

Some of the barriers to a successful hand-off include, but are not limited to, the physical setting, social setting, language and communication barriers, barriers, time, and convenience.

**Barriers to Effective Implementation**
Unfortunately, since there is no ‘one size fits all’ plan, it can be challenging for organizations to take on this task. It is reported that differences in communication styles between nurses and physicians are one of the contributing factors to the communication errors (Greenfield, 1992). Communication problems are multidimensional, as they are influenced by technology, personnel, process, information design, and biology itself (Hughes, 2008). Despite huge investments in technology to record, store, disseminate, and access information, studies still find that communication in health care continues to be problematic (Townsend-Gervis, Cornell, & Vardaman, 2014).
SBAR Versus I-PASS

High Reliable Organizations utilize mnemonics as a method to standardize handoffs in an effort to reduce errors. Both SBAR and I-PASS provide a framework for handoffs. I-PASS allows for a specific summary of the patient which encourages the receiver to ask questions during handoffs. SBAR flattens the hierarchy in communication across disciplines. SBAR can be used in non-clinical communication as well. Studies on both SBAR and IPASS demonstrated improved handoffs and a reduction in errors. No matter what mnemonic an organization employs, if it is effectively deployed, it will have a positive impact on patient safety and will reduce handoff errors handoff errors.

SBAR is a tool created by the US Navy which provides a common structure to communicate thereby bridging the gap between professions with differing communication styles. SBAR can flatten the hierarchy. For example, often, nurses communicate in a subjective/narrative style whereas physicians communicate in an objective, action-oriented approach. The use of the SBAR template aids the sender and the receiver in focusing on the information exchanged. SBAR improves efficiency, accuracy and the perception of effective communication.

I-PASS was developed as a method of communication for residents as it provides a structured report process. The mnemonic allows for a specific summary of the patient’s history, current diagnosis and comorbidities. Unlike other mnemonics, the I-PASS mnemonic encourages the report receiver to ask questions about the patient’s assessment and treatment plans.

Successful Hand-offs and Improved Healthcare: an SBAR Case Study

The SBAR communication tool supports common language among team members (Shahid & Thomas, 2018). Townsend-Gervis and colleagues tested the impact of using the SBAR tool in the context of daily interdisciplinary rounds (IDR). This study showed significant improvement in Foley catheter removal, reduction in readmissions rates, and improvement in patient satisfaction. This study’s results support the value of using SBAR during IDR to improve situational awareness and to maintain focus on relevant clinical issues.

A qualitative case study was conducted by Vardaman and colleagues, to examine the implementation of the SBAR protocol amongst nurses within a certain facility. Three unique and related concepts, schema development, social capital, and dominant logic, were assessed. The authors revealed that SBAR may help nurses in rapid decision making (schema development), provide social capital and legitimacy for less-tenured nurses, and reinforce a move toward standardization in the nursing profession.

Technology Available for Communication with Patients and Health Workers

In the digital age, it is imperative to ensure that the technologies introduced in healthcare improve interactions and follow the universal, agreed-upon standard of communication for the hospital, whether it’s SBAR, IPASS, or another method. Technologies that can integrate into EHR systems and admission, transfer, and discharge processes, can access clinical results and staffing schedules, and can offer features of telehealth, including live chat and video communication, are desirable for interactions between health workers or for conversations with the patient during and after their stay.

Technology can also prove pivotal for in-patient engagement. Simple technologies, such as visual aids and white boards, along with more complex tools, such as iPads, can be used to quickly convey essential information to both the patient and family and to members of the care team, such as care plan information, most recent vital sign information, and hospital information. **When verbal, written, and digital information is consistently displayed in the hospital-wide method of communication, it ensures that the sender conveys the information comprehensively and that the receiver anticipates the order of information appropriately.**
Resources

For hospital project improvement teams for hand-off communication improvement:
- NHS: Description of how to use SBAR along with a template example
- IHI: SBAR Description, Examples, and Blank Template
- AHA: Implementing SBAR Across a Large, Multihospital Health System
- Implementing SBAR from AHA
- I-PASS Institute: Background, Description, and Example of I-PASS
- Hand-off Communication Case Example using both SBAR and I-PASS
- American Journal of Medical Quality: Systematic Review of Hand-off Mnemonic Literature
- I-PASS, a Mnemonic to Standardize Verbal Handoffs

For hospital project improvement teams for general improvement:
- CMS: Hospital Improvement Innovation Networks
- IHI: A Framework for Spread of Innovation
- The Joint Commission: Leaders Facilitating Change Workshop
- IHI: Quality Improvement Essentials Toolkit
- SIPOC Example and Template for Download
- SIPOC Description and Example
- Patient stories, such as the story of Jennifer Nibarger, wife of Brent Nibarger

Education for Patients and Family Members

For hospital project improvement teams for general improvement:
- PatientAider: "Questions for your doctor and nurse"
- Training to Advance Physicians’ Communication Skills with Patients
- AHRQ: Shared Decision Making
- CMS: Toolkit for Making Written Material Clear and Effective
- MedlinePlus: Communicating with Patients
- PSMF: Example Plan of Care in SBAR format for families
- Patient stories, such as the story of Jennifer Nibarger, wife of Brent Nibarger

Important discharge considerations for the patient and family member:
Always try to ensure that both the patient and at least one family member are present for discharge instructions (Society for Academic Emergency Medicine, n.d.):
- Verbally disclose the discharge treatment plan with the patient
- Specify who the patient should follow up with and exactly when
- Provide the exact clinic phone number
- Explain that, depending on insurance, the patient might need to obtain a referral from their primary care provider before contacting a specialist
- Describe reasons to return to the hospital. Include symptoms to to watch out for
- Describe any ambiguous or unknown test results, diagnoses and interpretations
- Involve patients in discussions during hand-off throughout hospital stay and ensure that they understand the purpose of these routine discussions and the importance of their involvement to best prepare for discharge
- A written summary of all of the above and relevant information should be given to the patient at a 6th grade reading level and in their primary language
Measuring Outcomes

Serious Safety Event (SSE) Rate: Rate of Serious Safety Events attributed to hand off communication failure per 10,000 Serious Safety Events. A SSE results in harm that ranges from moderate to severe patient harm or death.

Outcome Measure Formula:

Numerator: Number of patients with a serious safety event attributed to:
- Communication Failure
- Hand-off communication failure
- Critical Value communication

Denominator: Total number of Serious Safety Events

Rate is typically displayed as: Serious Safety Events attributed to hand off communication failure per 10,000 Serious Safety Events

Metric recommendations:

Direct Impact: All patients

Elimination of patient harm: AAs measured by elimination of serious safety events, sentinel events, state reportable events, or hospital acquired conditions (HACs) attributed handoff communication.

Lives spared harm:

\[
\text{Lives spared harm} = (\text{handoff communication SSE rate baseline} - \text{handoff communication SSE rate measurement}) \times \text{Serious Safety Events measurement}
\]

Lives saved:

\[
\text{Lives saved} = (\text{handoff communication SSE mortality rate baseline} - \text{handoff communication SSE mortality rate measurement}) \times \text{handoff communication SSE measurement}
\]

Mortality SSEs are coded. If the organization codes the severity of their events, this formula could be applied to their data set.

Notes:

Data Collection:

Manual chart review of events to determine if an event is a serious safety event and is attributed to handoff communication.

Settings:

All inpatient and outpatient settings.

Mortality (will be calculated by the Patient Safety Movement Foundation):

The PSMF, when available, will use the mortality rates associated with Hospital Acquired Conditions targeted in the Partnership for Patient’s grant funded Hospital Engagement Networks (HEN). The program targeted 10 hospital acquired conditions to reduce medical harm and costs of care. “At the outset of the PIP initiative, HHS agencies contributed their expertise to develop a measurement strategy by which to track national progress in patient safety—both in general and specifically related to the preventable HACs being addressed by the PIP. In conjunction with CMS’s overall leadership of the PIP, AHRQ has helped coordinate development and use of the national measurement strategy. The results using this national measurement strategy have been referred to as the “AHRQ National Scorecard,” which provides summary data on the national HAC rate.
Endnotes

Conflicts of interest disclosure
The Patient Safety Movement Foundation partners with as many stakeholders as possible to focus on how to address patient safety challenges. The recommendations in the APSS are developed by workgroups that may include patient safety experts, healthcare technology professionals, hospital leaders, patient advocates, and medical technology industry volunteers. Workgroup members are required to disclose any potential conflicts of interest.

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Appendices

Appendix A: Sender, receiver, and system strategies

(Arora & Farnan, 2017)

- **System-based Strategies:**
  - **Standardization:** Leadership must agree on one method of communication to implement hospital-wide. Mnemonics such as I-PASS and SBAR are recommended.
  - **Current State:** Examine the current hand-off processes in your hospital.
  - **Face-to-face communication and interactive dialogue:** Enforce face-to-face communication as much as possible and avoid paper or electronic handoffs.
  - **Essential Content for Written Templates:** Identify critical content that should be exchanged in every hand-off according to the agreed upon method of communication. This might include (The Joint Commission, 2017):
    - Sender contact information
    - Illness assessment
    - Patient summary, including background, events leading up to hospitalization, assessment, treatment thus far, and plan of care
    - Next action items
    - Contingency plans
    - Allergies and current medications
    - Code status
    - Laboratory tests and results
    - Dated vital signs
  - **Time and place:** As one of the main causes of inadequate handoffs involves the physical environment of the dialogue, optimizing the setting can improve the quality of the conversation between the sender and receiver. This can include:
    - Designating a space free of distractions and interruptions
    - Organizing shift structure to allow for overlap
  - **Removing the Individual Blame:** Focus on improvement from a systematic, organizational standpoint, instead of focusing on individual errors.
  - **Organization:** Devise a mechanism to synthesize all information from eclectic sources into one hand-off, rather than reporting each piece of information separately.

- **Sender-based strategies:**
  - **Verbal Priority:** The verbal hand-off should include the most important information. This communication structure could also involve prioritizing the sickest patients.
    - **Guidance:** Highlight tasks that have yet to be completed. Make explicit, detailed suggestions for events that are anticipated to occur.
    - **Check for understanding:** Leverage interactive questioning and read-back strategies. This can help ensure that the receiver did not misinterpret or miss any information.

- **Receiver-based Strategies:**
  - **Engagement:** Read back the high-priority items for accuracy and completeness while the source of information is still physically present. Actively listen to the sender’s information by taking detailed notes, asking relevant questions, and using body language to signal understanding.
  - **Active questioning:** Clarification of any unclear or ambiguous information is essential while the sender is still present.

- **Education-based Strategies:**
  - **Learning:** Training methods could include observation, performance feedback, simulation, role playing, scenario review, and independent learning.
    - Identify those who are excelling in implementing the hand-off curriculum to use as demonstrators. Designate specific time for questions.
Appendix B: Discharge Using SBAR

Image: Discharge summary of key information molded into SBAR format (Lenert, Sakaguchi, & Weir, 2014)

Appendix C: Hand-Off Communication Checklists

Checklists are a remarkably useful tool in improving safety, but they are not a panacea. As checklists have been more widely implemented, it has become clear that their success depends on appropriately targeting the intervention and utilizing a careful implementation strategy.

Errors in clinical tasks that involve primarily attentional behavior—such as diagnostic errors or handoff errors—may require solutions focused on training, supervision, and decision support rather than standardizing behavior, and thus may not be an appropriate subject for a checklist. An effective checklist also requires consensus regarding required safety behaviors.

When a checklist is appropriate, safety professionals must be aware that implementing a checklist is a complex sociotechnical endeavor, requiring frontline providers to not only change their approach to a specific task but to engage in cultural changes to enhance safety. Successful implementation of a checklist requires extensive preparatory work to maximize safety culture in the unit where checklists are to be used, engage leadership in rolling out and emphasizing the importance of the checklist, and rigorously analyze data to assess use of the checklist and associated clinical outcomes. Failure to engage in appropriate preparatory and monitoring before and after checklist implementation may explain why checklist use in real-world settings is often poor, contributing to disappointing results.” (AHRQ, 2019)

While each checklist needs to be tailored to the sender and receiver of each HOC, they must all contain the vital information needed by the receiving caregiver/team to provide the best care of the patient. That information must include (but is not limited to) the following:

- The reason the patient is in the hospital
- All medical problems for the patient, even if not relevant to this admission
- Patient treatment and physical history, including relevant parts of review of systems
- Results from labs and other tests
- A patient’s medications and treatments - both current and planned
- I and O’s (patient Intake and Output, such as catheters or blood draws)
- Hospital course, progress, and/or complications
- The discharge plan for the patient or final hand-off
- Recommendations: “Here is what I [the caregiver] think and suggest”

The evidence for effective HOCs

The TST reports healthcare institutions that have used their approach have an increase in patient and family satisfaction, staff satisfaction, and successful transfers of patients. One healthcare organization reduced their readmissions by 50% and another reduced the time it takes to move a patient from the emergency department to an inpatient unit by 33%.

Healthcare institutions have been able to complete their HOC project in approximately 4 months, using minimal resources. By using targeted solutions for your organization’s specific root causes of poor HOCs, you can begin to see results within 16-21 weeks.

The Checklist Solution

The most common failures of HOCs are that the sender omits vital data from their presentation, or the receiver fails to understand or record it. This has been a very common source of errors in aviation, and their approach is to use a system of checklists for each major task, such as preflight, takeoff, emergency management, and landing.

The checklist is not a fixed recipe for flying the airplane - it is not intended to prevent creative problem solving. Its purpose is to prevent an overloaded and stressed flight crew from forgetting things. The same logic applies to the use of checklists in the field of medicine.

This has been recognized by Dr. Atul Gawande, among others, in his creation of a “Checklist Manifesto” for use by surgeons in the operating room (reference: “The Checklist Manifesto”).

Three issues that make checklists mandatory in aviation are: (1) workload stress, (2) distractors, and (3) increased levels of complexity. These 3 problems are abundant in the clinical settings in which handoff communications must happen. For example:
• **Workload stress**  
  o Patient is very ill and may even be an emergency situation  
  o Fatigue is very common: “I was up all night on-call”  
  o Multiple priorities: “This is not my only patient!”

• **Distractors**  
  o Noise and hallway traffic during rounds  
  o Pagers going off during hand-off communication  
  o Emergency arises on a different patient

• **Increased level of complexity**  
  o Electronic Medical Record (EMR) requirements  
  o Compliance documentation  
  o More complex monitors and other devices

All of these factors have increased significantly in recent years, making the use of checklists obligatory in clinical medicine today. HOC is a key application for medical checklists, because the most common errors in HOC are omissions of vital facts or data.

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### Items to include in every checklist

While each checklist will be different, there are a few elements that you should include in all HOC checklists to ensure best patient care. These elements include, but are not limited to:

- The reason the patient is in the hospital
- All medical problems for the patient, even if not relevant to this admission
- Patient treatment and physical history, including relevant parts of review of systems
- Results from labs and other tests
- A patient’s medications and treatments - both current and planned
- I and O’s (patient Intake and Output, such as catheters or blood draws)
- Hospital course, progress, and/or complications
- The discharge plan for the patient or final hand-off
- Recommendations: “Here is what I [the caregiver] think and suggest”

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### List of identified HOCs

We identified 18 different interactions that have some form of HOCs and listed them below. Each of these will require its own specific checklist. Your institution may have fewer or a greater number of HOCs. For each HOC, your institution should have a checklist that includes guidelines for both the sender and receiver.

This appendix include an example checklist for lists below that are marked with an *.

#### From emergency department to:
1. Hospital ward team
2. Operating room*
3. Anesthesiology team
4. Surgery team*
5. Critical care unit*
6. Testing unit (radiology, etc.)

#### From hospital unit (ward or ICU) to:
7. Operating room
8. Outpatient clinic *
9. Long-term care unit
10. Testing unit (radiology, etc.)
11. Home (discharge instructions)*
12. Within same unit:  
   - Shift changes*
   - Medication management during transitions*

#### From operating room to:
13. Post-anesthesia care unit (PACU)
14. Hospital unit (ward or ICU)*
15. Home (ambulance or surgery)*

#### From paramedics to:
16. Emergency department*
17. Hospital unit (ward, ICU)
18. Long-term care unit
Emergency department to operating room checklist

Chief complaints
☐ Why is the patient coming to the OR?
☐ What made it an emergency?
☐ If a chronic disease, what are its history, treatments, complications, prognosis?

Surgical Plan
☐ Exactly what surgery will happen?
☐ Major known surgical risks?

Special anesthesia needs?
☐ Patient position, paralysis, or lack thereof, anticipated blood loss, etc.
☐ Obstructive Sleep Apnea (OSA) Screening

Cervical spine status
☐ “Cleared”? If so, how?
☐ History of neck disease or injury?

Other acute disease or injury
☐ Other known acute disease, other than the reason for emergency surgery?
☐ If trauma, other injuries not related to surgery?

Medical/surgical history
☐ To extent known, and as time allows. Review of systems if available

Physical exam findings: Positive findings only. Include ABC’s
☐ Airway: Patent: Assistance required?
☐ Breathing: Status of ventilation and oxygenation
☐ Circulation: Vital signs, including BP and other findings re circulation

Blood loss & fluid status
☐ Estimated blood loss from currently injury or disease
☐ IV fluids given: type, amount, route
☐ Other I and O: recent oral intake, urine output, vomiting, drainage

Patient lines & access
☐ All intravenous lines- size and location
☐ All other patient cannulas, including central line, chest tube, Foley catheter, arterial etc

Las and studies
☐ Current lab results and relevant older lab results
☐ Results of X-Rays, CT, MRI, other studies

Drugs
☐ Analgesia given by any route, past 24 h. Opiates?
☐ All other meds usually taken by the patient
☐ Any other meds given since current problem began. Dose, frequency, response?

Special instructions or findings
☐ Anything unusual or remarkable, not covered by above?
☐ Any special instructions or restrictions? (For example: patient refuses blood products for religious reasons)
Hospital unit to home (discharge) checklist (Bloink, 2013)

Initial transitional care contact
☐ Patient Name
☐ Date of contact

Medication reconciliation
☐ Medication list updated
☐ New medication list given to patient

Sources of information
☐ Patient, family member, or caregiver
☐ Hospital discharge summary
☐ Hospital fax
☐ List of recent hospitalizations or ED visits
☐ Other
  ☐ Discharged from (location)
  ☐ Discharged on (date)
  ☐ Diagnosis/problem:
  ☐ Medication changes (yes/no)
☐ Medication list updated (yes/no)
☐ Needs referral (yes/no)
☐ Needs lab (yes/no)
☐ Needs follow-up appointment
☐ Within seven days (highly complex visit)
☐ Within 14 days of discharge (moderately complex visit)
☐ Appointment made for (date)
☐ Appointment with (physician name)
☐ Additional information needed and requested (yes/no)
☐ Face-To-Face transitional care visit documentation (for use in plan section of visit note)

Referrals
☐ None needed
☐ Referrals made

Community resources identified for patient/family
☐ None needed
☐ Home health agency
☐ Assisted living
☐ Hospice
☐ Support group
☐ Education program

Durable medical equipment ordered
☐ None needed
☐ DME ordered

Additional communication delivered or planned
☐ Family/caregiver
☐ Specialists
☐ Other

Patient Education
☐ Topics discussed
☐ Handouts given
☐ Date initial transitional care contact made
SBAR Shift change checklist

The following technique called the Situation, Background, Assessment and Recommendation (SBAR) is the industry's best practice for standardized communication between caregivers (Schick and Windle, 2016).

S (Situation)
- Reason for admission
- Contact information
- Allergies
- Current attending/resident

B (Background)
- Status of advanced directives/code status
- Pertinent medical history
- Labs: abnormals this shift and pending to do next shift
- Tests/Procedures: Current shift and expected for next shift
- Current Problems: medical and nursing

A (Assessment)
- VS/pain past 24 hours/shift
- Neuro
- CV
- Respiratory
- GI/GU (include I and O)
- Skin
- Mobility
- Patient safety issues: current and anticipated
- Medication concerns and updates

R (Recommendation)
- Pending/anticipated tests and procedures
- Other concerns
- Current and anticipated family issues
- Status of current shift goals/problems
- Anticipated goals/problems for next shift
- Other TO Dos/Do you have any questions?
- Patient/Nurse introduction
- Joint review of lines/drips, neuro check, etc.
Operating room to hospital unit checklist

Team
☐ Patient Name, sex & MRN
☐ Attending anesthesiologist
☐ Anesthesia resident/Fellow/CRNA
☐ Surgeon

Pre-op
☐ Age
☐ ASA
☐ Weight
☐ Height
☐ Guardianship
☐ Surrogate
☐ Advance directives
☐ DNR status
☐ Allergies

Pre-op vital signs:
☐ BP
☐ HR
☐ SpO2
☐ Temp
☐ RR

☐ Current medications
☐ Past medical history
☐ Past anesthesia history
☐ Pertinent pre-op labs and studies
☐ Pre-op mental status and primary language
☐ NPO status
☐ Blood/bloodless status

Intra-op events
☐ Surgical procedure performed
☐ Anesthetic technique & airway management

IV sites:
☐ Fluid
☐ Location
☐ Difficult access

Fluid status:
☐ Intake
☐ Output
☐ EBL
☐ Blood products
☐ Medications given (including antibiotics)
☐ Complications/interventions

Post-op
☐ Surgical procedure performed
☐ Anesthetic technique & airway management

Post-op vital signs:
☐ BP
☐ HR
☐ SpO2
☐ Temp
☐ RR

Assessment:
☐ Respiratory
☐ CV
☐ Neuro
☐ GU
☐ Skin

☐ Post-op pain management plan
☐ Recent labs
☐ Pending labs
☐ Medications
☐ Special instructions & concerns
☐ Questions from receiving provider
Operating room to home checklist (Bloink, 2013)

☐ Responsible adult to stay with patient for 24 hours
☐ Patient understands they may not drive or make major decisions for 24 hours
☐ Patient understands precautions after anesthesia:
  ☐ Drowsiness, impaired judgment and slower reaction time, sore throat, muscle ache
  ☐ Sensory block understanding:
    ☐ May not be able to feel sharp pain, hot or cold involved at the site
    ☐ Understanding to being pain medication before block wears off
☐ Instruct patient on expected activity levels:
  ☐ Rest the remainder of the day
  ☐ Move slowly when changing positions (dizziness is normal)
  ☐ Gradually do a little more each day
  ☐ Follow the surgeon’s instructions for return to normal activities
  ☐ For best outcomes:
    ☐ It is important to walk often, change positions and move legs if resting in a lying or sitting position
    ☐ Take 10 deep breaths and cough every hour or two while awake
    ☐ Remember to hold a small pillow or towel over your incision while doing your deep breathing and coughing exercises
☐ Review medications:
  ☐ Medications will be reviewed and when to resume and take them
  ☐ Pain medication should be taken before the pain is severe during the first 2-3 days after surgery
  ☐ Medications like Percocet and Vicodin contain acetaminophen (Tylenol) so do not take plain Tylenol when using these medications
  ☐ Pain medication can cause constipation and nausea:
    ☐ Remember to follow instructions for taking a laxative, if needed
    ☐ Use a post-op nausea information sheet with suggestions for treating these side effects
☐ Review diet and elimination:
  ☐ Progress to regular diet as tolerated
  ☐ Begin with comfort foods, such as soup, crackers, jello and juices
  ☐ Stay away from food that may increase the chance of nausea and vomiting, such as spicy and greasy foods
  ☐ If you have trouble voiding (burning or urgency while peeing), call your surgeon
  ☐ If you are unable to urinate when you get home, have someone bring you to the emergency room
  ☐ No alcoholic beverages, marijuana, or other drugs for 24 hours or while taking pain medications
☐ Importance of handwashing to prevent infection:
  ☐ Keep dressing dry and protect dressing, incisions, and casts
  ☐ When you can take a shower or bath, depending on the procedure
☐ Review special equipment (if applicable, based on the procedure):
  ☐ Incision care and when to remove dressing
  ☐ Drain instructions
  ☐ Foley care instruction
  ☐ Crutch walking
  ☐ Incentive spirometer
☐ Instruct patient when it’s appropriate to call their surgeon:
  ☐ Pain is not relieved with the pain medication
  ☐ Bleeding
  ☐ Fever over 101°F
  ☐ Continuous nausea and unable to keep fluids down
  ☐ Redness and swelling around the surgical wound or drainage that changes to yellow or green
  ☐ Intravenous site with signs of redness of drainage
  ☐ If unable to get physician come to the emergency department
☐ Instruct patient to call 911 if they have breathing problems or chest pain
Hospital unit to outside care unit checklist

Chief complaint
☐ Why was patient admitted to hospital?
☐ If the result of a chronic disease, what are its history, treatments, complications, prognosis?

Hospital course
☐ Duration of stay in each hospital unit
☐ Therapeutic procedures done: indications and results
☐ Medications while in hospital. Effectiveness? Complications?
☐ General conditions at discharge

Diet
☐ Current diet as well as any restrictions and preferences

Allergies
☐ To medications as well as anything else. Include specific type of reaction (skin, pulmonary, anaphylaxis etc.), severity, type of exposure for trigger (enteric, topical, inhaled).

Activity
☐ Amount, type, frequency of exercise
☐ Activity restrictions?
☐ Bathroom privileges

Hygiene
☐ Bathing and any other: frequency and assistance/supervision required

Mental status
☐ Ability to communicate and understand instructions, such as other language. Sleep habits.

Other known diseases or injuries
☐ All diseases requiring continuing treatment or precautions
☐ Current status of each: chronic, recurrent, cured?
☐ Hospital/surgical history
☐ Hospitalizations: reasons, treatments, outcomes
☐ Surgeries: procedures, dates, indications, outcomes

Physical exam findings
☐ Positive findings only

I's & O's (Intakes and Outputs)
☐ Patient lines and access: intravenous lines- size and location. All other patient cannulas, including any drains, Foley catheter.
☐ Foley intake/output of each site, including oral, wound drainage, etc.

Labs and studies
☐ Current lab results, note all abnormal values
☐ Relevant older lab results
☐ Results of recent X-rays, CT, MRI, other studies

Drugs
☐ Daily analgesia required? Opiates?
☐ If so, how is respiration being monitored?
☐ All other meds taken by patient: dose, route (oral or other?), frequency
☐ Any other meds given since current problem began. Dose, frequency, response?

Social
☐ Family and/or friends contact information and visiting needs

Special instructions or findings
☐ Anything unusual or remarkable, not covered by above?
☐ Any special instructions or restrictions?
Emergency department to surgery checklist

S (Situation)
☐ Introduction of person- name, age and baseline physiology
☐ Chief complaint on arrival
☐ Advanced Directives
☐ Allergies
☐ Admitting diagnosis and provider

B (Background)
☐ Past medical history- chronic and relevant acute conditions, home medications
☐ Diagnostics- abnormal and relevant lab and imaging information
☐ Diagnostics awaiting results
☐ Current condition/problems: self-management goal, medical and nursing

A (Assessment)
☐ Current status- any change from presenting conditions
☐ Neurological status
☐ Vital signs
☐ Assessment of conditions related to admitting diagnosis
☐ Any abnormal findings (skin, wound)
☐ Health literacy initiation

R (Recommendation)
☐ Interventions needed within the next 12 hours
☐ Current and anticipated person and family concerns and needs
☐ Review of problems and plan of care
☐ Review of self-management goal
☐ My-story
☐ Face-to-face
☐ Person, family, RN actively participate in transitions to Med/Surg location