iSoBAR — a concept and handover checklist: the National Clinical Handover Initiative

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ABSTRACT

- Effective communication at clinical handover is important for improving patient safety and reducing adverse outcomes.
- In consultation with doctors, nurses and allied health staff in the Western Australian Country Health Service, we developed a clinical handover checklist, adapted from an existing tool for standardising communication.
- The acronym "iSoBAR" (identify–situation–observations–background–agreed plan–read back) summarises the components of the checklist.
- We designed a comprehensive iSoBAR handover form to reduce the number of existing clinical handover forms. The new form, with an accompanying toolkit, was initially trialled in the Kimberley region, but is now being adopted more widely.
- Early adoption of the new form has been attributed to extensive clinician involvement and leadership.
- There is a need for further research to assess whether the use of handover checklists improves patient outcomes.

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The failure of effective communication is a recurring theme in the patient safety literature,[1-3] specifically as it relates to clinical handover.[4] A review of local clinical incidents confirmed that this pattern was particularly evident for acutely ill, deteriorating patients who require transfer to a higher level of care. Important issues were:

- The failure to effectively communicate a patient's condition when seeking advice or "bed-hunting";
- The existence of multiple verbal and written contact points between service providers, each with highly individual and/or profession-dependent processes;
- Incomplete handover of accountability;
- The lack of an agreed plan of care; and
- Variable and overlapping formats of written communication.

The development of clinical handover systems such as standard operating procedures has been shown to reduce system failures.[4,5] A review of the literature identified limited tools for clinical handover and a lack of evidence favouring any particular approach. One such tool, the SBAR (situation–background–assessment–recommendation) checklist (developed by Kaiser Permanente in the United States),[6,7] prompts the user to provide information on each of these four elements at each handover event. While this tool showed promise, we wished to ensure clinical input and leadership before trialling it in our health care system.

1 The seven regions of the Western Australian Country Health Service (WACHS)*

* WACHS includes all regions marked on the map except Greater Metropolitan Perth. ◆

Issues pertaining to clinical handover are particularly relevant to Australia's largest country health system. The Western Australian Country Health Service (WACHS) (Box 1) covers an area of 2.53 million square kilometres, with a widely dispersed population of 454 000 people. The vast distances between populations create unique challenges in relation to attraction and retention of health care workers and provision of care locally, wherever possible. WACHS employs about 5662 full-time-equivalent staff, including 2310 nurses and 180 salaried and 150 contracted Visiting Medical Officers (VMOs). A high proportion of these are overseas-trained doctors and short-term locum appointments. Each year, WACHS manages an average of 325 000 emergency department visits, 380 000 inpatient bed-days, 96 000 hospital discharges and 10 000 transfers to tertiary hospital facilities, of which 7 000 are by either the Royal Flying Doctor Service of Australia or the St John Ambulance service. An analysis of local incident and clinical review reports indicates that up to 70% of adverse events occur because of miscommunication and at points of transition or handover of care.

In the WACHS context, effective handover procedures are vital. Hence our project set out to:

- Identify factors that influence miscommunication in clinical handover;
- Develop a standardised clinical handover checklist and protocol; and
- Reduce the number of written clinical handover forms.

Identifying factors that influence miscommunication in clinical handover

Analysis of three key sources of data — local clinical incidents, discussion with clinicians and vignettes of selected "patient journeys" — identified several consistent themes. These included:

- Complex patient factors and inconsistent handover processes that were highly person-dependent;
- Reliance on multiple players having local knowledge of the WA health care system;
- Duplication of processes, particularly written forms transferred between the various service providers.

We also discovered that, while there was often communication in one direction, the process of agreeing to and confirming a plan was frequently assumed, yet absent, resulting in confusion and incomplete handover of accountability.

Developing a standardised clinical handover checklist and protocol

In October 2007, a collaborative team was formed between WACHS and the Royal Perth Hospital. The team consisted of two part-time project managers with extensive nursing and rural experience from WACHS, and the Assistant Director of Clinical Services and a project officer with marketing experience from Royal Perth Hospital. After a review of the themes identified above, we determined to target acutely ill, deteriorating patients who required transfer to a higher level of care. The brief was to develop a standardised and transferable clinical handover process and checklist. The approach involved clinician consultation[8] and a review of processes using a human factors framework.[9,10] Potential handover issues and traps were identified by mapping patient journeys from a rural facility to a tertiary hospital. Existing work practices and schedules were also examined, so that handover tools could be incorporated into ingrained habits and patterns.[11,12]

Extensive discussion with doctors, nurses and allied health staff was used to establish a minimum dataset (a common set of information relevant to all handovers), which could be developed into a handover checklist or form. A broad range of clinicians and other personnel across WACHS were consulted, including transport providers and staff of the emergency department, intensive care unit and trauma services at the Royal Perth Hospital.

Agreeing to the minimum dataset was non-contentious. Initially, each data element identified was grouped under one of the four SBAR tool headings. However, after consultation and review, it was decided that the existing SBAR tool should be modified and expanded to better fit the local context. The tool was thus expanded to "iSoBAR", both a word and a mnemonic, which had resonance in the state's cyclone-prone north-west. The checklist now had two additional prompts compared with the original SBAR. Firstly, the "i", for "identify yourself and the patient", placed the patient's identity, rather than the diagnosis, in primary position and also provided a method of introduction. (This is particularly important when teams are widely spread geographically.) The second new prompt, "o" for "observations", was included to provide an adequate baseline of factual information on which to devise a plan of care. "S" ("situation") and "B" ("background") were unchanged, but "A" ("assessment") was changed to "agreed plan" and "R" ("recommendation") was changed to "read back" to reinforce the transfer of information and accountability (Box 2).

Throughout the development of the checklist, staff expressed frustration with inconsistent processes in arranging transfers and handover of patients from one site to another, as well as their concerns about working under pressure, high staff turnover, dealing with critically ill patients in local services with an inadequate level of care available, and the urgent need to find a more appropriate level of care. The project team and staff shared specific examples of adverse events relating to handover and discussed system changes that could improve patient outcomes in these cases. While all staff expressed a need for a more systematic and consistent system of handover, they underlined the need for a pragmatic approach that would reduce duplication and fit into existing work patterns.[13]

The iSoBAR handover form (*pages S154-S155*) was developed and printed for trial at six inpatient sites in the Kimberley region, to identify any issues before wider implementation.[14] The team spent time in the Kimberley region, meeting with staff on all shifts and attending meetings with medical staff and managers. Any change program in rural and remote Australia requires extensive travel and resilience on the part of project team members. In this case, they covered over 8000 km of air and/or road travel to attend staff handovers on all shifts. Making time to build relationships and support staff by listening and informing rather than telling and directing were key elements of the change management approach.[13]

Reducing the number of written clinical handover forms

The team's marketing officer was involved in developing an implementation toolkit for iSoBAR, which included an e-learning compact disc package, posters, lanyards and fridge magnets. During the initial roll-out in the Kimberley region, the team recognised an environment ready for change across WACHS and decided to test the form and toolkit more broadly. The next phase of the project offered education and project support, but participation was entirely voluntary. Regional contacts were identified, and after education and information sessions, six of the seven regions began testing the form and toolkit. Clinicians were advised that the form's content or context could be modified as long as the iSoBAR format was retained. It soon became clear that allowing people to apply the

2 iSoBAR marketing material

iSoBAR: a handover "how to"

i	IDENTIFY	Introduce yourself and your patient
S	SITUATION	Why are you calling? Briefly state the problem
o	OBSERVATIONS	Recent vital signs and clinical assessment
B	BACKGROUND	Pertinent information related to the patient
A	AGREED PLAN	What needs to happen? Assessment of the situation
R	READ BACK	Clarify and check for shared understanding. Who is responsible for what and by when?

Government of Western Australia
WA Country Health Service
Hospital

Inter Hospital Patient Transfer ADULT/CHILD HANDOVER

Surname | URN
Given Names | DOB
Address | Postcode | Gender

IDENTIFY

Date **Time**

Medicare No. | Ambulance fund number | DVA colour and number

☐ AB ☐ TSI ☐ ABTSI | Primary language spoken | Interpreter required ☐ Yes ☐ No

Contact person/NOK | Contact No. | NFR status documented ☐ Yes ☐ No

Relationship | Aware of transfer ☐ Yes ☐ No | Organ donor ☐ known ☐ Unknown

SITUATION

Referring hospital contact person: *Name* | Contact number

Signature *Designation* | Usual GP/Contact No.

Principal diagnosis/problem | **Other diagnoses/problems**

Reason for transfer

OBSERVATIONS

AIRWAY	BREATHING	COLOUR	CIRCULATION SKIN	PULSE	BEHAVIOURAL
☐ patent	☐ unremarkable	☐ unremarkable	☐ unremarkable	☐ unremarkable	☐ Harm to self
☐ compromised	☐ shallow	☐ pale	☐ warm / hot	☐ regular	☐ Harm to others
☐ ventilated	☐ deep	☐ flushed	☐ cool / cold	☐ irregular	☐ Requires physical restraint
	☐ rapid	☐ mottled	☐ dry	☐ slow	
	☐ slow	☐ cyanotic	☐ moist / clammy	☐ rapid	Glasgow Coma Score
	☐ laboured			☐ strong	
	☐ asymmetrical	C-SPINE		☐ weak	Usual conscious state *(if known)*
	☐ audible wheeze	☐ immobilised		☐ not palpable	

Airway management plan

Airway compromise relayed to transport provider ☐ Yes *(Time)* ☐ No Outcome;

Vital signs *time:*	Temp.	Pulse	Resp rate	B.P.	SpO_2	☐ O_2 rate/device	Pain Score

☐ Intravenous (IV) access *(gauge, site, insertion time/date)* | ☐ IV fluids charted

☐ Second IV access | ☐ Fluid balance Chart

☐ No access required ☐ Failed IV access ☐ Arterial line ☐ Central venous line | ☐ Time last voided

Fasted from ☐ Food ☐ Fluids | ☐ Continent ☐ Incontinent

☐ Intercostal catheter ☐ Nasogastric tube ☐ Other | ☐ Indwelling catheter

BACKGROUND

Past relevant medical history

Current episode medications *(refer to Medication Chart for time last given)*	**Effect**

Investigations *(results if available)* Results attached ☐ Yes ☐ No

Relevant Social issues

ALERTS

Mental Health Act
☐ Voluntary
☐ Involuntary
☐ Risk assessment

Drug Allergy
☐ *(state drug/reaction)*

☐ **Forensic**
☐ **Bariatric Client**
☐ **Microbiological**
☐ **Pressure area risk**
☐ **Other:**

AGREED PLAN

Dietary needs | Mobility

Receiving hospital | Unit

Receiving doctor | Contact number

Bed arranged with: | Confirmed bed ☐ Yes ☐ No

Transfer form faxed to receiving hospital ☐ Yes ☐ No

ATTACH ALLERGY STICKER

WACHS MEDICAL RECORD TRIAL INTER HOSPITAL TRANSFER

Government of Western Australia
WA Country Health Service

Surname	URN
Given Names	DOB
Address	Postcode / Gender

Inter Hospital Patient Transfer ADULT/CHILD Handover (cont.)

AGREED PLAN

Medication orders ☐ Charted ☐ SJAA Medication Form *completed for road transfer*

Observation/frequency

Advice given *(and by whom)*

Transfer Information Patient Weight Patient Height Patient Luggage *1Piece <8kgs* ☐ Yes ☐ No

The treating Medical Officer *(or most senior clinician)* **must authorise this section**

Name of medical officer Signature

Mode of transport ☐ Private ☐ St Johns Ambulance ☐ Emergency helicopter ☐ Commercial plane ☐ Health service car ☐ RFDS (fixed wing) ☐ Commercial bus/train ☐ Other

Escort ☐ None ☐ Carer ☐ Driver ☐ Registered midwife ☐ Doctor ☐ Registered nurse ☐ Enrolled nurse ☐ Mental health nurse ☐ Ambulance officer ☐ Paramedic ☐ Police Escort weight *(aeronautical transfer only)* Kg

Positioning ☐ Sitting ☐ Stretcher ☐ Physical restraint required ☐ Other

WACHS Clinical Urgency for transfer ☐ Resuscitation *(immediate)* ☐ Emergent *(request transfer within 4-6 hours)* ☐ Urgent *(transfer within24hrs)* ☐ Semi urgent *(within 24-36 hrs)* ☐ Non urgent *(greater than 36hrs)*

Transport Providers Tasking Priority ☐ SJAA ☐ RFDS ☐ Priority 1 ☐ Priority 2 ☐ Priority 3

READ BACK

Interventions *(Clarify points, who is responsible for organising what, interventions required and by whom)*	**By Whom**	**By When**

Psychiatric patient information

PSYCHIATRIC

Case worker name and contact no. Forms under the Mental Health Act ☐ Completed ☐ Nil

☐ Mental state examination ☐ Other agency involvement *(whom)*

☐ Rural link 1800 552 002 contacted for advice (after hours)

Airway compromised ☐ Yes ☐ No ☐ Airway management plan - see front of chart

Sedation	Time	Effect

Completed by *(print, sign, designation)* Date/Time Patient discharged time:

3 Tips from this project for engaging clinicians in change

- Use credible clinicians as project leaders
- Go on site — any time, anywhere
- Listen more than talk
- Fit the change into existing work practices
- Create opportunities for networking and sharing ideas ◆

tool and concept in their own context had a positive influence on their sense of ownership and adoption. These were positive signs that would support ongoing implementation and transferability in an environment characterised by high workforce turnover and substantial orientation and educational requirements.

Early response to the iSoBAR initiative

The iSoBAR form and toolkit were accepted and widely used by WACHS clinical staff. (For tips on engaging clinicians in this type of project, see Box 3.) The form is currently being used in a number of other settings, including shift handovers, emergency department and theatre-to-ward transfers, and for WACHS allied health referrals. Use of the form has spread to some facilities in metropolitan WA, although the extent of uptake is as yet unknown.

The early adoption of the new iSoBAR form was attributed to extensive clinician involvement and leadership.[15] The form has become part of the WACHS clinical staff orientation program and is now included early in the WACHS nurse graduate program of teaching. Networks of regional staff are sharing ideas and have started to evaluate the progress of implementation. At the time of writing, the evaluation is continuing, but early indications are that the form, educational CD and marketing tools are being used extensively and in a wide range of contexts. Staff feel that iSoBAR particularly suits local conditions, has created a greater sense of ownership among rural staff, and has reduced the duplication of paperwork.

Concluding comments

The need for a handover checklist has been highlighted by the National Clinical Handover Initiative of the Australian Commission on Safety and Quality in Health Care. This initiative aims to develop new and creative approaches to handover safety and excellence. The Commission has supported a number of handover projects (including iSoBAR), placing Australia at the forefront of clinical handover research. This WA rural project demonstrates that using an organisational change approach to the development and implementation of iSoBAR as a handover checklist is readily achievable with the early involvement of all local stakeholders.[8] WACHS is now monitoring the use of iSoBAR and assessing whether a measurable difference in patient outcomes may be demonstrated. Early feedback suggests that staff consider iSoBAR particularly well suited to local conditions and easy to integrate into existing work processes to reduce duplication of paperwork and processes. Whether using a handover checklist improves patient safety and reduces adverse outcomes is yet to be established. However, we anticipate that addressing effective communication through a systematic and standardised approach, led and tested by clinicians, will have a positive impact on both staff and patients.

Competing interests

None identified.

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References

1 Vincent C. Patient safety. London: Churchill Livingstone Elsevier, 2006.
2 Williams JR. How literacy and communication initiatives improve patient safety. *Focus Patient Saf* 2005; 8 (3): 3-4.
3 The Joint Commission. Preventing infant death and injury during delivery. *Sentinel Event Alert* 2004; Issue 30. http://www.jointcommission.org/SentinelEvents/SentinelEventAlert/sea_30.htm (accessed Feb 2009).
4 World Health Organization Collaborating Centre for Patient Safety Solutions. Communication during patient hand-overs. *Patient Saf Solut* 2007; 1 (Solution 3). http://www.ccforpatientsafety.org/common/pdfs/fpdf/presskit/PS-Solution3.pdf (accessed Feb 2009).
5 National Patient Safety Agency. Safe handover: safe patients. London: British Medical Association, 2004. http://www.idwl.info/JDC%2021%202004-05%20Handover%20Booklet.pdf (accessed Feb 2009).
6 Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Qual Saf Health Care* 2004; 13 Suppl 1: i85-i90.
7 Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. *Jt Comm J Qual Patient Saf* 2006; 32: 167-175.
8 Ham C. Improving the performance of health services: the role of clinical leadership. *Lancet* 2003; 361: 1978-1980.
9 Gosbee J. Human factors engineering and patient safety. *Qual Saf Health Care* 2002; 11: 352-354.
10 Berwick DM. Not again! Preventing errors lies in redesign — not exhortation. *BMJ* 2001; 322: 247-248.
11 Resar RK. Making noncatastrophic health care processes reliable: learning to walk before running in creating high-reliability organizations. *Health Serv Res* 2006; 41: 1677-1689.
12 Nolan T, Resar R, Haraden C, Griffin FA. Improving the reliability of health care. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement, 2004.
13 Degeling P. Realising the developmental potential of clinical governance. *Clin Chem Lab Med* 2006; 44: 688-691.
14 Lingard L, Espin S, Rubin B, et al. Getting teams to talk: development and pilot implementation of a checklist to promote interprofessional communication in the OR. *Qual Saf Health Care* 2005; 14: 340-346.
15 Newton PJ, Davidson PM, Halcomb EJ, et al. An introduction to the collaborative methodology and its potential use for the management of heart failure. *J Cardiovasc Nurs* 2006; 21: 161-168.

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