AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

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Improving documentation at transitions of care for complex patients

Professor Elizabeth Manias, Professor Tracey Bucknall, Professor Alison Hutchinson, Professor Mari Botti and Ms Jacqui Allen from Deakin University (brokered by the Sax Institute) have prepared this report on behalf of the Australian Commission on Safety and Quality in Health Care

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Preface

The Australian Commission on Safety and Quality in Health Care (the Commission) is committed to improving and supporting effective communication with patients, carers and families, and between clinicians and multidisciplinary teams.

In Australia there are an increasing number of people who have complex and chronic healthcare needs, and it is common for their care to be provided by a number of different clinicians and health providers, across many different settings. This includes care delivery across hospitals, private rooms, general practices and other locations.

The points of handover when patients move between clinicians are known as 'transitions of care', and these are recognised as times of high risk for patients as there is an increased risk of information being miscommunicated or lost.

Effective communication between clinicians and across multidisciplinary teams when these transitions occur is essential to ensuring safe, continuous and coordinated care. One mechanism to support effective communication and safeguard patient safety across transitions is to ensure that the information available to clinicians is clear, current, relevant, accurate and complete.

To develop a better understanding of what information should be available to clinicians at transitions of care, the Commission engaged Deakin University to conduct a rapid literature review on improving documentation at transitions of care for patients with complex healthcare needs. The review focuses on whether there is evidence about the:

- safety and quality issues related to poor documentation for complex patients at transition of care
- information that needs to be recorded, at a minimum, to support safe transitions of care
- form or structure of the documentation required at different transitions of care.

Key findings

The review finds there is strong evidence that poor documentation of information at transitions of care is a key safety and quality issue for patients with complex healthcare needs. Poor documentation can lead to adverse events, including:

- higher rates of readmission to hospital
- failure to follow up after hospital discharge
- increased costs related to inadequate or reduced care coordination
- lack of availability of important diagnostic results
- medication errors, including missed medications, dose errors and emergency medications being ceased accidentally or missed.

The review identifies common information elements that at a minimum should be available to clinicians to support effective communication at transitions of care for patients with complex healthcare needs. The minimum information elements identified in the report are:

- patient details
- family and carer support details
- document author and location

- document recipients and location
- encounter details
- problems and diagnosis
- clinical synopsis
- relevant pathology and diagnostic imaging investigations
- clinical interventions
- medications
- allergies and adverse drug reactions
- alerts
- arranged services
- recommendations for management
- information provided to patient, carer and family
- nominated primary health providers.

The authors recognise that patients' needs may vary. Clinicians should therefore consider a patient's individual requirements, type of transition of care, and tailor the information to the specific needs of the patient. The review also categorises the information that should be available for eight specific complex patient groups. The report also acknowledges there is insufficient evidence about the minimum information content required for complex patients from specific demographic backgrounds, including people with a first language other than English, refugees, low-income earners and those from rural and remote areas.

The structure and form of documentation is important. There is evidence that tools, checklists and templates can be a helpful guide, and act as effective prompts for clinicians to identify what needs to be documented, and the key areas to consider when documenting information.

The report found that the use of inconsistent abbreviations and lack of standardised terminology in the healthcare record can affect how documented information is understood. This can result in information being in some cases misinterpreted.

Recommendations of the report

The authors of the report recommend a set of common information elements that, at a minimum, should be available to clinicians when transferring care for patients with complex healthcare needs. When documenting clinical information, the report recommends that clinicians consider the particular needs of their patients, the type of transition of care, and tailor the information accordingly. Further research on the minimum information content required for complex patients from specific demographic backgrounds was also recommended.

The report recommends standardised, structured recording of information while maintaining flexibility to communicate patient care across transition points. It is proposed that the tools, checklists and templates identified in the review could be helpful to support documentation of clinical information, within the particular clinical setting for which they have been developed.

The report recommends the need for standardised language and terminology and that a national list of approved abbreviations for use in documentation be developed.

Next steps for the Commission

The Commission will consider the report's recommendations. The Commission will use these findings to inform future work on improving clinical communication at transitions of care.

Findings of this review will inform the development of guidance materials and resources to support consumers, health service organisations and clinicians communicate safely at transitions of care. This will also support implementation of the National Safety and Quality Health Service (NSQHS) Standards (second edition).

Actions within NSQHS Standards (2nd ed.) recognise the importance of documenting clinical information in the healthcare record, and its role in supporting effective communication and safe care. These actions are designed to protect the public from harm and improve the quality of health service provision.

IMPROVING DOCUMENTATION AT TRANSITIONS OF CARE FOR COMPLEX PATIENTS

Final report

Prepared by Deakin University (brokered by the Sax Institute) on behalf of the Australian Commission on Safety and Quality in Health Care

Investigators: Professor Elizabeth Manias, Professor Tracey Bucknall, Professor Alison Hutchinson, Professor Mari Botti, Ms. Jacqui Allen

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Report Summary

The Australian Commission on Safety and Quality in Health Care, through the Sax Institute, appointed researchers from Deakin University to conduct a review on improving documentation at transitions of care for complex patients.

The review focuses specifically on complex patients undergoing transitions of care where the transition points include admission, discharge, transfer of care across settings, referrals, requests and follow-up. More specifically, the review examines documentation involving transitions to, within and from acute care settings. The focus is on communication across multidisciplinary teams, moving beyond clinical handover at shift-to-shift change.

The content is considered in terms of three review questions:

1. What is the evidence regarding safety and quality issues related to poor documentation for complex patients at transitions of care?
2. What is the evidence, including best practice and guidelines, regarding the minimum information content requirements for recording information at different transitions of care?
3. What is the evidence regarding the form or structure of the documentation required at different transitions of care?

A total of 59 papers were included in the review. The most common research designs used were tool or guideline development and evaluation, and pre- and post-intervention designs. Other research designs used included longitudinal case study or cohort designs, qualitative interview or observational designs, retrospective clinical audits, prospective clinical audits, and survey designs. Only two studies involved the conduct of randomised controlled trials. Most studies were completed in the United States (n=23), followed by Australia (n=15) and Canada (n=11). The remaining studies were conducted in countries situated in Europe and Asia.

What is the evidence regarding safety and quality issues related to poor documentation for complex patients at transitions of care?

There was extensive evidence that poor documentation led to different types of adverse events in complex patients, which included the following:

- high readmission rates to hospital
- failure to follow up after hospital discharge
- increased costs related to care coordination
- lack of referrals to community service providers
- increased presentations to emergency departments and increased lengths of hospital stay
- sub-optimal management of patients' conditions, inadequate assessment of functional state and inadequate detection of preventable complications in intensive care units

- sub-optimal management of patients' ventilation and an increased incidence of accidental withdrawal of breathing tubes in intensive care units
- lack of availability of important diagnostic results
- increased risk of intra-operative complications, such as high lactate levels, high glucose levels thereby requiring an insulin infusion, low blood pH levels, and high blood carbon dioxide levels
- medication errors, including delays and omission of antibiotics, missed medications and dose errors, and emergency medications being ceased accidently or missed
- patient deterioration requiring medical emergency team calls and patient falls.

Gaps in evidence exist in terms of specific demographic characteristics of complex patients. Such gaps relate to people of non-English speaking backgrounds, people seeking or who have been granted refugee status, homeless people, people with mental illness and people with drug and alcohol disorders. Other vulnerable groups for whom evidence gaps are apparent include economically disadvantaged individuals comprising those with low incomes and those who are unemployed. Gaps also exist in relation to patients and healthcare settings in rural and remote areas.

What is the evidence regarding the minimum information content requirements for recording information at different transitions of care?

The evidence was examined to determine common elements for the minimum information content that should be available at any transition of care point, as well as to determine variations of this information. The following common elements were identified for all complex patient types:

- patient details
- family and carer support details
- document author and location
- document recipients and location
- encounter details
- problems and diagnosis
- clinical synopsis
- relevant pathology and diagnostic imaging investigations
- clinical interventions
- medications
- allergies and adverse drug reactions
- alerts
- arranged services
- recommendations for management
- information provided to patient, carer and family
- nominated primary health providers.

Evidence for minimum information content was also identified for complex patient groupings including:

- older patients
- hospitalised children
- patients with mental illness
- patients with multiple comorbidities
- patients moving along the peri-operative pathway
- patients admitted to intensive care
- Aboriginal and Torres Strait Islander patients
- palliative care patients.

Minimum information for these complex patient groups included information in addition to the common elements.

For older patients, examples of additional content information included:

- clinical synopsis: resuscitation code status, presence and the nature of pain, and social and lifestyle history – psychosocial assessment
- medications: alterations for renal and liver insufficiency, and plans for deprescribing
- alerts: presence of geriatric syndromes, such as incontinence, falls, functional decline, delirium, dementia and frailty.

For hospitalised children, examples of additional content information included:

- information provided to patients, carers and family: child involvement in care, health literacy of child in relation to growth and development, parental involvement in care and need for an interpreter
- clinical synopsis: interpretation of relevant observations (behaviour – playing, sleeping, irritability, lethargic; cardiovascular state – skin and mucus membrane colour, heart rate and rhythm; respiratory state – rate, accessory muscle use, grunting).

For patients with a mental illness, examples of additional content information included:

- clinical synopsis: assessment of drug and alcohol consumption, interpretation of relevant observations, including mental health state and blood pressure, social and lifestyle history (psychosocial assessment, interpretation of relevant pathology and diagnostic imaging, including blood glucose and blood cholesterol levels)
- information provided to patient, carers and family: family and carer support.

For patients with multiple comorbidities, examples of additional content information included:

- medications: methods to facilitate administration, dose administration aids and crushing tablets, medication adherence with prescribed regimen
- information provided to patients, carers and family: dietary management, activity ability and goals, allied health care involvement, home assistance and community support, rehabilitation program, outpatient or outreach service follow-up.

For patients moving along the peri-operative pathway, examples of additional content information included:

- information provided to patients, carers and family: informed consent

- post-operative care: evaluation of wound, coughing and deep breathing, instructions for diet, medications, pain relief, wound care, stoma care, wires and drain care.

For patients admitted to intensive care, examples of additional content information included:

- problems and diagnoses: reason for admission to intensive care, management of comorbidities by external health care teams
- clinical interventions: endotracheal tube and cuff, ventilation and oxygenation management, intravenous and arterial lines, ulcers of the skin and gastrointestinal tract
- information provided to patients, carers and family: family and carer counselling, preferences for receiving treatment if patient becomes incapacitated, patient's decision about life-saving treatment.

For Aboriginal and Torres Strait Islander patients, examples of additional content information included:

- clinical synopsis: interpretation of relevant observations, including vital signs, neurological state, and oxygenation, social and lifestyle history (psychosocial assessment, assessment for drug and alcohol consumption, assessment for depression, assessment of patient diet)
- recommendations for management: consultation with Aboriginal and Torres Strait Islander health worker, referral to rehabilitation program, outpatient or outreach service follow-up.

For palliative care patients, examples of additional content information included:

- clinical synopsis: resuscitation code status
- information provided to patients, carers and family: preference for care, preferred place of death.

What is the evidence regarding the form or structure of the documentation required at different transitions of care?

All 59 research papers were examined for evidence of standardised tools, checklists and templates that provide the structure of documentation for different transitions of care. There were 14 identifiable tools, checklists and templates in the papers. These provide helpful information to guide health professionals in documenting patient care at transition points, and can be used as prompts for their documentation, which can be tailored and individualised to suit specific patients in their care.

Inconsistent use of abbreviations in healthcare records and the lack of standardised language and terminology were also identified as key safety and quality issues when considering the form of documentation. This affected the readability and interpretability of documents.

Table 1: Identified tools, checklists and templates providing structure for documentation for different transitions of care

Name of tool, checklists and templates	Description of tool	Use
BEFORE YOU ADMIT tool	Polypharmacy Goals of care Delirium Frailty Aspiration Falls	Areas to check before admission of an older patient
BOOST (Better Outcomes for Older adults through Safe Transitions) tools	8P Risk assessment (problem medications, psychological, principal diagnosis, polypharmacy, poor health literacy, patient support, prior hospitalisation in last six months, palliative care) General assessment of preparedness Written discharge instructions Preparation to Address Situations Successfully (PASS) Discharge Patient Education Tool (DPET) Teach back	Six tools that can be used during care transitions for older people
C-CEBAR (mnemonic)	C - Contact of case physiotherapist of acute hospital C - Contact details of patient E - Expectations of receiving physiotherapist for required rehabilitation therapy B - Background and history A - Assessments and function R - Responsibilities and risk management, including safety precautions and unanticipated patient's response	Management of complex patients by physiotherapists across transitions
Checklist of Safe Discharge Practices	Hospital Primary care Medication safety Follow-up Home care	Aspects to consider in discharge of complex patients

Name of tool, checklists and templates	Description of tool	Use
	Communication Patient education	
D-SAFE (Discharge Summary Adapted to the Frail Elderly Patient)	Medical discharge summary Discharge prescription summary	Aspects to consider for discharge of frail, older patients to and from acute care settings
DEFAULT (mnemonic)	D - Do not resuscitate (DNR) status clear E - Endotracheal tube and cuff is safe F - Fluid strategy and feeding plan A - Agreed analgesia and sedation U - Ulcer of the skin and gut L - Lines out T - Tidal volumes less than 8 ml/kg	Aspects to consider between different care teams for communication about patients in intensive care
INTERACT II, Stop and Watch Tool (mnemonic)	S - Seems different than usual T - Talks or communicates less O - Overall needs more help P - Pain – new or worsening; participated less in activities A - Ate less than usual N - No bowel movement in three days; or diarrhoea D - Drank less W - Weight change A - Agitated or nervous more than usual T - Tired, weak, confused, or drowsy C - Change in skin colour or condition H - Help with walking, transferring, toileting more than usual	Aspects to consider in transfer of older people between residential aged care facilities and emergency departments

Name of tool, checklists and templates	Description of tool	Use
I-PASS (mnemonic)	I - Illness severity; stable, needs watching, unstable P - Patient summary; summary statement, events leading to admission, hospital course, ongoing assessment, plan A - Action list; to do list, time line and ownership; know what is going on, plan for what might happen S - Situation awareness and contingency planning S - Synthesis by receiver; receiver summarises what has been heard, asks questions, restates key actions	Aspects to consider when paediatric patients move between acute care units and intensive care units
MDS for PICU (Minimum Data Set for Paediatric Intensive Care Unit)	Identification bar highlights patient's trajectory in red, yellow or green Allergies Medications Pertinent patient history Body system areas 12-hour follow-up plan Contingency plan Read-back from sender to receiver	Aspects to consider when different care teams manage paediatric patients in intensive care
Mind the Gap Tool	Health professional-related characteristics Transitional care delivery process Patient-related characteristics: adolescents Patient-related characteristics: parents	Aspects to consider in the transition of adolescents with chronic conditions from paediatric to adult hospital and rehabilitation
7Ps flowchart	P - Problem medications P - Punk (depression) P - Principal diagnoses P - Polypharmacy P - Poor health literacy P - Patient support P - Prior hospitalisation	Aspects to consider when older patients are discharged from acute care settings

Name of tool, checklists and templates	Description of tool	Use
RAPaRT (Rapid Assessment Prioritisation and Referral Tool)	Previous regular help Hospitalised in past six months More than three medications prescribed Walking aids or assistance Someone else shopping Lost weight recently, eating poorly Falls in the past six months	To identify when referral to an allied health professional is needed for complex patients presenting to emergency departments
PSOST (Providers' Signout for Scope of Treatment)	Brief history of present illness Past medical history Resuscitation code status Significant laboratory or diagnostic test results, ''to do'' list of laboratory tests and procedures Care plan	Aspects to consider by health professionals for patients receiving palliative care
3-Ds Checklist (Diet, Drugs, Discharge plan)	Diet Proton pump inhibitor use *Helicobacter Pylori* eradication regimen Non-steroidal anti-inflammatory drug use Complete blood count Discharge plan time Follow-up in gastroenterology clinic, general practitioner or endoscopy clinic	Aspects to consider by health professionals after patients' discharge following endoscopy for upper-gastrointestinal bleeding

Conclusion

The review has identified the importance of flexible standardisation and structured documentation. Three review questions have been addressed.

There is evidence that poor documentation is a safety and quality issue for complex patients at transitions of care.

There is evidence of the common elements that should be included as minimum data when recording information for complex patients at transitions of care. Minimum data requirements vary for various subgroups of complex patients. Health professionals need to consider the particular needs of complex patients, and to tailor the minimum data accordingly.

The structure of documentation is important, and tools, checklists and templates can act as effective prompts for identifying key areas to consider. It is recommended that these tools, checklists and templates are used in practice, within the particular clinical settings for which they have been developed.

There are gaps in evidence regarding complex patients with specific demographic characteristics, especially in terms of socioeconomic and cultural aspects of vulnerability. It is suggested that further research should be conducted in these areas.

Background and introduction

In April 2016, the Australian Commission on Safety and Quality in Health Care appointed researchers from Deakin University to review and report on the evidence regarding safety and quality issues, minimum information content requirements and the tools and strategies for documentation at transitions of care for complex patients. The aim of this review is to inform the future development of policies and other resources relating to documentation to assist health services, health professionals, patients and their families. This report contains the findings of the integrative review, a summary of the evidence base of tools, checklists and templates used to convey information around transitions of care, and concludes with key recommendations.

Aim

The aim of this review was to examine documentation at transitions to, within and from acute care settings. The content is considered in terms of the three review questions:

Question 1: What is the evidence regarding safety and quality issues related to poor documentation for complex patients at transitions of care?

Question 2: What is the evidence, including best practice and guidelines, regarding the minimum information content requirements for recording information at different transitions of care?

Question 3: What is the evidence regarding the form or structure of the documentation required at different transitions of care?

The following definitions have been used for the purpose of the review.

Complex patients comprise patients with multiple care needs who are served by multiple providers, who have several comorbidities, and who are possibly vulnerable. For the purpose of this review, these are patients who access acute care settings at some stage. Aside from those with multiple care needs, complex patients are people with disadvantaged socioeconomic backgrounds, mental illness and behavioural traits that present challenges in caring for them.

Documentation is the information content that is transmitted in a written format. For the purpose of this review, the interest is in evidence for safety and quality issues that arise independently of the media used for the documentation, such as the electronic medical record or the use of a hand-held device. Therefore, the simple use of a particular medium is not considered sufficient evidence for safety and quality.

Transitions of care include admission, discharge, transfer of care across different settings, referral, requests and follow-up. Home is also considered as a transition point, and therefore formal and informal carers may comprise the team caring for complex patients. Transitions involve care by teams within the same acute care settings, as well as those occurring from acute care settings to home, rehabilitation, aged care facilities and primary care settings.

Description of method used for searching and selecting research papers

The search strategy was devised by combining the key headings and text words associated with the review. These variables were identified using the following categories: setting, perspective, population, activity and phenomenon of interest.

Table 2: Search terms and major subject headings and text words with truncation (*) for electronic database searches

Search term	Major subject headings and text words with truncation
Setting	hospitalization, hospitalisation, tertiary care, specialt*, acute care, hospital in the home, day surgery, day procedure, emergency, operating room, operating theat*, radiology
Perspective	patient centred care, patient centered care, patient care, person centred, person centered, family centred care, family centered care, partnership team, team communication, partnership, communication
Population	complex patient*, severe illness*, comorbid*, frail, chronic* ill*, chronic disease, vulnerable, socioeconomic status, acuity, multiple provider*, multiple medications, multiple chronic conditions, frequent hospitalisations, frequent hospitalizations
Activity-written transitions	'hand off (patient safety)', handoff, hand-off, handover, hand-over, transition* care, 'continuity information', admission, discharge, transfer of care, continuity of patient care, referral, request*, follow-up, follow up, intrahospital, intra-hospital, interhospital, inter-hospital, interdepartmental, inter-departmental, transfer care, discharge plan*, discharge pathway*, patient transfer, continuity care, patient care conference*, integrat* care, integrat* pathway*, care coordinat*
Phenomenon of interest	documentation, patient record*, nurs* record*, medical record*, chart*, checklist, tool, minimum data, digital record, guideline, case record, discharge summar*, referral letter

The literature search was conducted in the following electronic bibliographic databases: The Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete (Ebscohost), Medline (Ebscohost), which contains the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), PsycInfo (Ebscohost), EMBASE, and Informit. Search dates within each database covered from January 2005 to April 2016.

In addition to electronic databases searches, hand searching of reference lists was conducted for reports selected for eligibility assessment. Cochrane systematic reviews and integrated reviews were searched in an effort to locate relevant papers. However, reviews

themselves were not included in the final dataset. The review was limited to research literature. Higher degree theses were eligible as grey literature sources, and were searched for within the selected electronic databases. Aside from conference papers that were available in the electronic databases, the grey literature was searched using Google Scholar for sources that comprise original, peer reviewed research. Two separate searches were undertaken – one for organisational documents and the other for government documents.

Table 3: Combination of search terms for accessing grey literature in Google Scholar

Type of documents sought	Combination of search terms used
Organisational documents	(“acute care”) AND (“partnership team” OR “communication”) AND (“complex patient” OR “multiple provider” OR “multiple medications” OR “multiple chronic conditions” OR “frequent hospitalisations”) AND (“transition of care”) AND (documentation OR “medical record” OR “discharge summary” OR “referral letter”) site:org.au PDF
Government documents	(“acute care”) AND (“partnership team” OR “communication”) AND (“complex patient” OR “multiple provider” OR “multiple medications” OR “multiple chronic conditions” OR “frequent hospitalisations”) AND (“transition of care”) AND (documentation OR “medical record” OR “discharge summary” OR “referral letter”) site:gov.au PDF

Papers were included if they involved an intersection of the five categories of setting, perspective, population, activity and phenomenon of interest. Only papers that provided evidence of empirical research with respect to these categories were included. The search strategy was developed in consultation with a research librarian who was experienced in conducting searches for literature and systematic reviews. Studies were selected if they described any form of documentation process at the transition of care to, within and from acute care settings, and the studies described communication in the transition of care.

Papers were excluded if they comprised research originating in primary or secondary health care settings with no involvement of acute care settings. Commentaries, opinion papers and editorials were also excluded. A language restriction was applied, with non-English reports excluded. Papers comprising protocols for the conduct of research on documentation were also excluded if no empirical work was undertaken. Many guidelines have been developed for assessing and managing single conditions, which rarely referred to transitions of care, or communication between health professionals. Such guidelines have focused on investigations, and pharmacological and non-pharmacological treatments. These guideline papers have also been excluded. Many intervention trials have been conducted on improving clinical outcomes across transitions of care, which have not involved improved documentation as a key component of the interventions. These trials have been excluded from the review.

Results of included papers

The total number of articles identified from bibliographic databases was 1889. A separate grey literature search using Google Scholar led to an additional 11 results. Hand searching of relevant papers was undertaken to identify additional relevant papers. Cross referencing identified 22 papers as possibly relevant.

Table 4: Papers derived from bibliographical databases

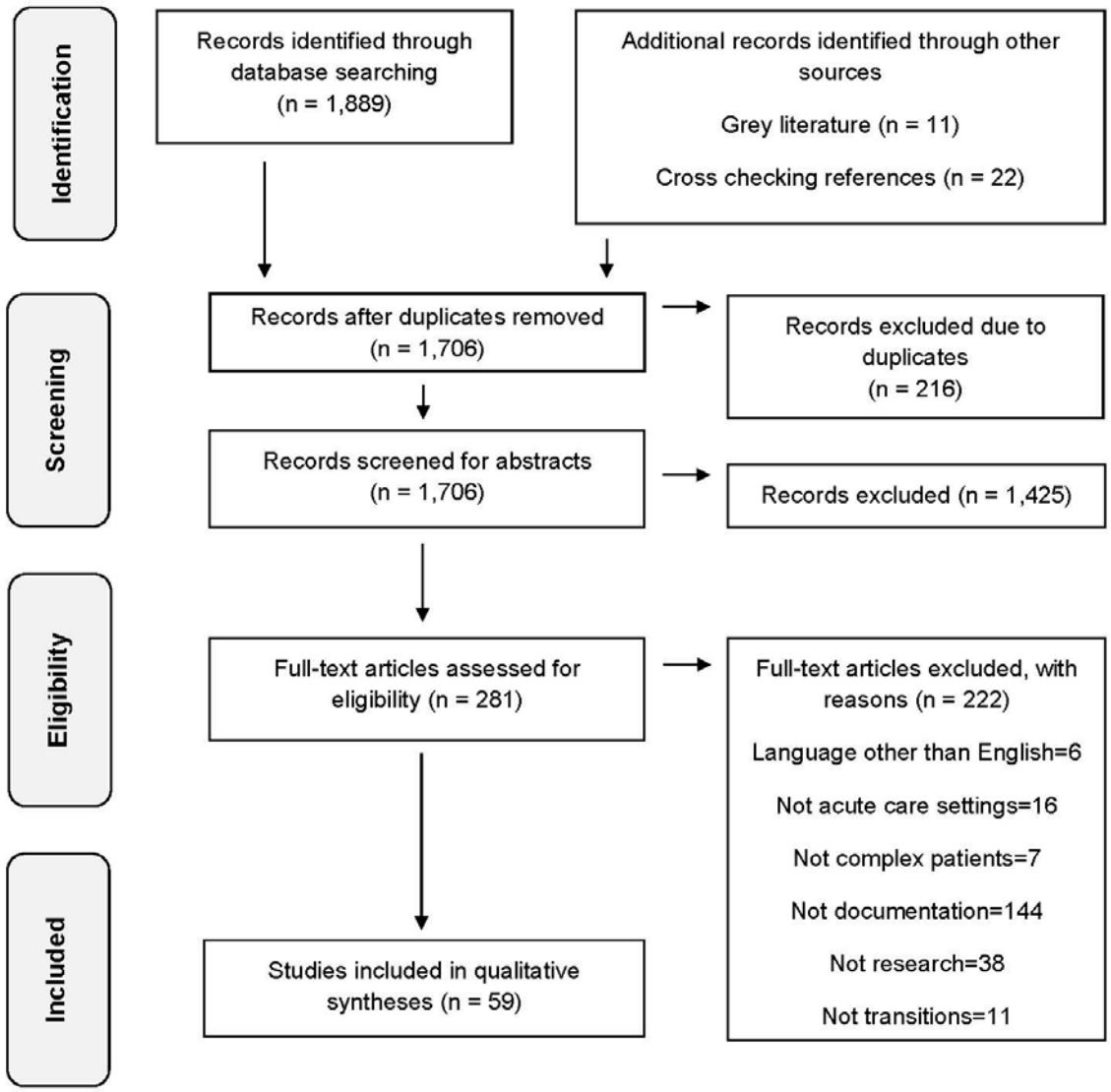
Database	Results
Embase	1058
Medline (also contains Cochrane Reviews)	488
Informit	16
PsycInfo	16
CINAHL	311

Following an inspection of all abstracts obtained from the literature, and an examination of the full-text papers of potentially relevant papers, a total of 59 papers were included in the review. A number of different research designs were used to examine documentation at transition points. Research designs involved tool or guideline development and testing (n=19), pre- and post-intervention designs (n=11), longitudinal case study or cohort designs (n=3), qualitative interview or observational designs (n = 9), retrospective clinical audits (n=8) and prospective clinical audits (n=1), survey designs (n=6) and randomised controlled trials (n=2). One study comprising interviews also involved the conduct of a retrospective audit. Another study comprising a retrospective audit also involved the conduct of a survey. Most studies were completed in the United States (n=23), followed by Australia (n=15), and Canada (n=11). Remaining studies were conducted in the United Kingdom (n=6), Hong Kong (n=1), Austria (n=1), Belgium (n=1) and The Netherlands (n=1).

Various types of documents were examined in research studies. Discharge summaries were considered in 17 studies, while handover documentation was explored in 12 studies. Admission tools for elective or non-elective admissions were examined in 10 studies and referral tools were considered in two studies. Peri-operative and post-operative transfer tools were examined in six studies while two studies considered tools involving the transfer of children from paediatric to adult-based hospital services. The movement of patients across the whole acute care pathway from admission to discharge was involved in 10 studies.

Appendix 1 lists the 59 papers included in this review. It shows the study design and methods, type of complex patients investigated and the nature of healthcare settings involved in the transitions of care. Appendix 2 shows the form and structure for each included paper, the information content investigated, the study findings and the quality of evidence obtained.

Figure 1: PRISMA flow diagram, representing the search results and screening process



Question 1: What is the evidence regarding safety and quality issues relating to poor documentation for complex patients at transitions of care?

Types of complex patients investigated

A variety of complex patients were considered in included papers. Evidence was found in eight broad areas of complexity. These areas were:

- older patients
- hospitalised children
- patients with mental illness
- patients with multiple comorbidities
- patients' needs across the peri-operative pathway
- patients admitted to intensive care
- Aboriginal and Torres Strait Islander patients
- palliative care patients.

The eight areas of complexity are further described below. Specific issues are presented relating to documentation at transitions of care for these areas.

1. Older patients with complex needs

Research involving older patients examined their movements from residential aged care facilities to hospitals. Movements of older people were also explored between acute, subacute and community care. In most cases, older people considered had different types of chronic conditions and there was little attempt to selectively focus on older people with particular conditions. Past work examining the transfer of older people between residential aged care facilities and emergency care settings showed that documentation was not appropriately completed.

Incomplete and inaccurately completed documents, and documents with missing information, were common occurrences in past work. In focus groups conducted by Terrell et al.,[1] health professionals advised the best way to overcome documentation issues was to enforce bidirectional relationship-building efforts between acute care and long-term care settings. In the focus group study conducted by Allen et al.,[2] district nurses caring for older patients explained that there were issues with poor quality and untimely referrals, leading to delays in treatment and an increased likelihood of adverse events. The lack of timely medication documentation from hospitals to primary care settings meant that general practitioners were unfamiliar with the medication changes made for patients, thereby leading to medication errors.

2. Hospitalised children with complex needs

Research examining complex care for children involved transitions between various hospitals and movements between clinical settings. In the work by Quigley et al.,[3] transitions involved children's movements between an acute care hospital, a community care centre,

and a rehabilitation hospital. Tregay et al.[4] targeted the complexity involved in caring for children requiring cardiac surgery who had died post-operatively or required emergency readmission. Two studies involved the movements of children from paediatric to adult health care services, and the particular difficulties associated with these transitions.[5, 6] These forms of transition occurred over periods of weeks and months rather than as a single event.

A common concern raised in past work involved the lack of integrative care between health professionals and healthcare institutions. Quigley et al.[3] found that a lack of consistency in the transitions of care for hospitalised children contributed to unclear expectations for accurate information exchange and a lack of accountability. Inconsistent messages conveyed led to difficulties in locating important details and breakdown in communication. Similarly, White et al.[6] found a lack of consistency in the planned transitions of adolescents with type 1 diabetes from child to adult healthcare services. In some situations, referral letters were not completed at all. In other situations, crucial information was missing, such as the date of diagnosis, current and past insulin regimens, and HbA1c (glycosylated haemoglobin) levels, which give an important indication of potential complications of diabetes.

Examination of handovers by Williams et al.[7] involving specialty medical teams identified a number of concerns. These handovers with specialty medical teams tended to occur late in the day, which resulted in delays in administering requested treatments. External medical teams were required to visit children in different ward areas, which led to some patients being 'missed' and teams having to backtrack to conduct missed handovers. Multiple late handovers were also undertaken as corridor conversations, which meant that important information was missed.

3. Patients with mental illness on complex medication regimens

Despite the propensity for people with mental illness to experience emergency department presentations and hospital readmissions, there was little focus on this group of patients. In an Australian study, consumers with schizophrenia who were treated with clozapine were examined.[8] Clozapine is associated with problems relating to metabolic and cardiovascular symptoms. It is therefore recommended that regular monitoring occur using a number of clinical measures, including blood pressure, body mass index, fasting lipid profile, fasting blood glucose, waist circumference, electrocardiogram and prolactin level. In the consumer group, 12 (29%) were prescribed statins or anti-hypertensives, as well as clozapine, thereby demonstrating the complex links between mental and physical illnesses.

4. Patients with multiple comorbidities

In many studies, complex patients encompassed individuals with several comorbidities, requiring multiple transitions to receive care. Attention was paid to risk factors such as: people aged older than 65 years, the presence of five or more comorbidities, cognitive impairment, impaired functionality, advanced stage illness, and multiple prior acute admissions. A common concern addressed in these studies was the problems associated with inflexible clinical pathways that were designed to standardise management of a specified condition.

Patients admitted to hospital for an acute condition or for surgery were often confronted by a system that targeted one area of patient concern. For example, in the mixed methods study by Williams et al.,[9] patients were admitted for a hip or knee replacement and these patients also had a variety of comorbidities in conjunction with their arthritic hip and knee problems. For these patients, chronic conditions, such as diabetes, ischaemic heart disease and hypertension, were chief sources of concern to patients because they knew disabling complications could develop following surgery. Examination of these patients' documentation identified that many chronic conditions were not noted in the preadmission notes. Patients were also taken off medications prior to surgery, due to concerns about drug interactions with anaesthetics. In some situations, these medications were not recommenced, leading to patient complications, such as severe back pain, unstable angina, gout, vertigo, psoriasis or depressive symptoms. Patients expressed the view that they were expected to recover at the rate indicated by the clinical pathway for hip or knee surgery. Patients with a number of medical conditions needed visits from medical teams of diverse specialties.

5. Patients' needs across the peri-operative pathway

Communication about patients' care needs along the peri-operative pathway was another area of focus.[5, 10-12] In view of the need to complete a number of surgical procedures within a particular time period, patients are required to move quickly and efficiently through the peri-operative pathway, comprising the pre-admission clinic and the holding bay, the operating room, the recovery room and the post-operative ward. Traditionally, post-operative complications occur from risks relating to surgery, such as bleeding and infection. Nevertheless, the reviewed studies showed that many post-operative complications among complex patients related to their existing comorbidities.[10] In their audit of post-operative patients, the Austin Health Post-Operative Surveillance Team (POST) Investigators showed that patients undergoing urological, colorectal, liver transplant, breast, hepatobiliary or orthopaedic surgery were particularly at risk of experiencing post-operative complications and a medical emergency team (MET) call. Patients aged 55 years or over who experienced unplanned admissions, and those aged 80 years and over who experienced planned admissions, were also found to be at risk of experiencing a MET call.[10]

6. Complex patients admitted to intensive care

Complex patients admitted to intensive care were a focal point of many papers.[13-21] Intensive care was identified as an environment with large numbers of health professionals, enormous time pressures, and patients with intricate and rapidly-changing needs. For health professionals, there were many demands on their attention arising from patients, family members, ventilation and monitoring equipment, and external staff visiting the intensive care setting. Within the actual intensive care environment, clinical manifestations of a haemodynamic, neurologic, and respiratory nature, as well as laboratory and procedural results had to be interpreted regularly and concisely. These interpretations had to be conveyed to clinicians of diverse disciplines within intensive care, as well as to clinicians situated in operating rooms and radiology catheterisation laboratories. These demands influenced health professionals' perceptions of their surroundings, affecting how communication occurred.[18]

Confusion occurred between intensive care physicians and operating room clinicians because they had different information needs and priorities of care, thereby affecting the

quality of communication and care delivered.[20] In view of the non-elective nature of many admissions to intensive care, there was recognition that communication failures could occur during transport to hospital.[14] It was important for general practitioners to be informed about the need for patient follow-up after discharge from intensive care. General practitioner communication also facilitated admission to intensive care from the community for patients requiring urgent treatments.[15] In Henderson and Corke's work,[17] emphasis was placed on the difficulties in adequately documenting advance care planning in intensive care. These difficulties related to the availability of multiple medical interventions and the competing interests of various health professionals involved in the care of critically ill patients. Their work demonstrated that even when an advance care plan was documented prior to admission to intensive care, the patient's preferences for care may not be followed through.

7. Complex health needs for Aboriginal and Torres Strait Islander people

Two Australian studies focused on transitional care for Aboriginal and Torres Strait Islander people.[22, 23] Prior to implementing a quality improvement intervention, Bolch et al.[22] found that documentation processes for discharge planning were poor for Aboriginal patients. Despite health professionals' attempts to identify risk factors and facilitate care, they were often confronted with aggression and a lack of cooperation. Cultural awareness training was provided for staff, and an Aboriginal liaison officer was employed. The employment of an Aboriginal liaison officer led to staff appreciation for Aboriginal culture and cultural diversity, and subsequent improvements in discharge documentation. In the work by Wand et al.,[23] Aboriginal health workers primarily communicated with other health professionals rather than recording their intervention in medical records. They also viewed their input as not being relevant to the medical record and they were reluctant to document interventions that may be perceived as culturally sensitive. In the hospital under investigation, there was no policy available that guided documentation practices for Aboriginal and Torres Strait Islander people.

8. Complex health care needs for palliative care patients

Two studies addressed health care needs for palliative care patients.[24, 25] Attention was paid to having smooth transitions of care during the high risk period overnight and during weekends. At these times, it was likely that covering health professionals had only a basic knowledge about palliative care. Effective documentation processes were critical especially when patients were near death. Documentation processes were aimed at preventing over-escalation of care and underuse of life-saving treatments, such as resuscitation.[24] Patients with dementia, frailty and a poor prognosis were also examined.[25] Important aspects for documentation involved identifying the patient's preferred place of death, providing pre-emptive palliative prescribing, and identifying patients' preferences for care.

Evidence of poor documentation leading to adverse events

There was extensive evidence that poor documentation led to different types of adverse events, which included:

- high readmission rates to hospital[16, 26-28]
- failure to follow up after hospital discharge in some situations (caused by inadequate discharge documentation)[23, 29-31]
- increased costs related to care coordination[27] and the lack of referrals to community service providers (caused by insufficient documentation during hospitalisation)[22]
- increased presentations to emergency departments[32] and increased length of hospital stay[33]
- poor identification of sub-optimal management of patients' conditions, inadequate assessment of functional state and inadequate detection of preventable complications[34]
- sub-optimal management of patients' ventilation in intensive care environments[18]
- a lack of availability of important diagnostic results[35]
- an increased risk of intra-operative complications, such as high lactate levels, high glucose levels necessitating an insulin infusion, low blood pH levels, and high blood carbon dioxide levels[21]
- Medication errors, including delays and omission of antibiotics,[31] missed medications and dose errors,[36] and emergency intravenous infusions being turned off accidently or missed[37]
- Patient deterioration requiring medical emergency team calls and patient falls were also evident as adverse effects.[37]

Gaps in work

Gaps in evidence exist in terms of lack of research involving complex patients with particular demographic characteristics. Such gaps include people of non-English speaking backgrounds, individuals of refugee status, homeless people, people with mental illness and people with drug and alcohol disorders. Other vulnerable groups where gaps are apparent include economically disadvantaged individuals comprising those with low incomes or those who are unemployed. Gaps also exist in relation to patients and health care settings in rural and remote areas.

Question 2: What is the evidence, including best practice and guidelines, regarding the minimum information content requirements for recording information at different transitions of care?

In the review, we sought to determine the minimum information content or minimum dataset required to record details at different transitions of care. In particular, the focus of the review is on the content of the documentation rather than the media used in the transmission. For instance, documentation in an electronic medical record or through the use of a clinician-held device does not, in itself, constitute evidence for best practice. Also important is the minimum content that is common across various settings and teams to enable effective practice to occur.

For this question, all included papers were examined for minimum information content that was derived from the research conducted. In reviewing all 59 papers, it was apparent that common elements of minimum information were required to be documented for all types of complex patients (Table 5). In other situations, it was evident that there were different information requirements for particular complex patient groups involving different health care settings. Evidence for minimum content information was found for the following complex patient groupings:

- older patients
- hospitalised children
- patients with mental illness
- patients with multiple comorbidities
- patients moving across the peri-operative pathway
- patients admitted to intensive care
- Aboriginal and Torres Strait Islander patients
- palliative care patients.

These additional requirements are identified in bold text.

Common elements for all complex patient types

The common elements that are applicable for all complex patient types are shown in Table 5. This information was obtained by examining all 59 papers included in the review. It is expected that this information should be available at any transition point of care including admission, discharge, transfer of care across health care settings, referrals, requests and follow-up.

Table 5: Common elements for all complex patient types

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations - Interpretation of relevant pathology and diagnostic imaging - Advance care directive
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures - Any complications developed
Medications - Name, dose, frequency, route and purpose

Minimum information content
- Current, changed and ceased
Allergies and adverse drug reactions
Alerts - Infection, falls, pressure ulcer, medication error risk - Vulnerability risk - Psychosocial risk
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist

Minimum information content for older patients

Aside from the common elements, additional information depicted as minimum data for clinical synopsis includes resuscitation code status, or the designation of a 'not for resuscitation' (NFR) order, the presence and nature of pain, and psychosocial assessment. Medication management involves plans for deprescribing and alterations for renal and liver insufficiency. The presence of any geriatric syndromes should be identified and described. Details of specialists involved in patients' care should also be identified. Data for older patients were obtained from 14 research papers comprising diverse types of evidence.

Table 6: Minimum information content for older patients

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Resuscitation code status** - **Presence and nature of pain** - **Social and lifestyle history – psychosocial assessment**
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Need for follow-up investigations

Minimum information content
Clinical interventions - Relevant operations and procedures - Any complications developed
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased - **Alterations for renal and liver insufficiency** - **Plans for deprescribing**
Allergies and adverse drug reactions
Alerts **relating to geriatric syndromes** - **Incontinence** - **Falls** - **Functional decline** - **Delirium, dementia** - **Frailty** - **Pressure ulcers** - **Malnutrition and dehydration** - **Depression**
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care - **Need for allied health support**
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Family and carer support**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist - **Residential aged care facility (if applicable)** **Details of specialists - name, organisation, address and telephone details**

Table 6 references

Relevant Reference	Type of evidence
Allen et al. 2013	Qualitative exploratory design with focus groups
Ash et al. 2014	Pre-post intervention study
Cornu et al. 2012	Retrospective, single-centre, cohort study
Dedhia et al. 2009	Pre- and post-intervention study
Hansen et al. 2013	Pre- and post-intervention study
Kergoat et al 2010	Development of discharge summary tool
Khan et al. 2010	Development of discharge flowchart

Relevant Reference	Type of evidence
Kind 2012	Development and evaluation of guidelines
Lane et al. 2013	Retrospective review of medical records
Madan et al. 2012	Prospective audit evaluation study
Reid et al. 2013	Prospective, observational study
Terrell et al. 2009	Development of quality indicators with a consensual approach
Terrell & Miller 2011	Qualitative focus group study
Walker et al. 2015	Evaluation study in adherence to quality indicators

Minimum information content for hospitalised children

Aside from the common elements, additional information for clinical synopsis includes observations of behaviour, cardiovascular state and respiratory state. The involvement of parents in the care and health literacy of children in relation to child development is also important. Other considerations involve information to be documented when children transfer from child to adult hospital settings following adolescence. The need for an interpreter is also perceived to be important. Data for hospitalised children were obtained from five research papers comprising diverse types of evidence.

Table 7: Minimum information content for hospitalised children

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name of parent or guardian - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations **(behaviour – playing, sleeping, irritable, lethargic; cardiovascular state – skin and mucus membrane colour, heart rate and rhythm; respiratory state – rate, accessory muscle use, grunting)** - Interpretation of relevant pathology and diagnostic imaging - Advance care directive
Pathology and diagnostic imaging investigations - Most relevant - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures

Minimum information content
- Any complications developed
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased
Allergies and adverse drug reactions - **Medications and food**
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care
Information provided to patient, carers and family - Education given to child - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own **healthcare needs in relation to growth and development** - **Child involvement in care** - **Parental involvement in care** - **Need for an interpreter**
If child transferring from child to adult setting, need to consider the following: - **Expectations of health professionals providing adult care** - **Availability of transition program in adult care** - **Parental and adolescent concerns about transferring to adult care** - **Involvement of parents in transfer to adult care**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist **Details of specialists – name, organisation, address and telephone details**

Table 7 references

Relevant Reference	Type of evidence
Quigley et al. 2014	Qualitative grounded theory interview and focus group study
Sonneveld et al. 2013	Cross sectional survey study
Tregay et al. 2016	Qualitative interview study
White et al. 2012	Retrospective clinical audit
Williams et al. 2015	Pre- and post-intervention study

Minimum information content for patients with mental illness

Aside from the common elements, additional information for clinical synopsis includes assessment of drug and alcohol consumption, mental health and psychosocial assessment, and effects of physical parameters on mental health. Involvement of family and carers is also perceived as important. Data for patients with mental illness was obtained from one research paper comprising testing of a patient-held tool.

Table 8: Minimum information content for patients with mental illness

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations, **including mental health state and blood pressure** - **Assessment of drug and alcohol consumption** - **Social and lifestyle history – psychosocial assessment** - Interpretation of relevant pathology and diagnostic imaging **(including blood glucose and blood cholesterol levels)** - Advance care directive
Pathology and diagnostic imaging investigations - Most relevant - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures

Minimum information content
- Any complications developed
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased
Allergies and adverse drug reactions
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Family and carer support**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist - **Case manager** **Details of treating psychiatrist and other specialists - name, organisation, address and telephone details**

Table 8 references

Relevant Reference	Type of evidence
Brunero et al. 2008	Development and feasibility of patient-held tool

Minimum information content for patients with multiple comorbidities

Aside from the common elements, additional information for clinical synopsis includes vital signs, and neurological and oxygenation assessment. Psychosocial assessment is also important. Medication considerations include difficulties experienced with the medication regimen, and methods used to facilitate medication-taking behaviour. Diverse treatment options used to manage complex and multiple comorbidities should be identified. Involvement of family and carers is also perceived as important. Data for patients with multiple comorbidities were obtained from 19 research papers involving diverse types of evidence.

Table 9: Minimum information content for patients with multiple comorbidities

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations - **Vaccinations**
Clinical synopsis - Summary of diagnosis, prognosis and clinical management of co-existing conditions - Interpretation of relevant observations, **including vital signs, neurological state, oxygenation** - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Social and lifestyle history – psychosocial assessment** - **Palliative care planning (if relevant)**

Minimum information content
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures - Any complications developed
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased - **Methods to facilitate administration, dose administration aids and crushing tablets** - **Medication adherence with prescribed regimen**
Allergies and adverse drug reactions
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care - **Dietary management** - **Activity ability and goals** - **Allied health care involvement** - **Home assistance and community support** - **Rehabilitation program** - **Outpatient or outreach service follow-up**
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Family and carer support** - **Knowledge and acceptance of treatment plan**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist - **Case manager** **Details of other specialists – name, organisation, address and telephone details**

Table 9 references

Relevant Reference	Type of evidence
Balaban et al. 2008	Randomised controlled study
Berry et al. 2013	Longitudinal study using case study approach
Boxer et al. 2010	Pre- and post-intervention study

Relevant Reference	Type of evidence
Chemali et al. 2015	Retrospective clinical audit and survey
Coleman et al. 2006	Randomised controlled trial
Harel et al. 2012	Web-based, cross-sectional survey study
Jurgens et al. 2015	Guideline development with consensus approach
Manias et al. 2016	Cross-sectional prospective survey study
Manias et al. 2016	Retrospective clinical audit
McBride et al. 2014	Pre- and post- quality improvement study
McPhail et al. 2015	Instrument development and validation study with Delphi panel
National E-Health Transition Authority Ltd, 2011	Tool development study with consensus approach
Reilly et al. 2013	Qualitative interview study
Romagnuolo et al. 2005	Pre- and post- intervention study
Scott et al. 2014	Retrospective case–control study of hospital records
Soong et al. 2013	Development of an evidence-based checklist by consensus approach
Sujan et al. 2014	Qualitative study with interviews and observations
Williams et al. 2007	Mixed methods longitudinal study with interviews and a prospective clinical audit

Minimum information content for patients across the peri-operative pathway

Information comprises the common elements as well as specific data pertaining to the pre-operative, peri-operative and post-operative domains of care. For clinical synopsis, functional status, use of aides, resuscitation code status, 'nil orally' status and arm band details are important information. Written consent is a crucial component of information that needs to be documented within the pre-operative domain. The peri-operative domain involves addressing key components of the surgical and anaesthetic procedures, while the post-operative domain focuses on recovery following surgery. Seven research papers focused on documentation for patients across the peri-operative pathway, using diverse types of evidence.

Table 10: Minimum information content for patients across the peri-operative pathway

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Pre-operative care
Problems and diagnoses - **Pre-operative diagnosis** - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations, **including vital signs, neurological state and oxygenation** - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Functional status** - **Use of aids** - **Resuscitation code status** - **'Nil orally' status** - **Arm band details**

Minimum information content
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant past operations and procedures - Any complications developed
Surgical procedure, including operation side and body part
Plan for anticipated length of stay, analgesia, potential complications, and discharge
Current medications - **Medications withheld before surgery** - **Pre-operative medication**
Allergies and adverse drug reactions
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Informed consent**
Peri-operative care
Airway type and size
Analgesia given
Anaesthetic agent - **Anaesthetic induction and reversal** - **Complications of anaesthesia**
Blood loss
Urine loss
Surgical incision and suture material
Crystalloid and colloid fluids - **Blood product, type and amount**
Inotropic agents
Protamine and antifibrinolytic agent use

Minimum information content
Patient assessment of cardiovascular state, ventilation and oxygenation
Status of tubes, intravenous, central and arterial lines, and wires
Positioning of patient
Pathology and haematology results - **Arterial blood gases** - **Electrolyte levels** - **Glucose levels** - **Lactate levels** - **Haemoglobin**
Post-operative care
Evaluation of wound
Medications - **Analgesic** - **Antiemetic** - **Aperient** - **Prophylactic antibiotic**
Ambulation
Coughing and deep breathing
Instructions for diet, medications, pain relief, wound care, stoma care, wires and drain care
Assessment of hydration
Discharge
Encounter details - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first)
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Necessary pathology and imaging follow-up
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care
Information provided to patients, carers and family - Patient, family and carer understanding and counselling - Need for an interpreter - Health literacy – ability to understand own healthcare needs
Nominated primary health providers – name, organisation, address and telephone details

Minimum information content
- General practitioner - Community pharmacist - **Case manager** **Details of other surgeon, anaesthetist, and specialists – name, organisation, address and telephone details**

Table 10 references

Relevant Reference	Type of evidence
Austin Health Post-Operative Surveillance Team (POST) Investigators 2010	Tool development and testing
Choromanski et al. 2014	Descriptive survey study
Halverson et al. 2014	Tool development study by consensus method
LeBlanc et al. 2014	Development of handover checklist for orthopaedic trauma by consensus method
Liem et al. 2013	Development of outcome guidelines by consensus method
McMurray et al. 2013	Multi-site ethnographic field study
Weinger et al. 2015	Development and evaluation of handover tool

Minimum information content for patients admitted to intensive care

Aside from the common elements, additional information includes reason for admission to intensive care and management of comorbidities by team members external to the intensive care unit. Clinical interventions include care of invasive lines, ventilation and oxygenation management, and prevention of ulcers of the skin and gastrointestinal tract. Patient and family preferences for life-saving treatment are also perceived as important inclusions. Data for patients admitted to intensive care were obtained from nine research papers involving diverse types of evidence.

Table 11: Minimum information content for patients admitted to intensive care

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations - **Reason for admission to intensive care** - **Management of comorbidities by external health care teams**
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations, **including haemodynamic, respiratory, and neurological status** - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Code status**
Pathology and diagnostic imaging investigations - Most relevant results - Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures - Any complications developed

Minimum information content
- **Endotracheal tube and cuff** - **Ventilation and oxygenation management** - **Intravenous and arterial lines** - **Ulcers of the skin and gastrointestinal tract**
Medications - **Analgesics and sedatives** - **Inotropic support** - **Intravenous fluids** - **Nutritional support**
Allergies and adverse drug reactions
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care - **12-hour follow-up plan** - **Contingency plan** - **Plans for discharge to general ward**
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Family and carer counselling** - **Preferences for receiving treatment if patient becomes incapacitated** - **Patient's decision about life-saving treatment**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist
Details of intensive care director and other specialists – name, organisation, address and telephone details

Table 11 references

Relevant Reference	Type of evidence
Bates et al. 2014	Tool development for reliability, validity, and feasibility
Dressler & Shutt 2013	Feasibility study for tool
Ellis et al. 2013	Multi-centre, cross-sectional, descriptive study involving interviews
Hansen et al. 2014	Tool development and testing study
Henderson & Corke 2015	Prospective cohort study using surveys
Sharma & Peters 2013	Non blinded pre- and post-intervention observation study
Sheth et al. 2016	Pre- and post-intervention study
Wittwer et al. 2015	Cross-sectional survey study
Zavalkoff et al. 2011	Prospective, per- and post-intervention study

Minimum information content for Aboriginal and Torres Strait Islander patients

Aside from the common elements, additional information that is deemed important includes assessment for depression, drug and alcohol disorders, and patient diet. Other vital information involves liaison with an Aboriginal health worker, and participation in a rehabilitation program and outreach and outpatient services. Data for Aboriginal and Torres Strait Islander patients were obtained from two research papers: a quality improvement study and a retrospective medical record audit.

Table 12: Minimum information content for Aboriginal and Torres Strait Islander patients

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations, **including vital signs, neurological state, and oxygenation** - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Social and lifestyle history – psychosocial assessment** - **Assessment for drug and alcohol consumption** - **Assessment for depression** - **Assessment of patient diet**
Pathology and diagnostic imaging investigations - Most relevant results

Minimum information content
- Identify any pending results - Need for follow-up investigations
Clinical interventions - Relevant operations and procedures - Any complications developed
Assessment and management of co-existing conditions
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased
Allergies and adverse drug reactions
Alerts - **Vulnerability risk**
Arranged services Organised referrals or appointments for follow-up
Recommendations for management - Agreed goals of care - **Consultation with Aboriginal and Torres Strait Islander health worker** - **Referral to rehabilitation program** - **Outpatient or outreach service follow-up**
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Family and carer support** - **Knowledge and acceptance of treatment plan**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist

Table 12 references

Relevant Reference	Type of evidence
Bolch et al. 2005	Quality improvement study
Wand et al. 2009	Retrospective hospital medical record audit

Minimum information content for palliative care patients

Aside from the common elements, additional information includes code status for resuscitative measures. Medication management is primarily focused on documenting evidence for providing symptomatic comfort. Information exchange with patients and family members addresses the need for identifying preferences for care and identifying the preferred place of death. Data for palliative care patients were obtained from two research papers, one of which was a tool development and evaluation study, the other was a retrospective clinical audit.

Table 13: Minimum information content for palliative care patients

Minimum information content
Patient - Name - Address and telephone contact details - Date of birth and age - Gender - Weight
Family and carer support - Name - Address and telephone contact details
Document author and location
Document recipients and location
Encounter details (if patient leaving healthcare facility) - Admission and discharge dates - Current location - List of clinical specialties involved, most recent first
Problems and diagnoses - Principal diagnosis - Current health problems - Relevant past medical history - Relevant past hospitalisations
Clinical synopsis - Summary of diagnosis, prognosis and clinical management - Interpretation of relevant observations - Interpretation of relevant pathology and diagnostic imaging - Advance care directive - **Code status**
Pathology and diagnostic imaging investigations associated with provision of comfort - Most relevant results - Identify any pending results - Need for follow-up investigations **to maintain comfort**
Clinical interventions - Relevant operations and procedures

Minimum information content
- Any complications developed
Medications - Name, dose, frequency, route and purpose - Current, changed and ceased - **Goals to ensure comfort**
Allergies and adverse drug reactions
Alerts
Arranged services - Organised referrals or appointments for follow-up
Recommendations for management
Information provided to patient, carers and family - Education given - Awareness of condition and management - Understanding of instructions - Health literacy – ability to understand own healthcare needs - **Preference for care** - **Preferred place of death**
Nominated primary health providers – name, organisation, address and telephone details - General practitioner - Community pharmacist

Table 13 references

Relevant Reference	Type of evidence
Newport et al. 2010	Tool development and evaluation study
Stoneley et al. 2012	Retrospective clinical audit

Question 3: What is the evidence regarding the form or structure of the documentation required at different transitions of care?

In the review, we sought to determine the evidence regarding the way documented information should be organised and structured to support effective communication at transitions of care. All 59 research papers were examined for evidence of standardised tools, checklists and templates that could provide the structure of documentation for different transitions of care.

Evidence of standardised tools, checklists and templates

There were 14 identifiable tools, checklists and templates in the papers:

- BEFORE YOU ADMIT tool
- BOOST tools
- C-CEBAR
- Checklist of Safe Discharge Practices
- D-SAFE
- DEFAULT
- INTERACT II, Stop and Watch Tool
- I-PASS
- MDS for PICU
- Mind the Gap Tool
- 7Ps flowchart
- RAPaRT
- PSOST
- 3-Ds—diet, drugs, discharge plan.

These 14 tools, checklists and templates provide helpful information to guide health professionals in documenting patient care at transition points. Due to the lack of predictability associated with complex patients as they move across transition points, and the diversity in the disciplines of health professionals involved in their care, it is sometimes difficult for health professionals to have a clear understanding of what to document in medical records. Health professionals can use these guidelines as prompts for their documentation, which can be tailored and individualised to suit specific patients in their care.

Table 14 provides a description for each form of documentation, examines if there is evidence that it works; considers validity and reliability of the form; and highlights any gaps in evidence.

Table 14: Evidence of standardised tools, checklists and templates

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
BEFORE YOU ADMIT tool Ash et al. 2014	Six areas to be asked about an older patient before admission: Polypharmacy Goals of care Delirium Frailty Aspiration Falls	At one hospital, older patient readmission within 30 days reduced from 22.4% to 14.8%	Emergency department of public teaching hospitals	Based on SBAR format No further information about reliability and validity	Needs research on application within residential aged care facilities
BOOST (Better Outcomes for Older adults through Safe Transitions) tools Hansen et al. 2013	Series of tools that can be used during care transitions for older people: 8P Risk Assessment (problem medications, psychological, principal diagnosis, polypharmacy, poor health literacy, patient support, prior hospitalisation in last six months, palliative care) General assessment of preparedness Written discharge instructions Preparation to Address Situations Successfully (PASS) Discharge Patient Education Tool (DPET) Teach back	At 11 hospitals, average rate of 30-day rehospitalisation in BOOST units was 14.7% prior to implementation and 12.7% 12 months after implementation (P = 0.010)	Metropolitan public teaching hospitals, community teaching hospitals, community non-teaching hospitals	Widespread engagement with clinicians and policy makers about tool development Not clear if further information available on reliability and validity	Further work needed on how tools relate to patient movements to residential aged care facilities and community

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
C-CEBAR (mnemonic) Chau et al. 2015	C - Contact of case physiotherapist of acute hospital C - Contact details of patient E - Expectations of receiving physiotherapist for required rehabilitation therapy B - Background and history A - Assessments and function R - Responsibilities and risk management, including safety precautions and unanticipated patient's response	740 physiotherapy records at three hospitals examined Almost full compliance with tool was obtained for all audit criteria, except for 'Expectations of receiving physiotherapist for therapy required' and 'Responsibilities and risk management', where compliance was 90%	Acute care hospitals, rehabilitation hospitals	Based on the iSoBar tool No further information about reliability and validity	Tool evaluation needed on whether it leads to improved functional outcomes for patients after physiotherapy
Checklist of Safe Discharge Practices Soong et al. 2013	Seven areas examined in checklist **Hospital:** Assess if hospitalisation is still required **Primary care:** Identify active primary care provider Alert care team if no primary care provider Notify about patient's admission, diagnosis, and predicted discharge date	No evidence that tool has been tested	Tool does not appear to have been implemented	Three cycles of panel meetings approved final list No further information about reliability and validity	Evaluation needed on how tool impacts on clinical outcomes at care transitions

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	Book follow-up appointment **Medication safety:** Develop best possible medication history Teach patient how to properly use discharge medications Reconcile discharge medication order with best possible medication history and medications prescribed while in hospital **Follow-up:** Follow-up phone call to patients at risk Check if patient has new medications Check if patient received home-care Remind patient of upcoming appointments If necessary, schedule education and training for patient If necessary, arrange outpatient investigations If necessary, book specialty clinic follow-up appointment **Home care:** Share details about patient's existing community services Engage home care agencies If necessary, schedule post-discharge				

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	care **Communication:** Provide patient and relevant others with copy of Discharge Summary and the Medication Reconciliation Form. **Patient education:** Clinical team performs teach-back to patient Explain to patient how new medications relate to diagnosis; Explain discharge summary to patient Explain potential symptoms, what to expect while at home, and when patient should visit the emergency department				
D-SAFE (discharge summary adapted to the frail elderly patient) Kergoat et al 2010	Checklist comprising medical discharge summary and discharge prescription summary **Medical discharge summary:** Reason for admission Main diagnosis and other active diagnoses Non-active diagnoses Social and lifestyle history Pertinent findings Investigations and consultations	No evidence that tool has been tested	Tool does not appear to have been implemented	Final agreement reached after two rounds of consultation No further information about reliability and validity	Evaluation needed on how tool impacts on clinical outcomes at care transitions

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	Mental functions Functional status Nutritional status Psychosocial assessment Clinical problems developed during hospitalisation Instructions at discharge and follow-up Patient orientation (location) Additional notes Hospital physician details Name of family physician Resource-person Copies given to patient and family physician **Discharge Prescription:** Community or institutional pharmacy pre-hospitalisation Allergies Drug intolerances Creatinine clearance Creatinine Weight Signature of the pharmacist Medication prior to admission				

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	Changes and new medications at discharge and opioids Weekly pill box needed Barriers to patient's adherence Physician's signature Notes for the community or institutional pharmacist Prescription verified by the pharmacist before patient discharge				
DEFAULT (mnemonic) Sharma & Peters 2013	D - Do not resuscitate (DNR) status is clear E - Endotracheal tube and cuff is safe F - Fluid strategy and feeding plan A - Agreed analgesia and sedation U - Ulcer of the skin and gut L - Lines out T - Tidal volumes less than 8 ml/kg	In one hospital, increase in median days of accidental tube removal between pre- and post-intervention (14 vs 150 days, P<0.0001) Trend towards an increase in proportion of patients who had tidal volumes in expected range between pre- and post-intervention (49% vs 61%, P=0.09)	Public teaching hospital Paediatric intensive care unit	Risk action group designed a mnemonic and feedback obtained from intensivists and senior nurses No further information about reliability and validity	Evaluation needed on how tool impacts on clinical outcomes at care transitions

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
INTERACT II (Interventions to reduce acute care transfers): Stop and Watch Tool (mnemonic) Madan et al. 2012	S - Seems different than usual T - Talks or communicates less O - Overall needs more help P - Pain – new or worsening; participated less in activities A - Ate less than usual N - No bowel movement in three days; or diarrhoea D - Drank less W - Weight change A - Agitated or nervous, more than usual T - Tired, weak, confused, or drowsy C - Change in skin colour or condition H - Help with walking, transferring, toileting more than usual	At 30 nursing homes, 31 transfers took place over five-month period. Four deemed to be preventable and 27 non-preventable 100% of patients transferred to the emergency department were admitted to the hospital	Nursing homes Public teaching hospitals Community hospitals	Not clear whether reliability and validity testing has taken place	Evaluation needed on how tool impacts on clinical outcomes at care transitions
I-PASS (mnemonic) Sheth et al. 2016	I - Illness severity; stable, needs watching, unstable P - Patient summary; summary statement, events leading to admission, hospital course, ongoing assessment, plan A - Action list; to do list, time line and ownership; know what is going on, plan for what might happen S - Situation awareness and contingency	For 278 paediatric patient transfers into one hospital, time between verbal hand-off and patient transfer decreased from baseline (397 +/- 167 minutes) to the post-intervention period (24 +/- 21	University-affiliated children's hospitals Cardiovascular ICUs Acute care units	Developed from SBAR (Situation, Background, Assessment, Recommendation) Expert advisory group developed tool No further information about	Different paediatric populations need to be tested for utility and efficacy of tool

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	planning S - Synthesis by receiver; receiver summarises what has been heard, asks questions, restates key actions	minutes) (P < .01) No differences in rates of readmission, rapid response team calls, or mortality were observed		reliability and validity	
MDS for PICU (Minimum Data Set for Paediatric Intensive Care Unit) Hansen et al. 2014	Identification bar highlights patient's trajectory in red, yellow or green Allergies Medications Pertinent patient history Body system areas 12-hour follow-up plan Contingency plan Read-back from sender to receiver	Utility tested: doctors found that patient data were not redundant or excluded in the tool	Metropolitan teaching hospitals Paediatric intensive care units	Tool development with four non-PICU intensivists and 10 paediatric residents No further information about reliability and validity	Evaluation needed on how tool impacts on clinical outcomes at care transitions
Mind the Gap Tool Sonneveld et al. 2013	**Health professional-related characteristics:** If there are unrealistic expectations of health professionals providing adult care If providers from child and adult care settings know each other well enough Availability of providers with specialised knowledge about adolescents with	127 adolescents with chronic conditions, 166 parents, and 19 care providers Audit using the tool showed there was an absence of a	Public teaching hospitals Rehabilitation hospitals	Face and content validity Factor analysis Cronbach's alpha reliability	Evaluation needed on how too impacts on clinical outcomes at care transitions

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	chronic conditions **Transitional care delivery process:** Availability of transition protocol/transitional program Availability of integrated treatment protocol for child and adult care Availability of guidelines or standards for adolescents with chronic illnesses Availability of coordination between child and adult care If joint mission exists between child and adult care If joint aim of transition between child and adult care Availability of resources to assign a transition co-ordinator Availability of extensive care services after transition Availability of resources for joint care services If insufficient cooperation with external partners Availability of continuity of providers for adolescents after transition Availability of preparation for transition	transition protocol and transitional program in 78.9% of cases			

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	Patient-related characteristics – adolescents: If overly concerned, adolescents involve parents about transfer to adult care If adolescents take too little responsibility for self-care Non-compliance to therapy of adolescents after transition If adolescents have trouble finding a partner Non-adherence to therapy of adolescents before transition **Patient-related characteristics – parents:** If parents have trouble ceding control to adolescents If lack of involving parents in care services after transfer to adult care If parents are dominantly present in the consulting room If over-concerned or over-protective parents				
7Ps flowchart (mnemonic) Khan et al. 2010	P - Problem medications P - Punk (depression) P - Principal diagnoses	Mnemonic identified barriers to communication Primary care	Acute Care for Elders Units Metropolitan teaching	Expert group review in developing tool No further information about	Evaluation needed on how tool impacts on clinical outcomes at care

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
	P - Polypharmacy P - Poor health literacy P - Patient support P - Prior hospitalisation	physician in the discharge summary (55%) Summary was transmitted to the primary care physician 73% of the time Patient was seen in clinic 73% of the time 20% of patients received follow-up calls within 72 hours	hospitals	reliability and validity	transitions
RAPaRT (Rapid Assessment Prioritisation and Referral Tool) McPhail et al. 2015	Set of seven items: Previous regular help Hospitalised in past six months More than three medications prescribed Walking aids or assistance Someone else shopping Lost weight recently, eating poorly Falls in the past six months	Tool was able to predict when a referral was warranted in 80% of situations	Medical assessment and planning units Emergency departments Public teaching hospital	Prospective evaluation and consultation with Delphi panel No further information about reliability and validity	Evaluation needed on how tool impacts on clinical outcomes at care transitions
PSOST (Providers' Signout for	Brief history of present illness Past medical history	Residents reported great level of satisfaction in	Cancer care hospitals	Expert group review with palliative care fellows and medicine	Evaluation needed on how tool impacts on clinical

Standardised tools, checklists and templates	Description	Evidence that tool works	Where tool has been implemented	Reliability and validity of evidence	Gaps in evidence
Scope of Treatment) Newport et al. 2010	Resuscitation code status Significant laboratory or diagnostic test results, ‘‘to do’’ list of laboratory tests and procedures Care plan	using the tool Fellows reported interventions aligned with patients’ goals Nurses reported the tool assisted in their decision-making	Hospices Palliative care units Haematology oncology units	residents in developing tool No further information about reliability and validity	outcomes at care transitions
3-Ds—diet, drugs, discharge plan Romagnuolo et al. 2005	Diet Proton pump inhibitor use *Helicobacter Pylori* eradication regimen Non-steroidal anti-inflammatory drug use Complete blood count Discharge plan time Follow-up in gastroenterology clinic, general practitioner or endoscopy clinic	Median in-patient stay was 7.0 (95% CI 2–24) versus 3.5 (95% CI 1–12) days for the pre-intervention (n=39) and post-intervention periods (n=22), respectively (P = 0.003)	Public teaching hospitals Emergency departments General internal medicine departments Endoscopy units	Consensus development of tool No further information about reliability and validity	Evaluation needed of the tool’s impact on patients with various levels of vulnerability, such as low socioeconomic groups, patients with alcohol problems or mental illness

Use of standardised language and terminology

Two studies examined the use of standardised language and terminology in documentation.[38, 39] The focus in both studies was on analysing understandings of common abbreviations used in pre-admission handover notes and discharge summaries. In the work of Chemali et al.,[39] the investigators examined 20 commonly used abbreviations:

- SNT (soft, non-tender)
- TTE (transthoracic echocardiogram)
- EST (exercise stress test)
- NKDA (no known drug allergies)
- CTPA (computed tomography pulmonary angiography)
- ORIF (open reduction and internal fixation)
- HSDNM (heart sounds dual and no murmur)
- B/G (background)
- GCS (Glasgow coma scale)
- ADLs (activities of daily living)
- PMHx (past medical history)
- CT (computed tomography)
- ECG (electrocardiogram)
- CXR (chest x-ray)
- O/E (on examination)
- BP (blood pressure)
- GORD (gastro-oesophageal reflux disease)
- RR (respiratory rate)
- ED (emergency department)
- HR (heart rate).

General practitioners were surveyed about their interpretations of these abbreviations. Six abbreviations were misinterpreted by more than 25% of surveyed general practitioners, which were: SNT (soft, non-tender), TTE (transthoracic echocardiogram), EST (exercise stress test), NKDA (no known drug allergies), CTPA (computed tomography pulmonary angiography), and ORIF (open reduction and internal fixation). There were many abbreviations for which 3% or fewer general practitioners had difficulties in understanding. These easily understood abbreviations could be included as a repertoire of acceptable abbreviations that are recommended for regular use: PMHx (past medical history), CT (computed tomography), ECG (electrocardiogram), CXR (chest x-ray), O/E (on examination), BP (blood pressure), GORD (gastro-oesophageal reflux disease), RR (respiratory rate), ED (emergency department) and HR (heart rate).

Manias et al.[38] completed a retrospective audit of transcribed telephone handovers ('patient expect' calls) occurring with inter-hospital transfers from two rural hospitals to a metropolitan tertiary hospital of all rural patients (n = 127) across a six-month period. In their analysis, the authors mapped the handover documentation against the iSoBAR format, which stands for: identification, Situation, observations, Background, Agreed Plan and Readback. For the Readback category, they examined how effectively the documentation could be accessed by health professionals. This process was difficult because of inconsistent use of abbreviations. Examples of abbreviations used inconsistently included: HD and PE. The abbreviation HD

sometimes meant ‘haemodynamically stable’, or ‘haemodialysis’ or ‘Hodgkin’s disease’. PE was used to represent ‘pulmonary embolism’, ‘pulmonary oedema’, ‘pleural effusion’ or ‘pericardial effusion’. Typographic errors and prolific use of abbreviations affected readability of the handover document. In many records, the entire documentation was in an abbreviated form, which meant it was very difficult to read. Based on these findings, the authors recommended that national patient safety bodies develop a list of approved abbreviations for documentation processes. These abbreviations should be easily understood with little possibility of multiple meanings being assigned to them.

Conclusion

The review has identified the importance of flexible standardisation and structured documentation in communicating patient care across transition points. Three review questions have been addressed.

First, there is evidence that poor documentation is a safety and quality issue for complex patients at transitions of care.

Second, there is evidence of the common elements that should be included as minimum data when recording information for complex patients at transitions of care. Variations of the minimum data exist for various subgroups of complex patients. Health professionals need to consider the particular needs of complex patients, and tailor these elements accordingly.

Third, the structure of the documentation is important, and tools, checklists and templates can act as effective prompts with identifying key areas to consider. It is recommended that these tools, checklists and templates are used in practice, within the particular clinical settings for which they have been developed. There are gaps in evidence in relation to complex patients with specific demographic characteristics, especially in terms of socioeconomic and cultural aspects of vulnerability. It is suggested that further research should be conducted in these areas.

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Appendix 1: Included studies (N= 59)

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Allen et al. (2013)[2] Australia	Qualitative exploratory design with focus groups	Community nurse roles, district nurses and practice nurses, and aged care case managers (n=16)	Not-for-profit district nursing service provider Private general practice Not-for-profit provider of aged care case management services
Ash et al. (2014)[26] USA	Pre-post intervention study	120 patients Older people aged 65 years or older with diagnosis of heart failure or pneumonia	Metropolitan teaching hospital Skilled nursing facility
Austin Health Post-Operative Surveillance Team (POST) Investigators (2010)[10] Australia	Tool development and testing	323 patients Aged at least 55 years with unplanned admissions or aged at least 80 years for planning admissions or admission to the ICU	Metropolitan teaching hospital Operating room Surgical wards Intensive care
Balaban et al. (2008)[29] USA	Randomised controlled study	47 in the intervention group and 49 as concurrent controls Historical controls (n=100) Patients with multiple chronic conditions: diabetes, depression, chronic heart failure, coronary artery disease, chronic obstructive pulmonary disease 30% of non-English speaking backgrounds	Community teaching hospital Various nursing homes

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Bates et al. (2014)[13] USA	Tool development for reliability, validity, and feasibility	Children involved in 90 handovers Diverse ages - many children in unit for over 14 days, on many medications	Children's hospital Paediatric cardiac intensive care unit
Berry et al. (2013)[27] USA	Institutional case study longitudinal study	373 patients receiving care coordination Patients had multiple diseases, used multiple health professionals, had complex medication issues, multiple inpatient admissions, many emergency department visits, lack social support, had financial limitations, had cognitive deficits	Metropolitan teaching hospital Diverse inpatient units
Bolch et al. (2005)[22] Australia	Pre- and post-intervention study	Aboriginal (n=14) patients Non Aboriginal (n=90) patients Aged 65 years and older	Rural public hospital
Boxer et al. (2010)[40] USA	Pre- and post-intervention study	Discharge documentation from 60 admissions during the pre-intervention and 47 admissions during the post-intervention period	Public teaching hospital Inpatient general medicine wards Cardiology ward
Brunero et al. (2008)[8] Australia	Development and feasibility of patient-held tool	76 consumers with schizophrenia and treated with clozapine	Public teaching hospital Mental health service
Chau et al. (2015)[41] Hong Kong	Feasibility study for tool	Patients reviewed by physiotherapists in their transfer from acute to rehabilitation wards	Three hospitals – one acute care hospital and two rehabilitation hospitals Admissions to rehabilitation units from medical, orthopaedic, emergency medicine, surgery, neurosurgery, oncology and cardiothoracic surgery

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Chemali et al. (2015)[39] Australia	Retrospective clinical audit and survey	200 sequential electronic discharge letters 240 general practitioners managing patients with diverse acute and chronic conditions	Public teaching hospital
Choromanski et al. (2014)[11] USA	Descriptive survey study	216 anaesthesia providers Patients moving from peri-operative to post-surgical environments	Anaesthesia providers employed in diverse healthcare institutions Operating rooms and post-anaesthetic care units
Coleman et al. (2006)[28] USA	Randomised controlled trial	750 community-dwelling adults, aged 65 years or older admitted to hospital with one of 11 selected conditions Conditions were selected as patients had high likelihood of transferring to a skilled nursing facility or home healthcare services, or requiring anticoagulant treatment	One hospital Eight skilled nursing facilities One home healthcare agency
Cornu et al. (2012)[36] Belgium	Retrospective, single-centre, cohort study	189 patients aged 65 years or older 76% residing at home, and 24% residing in nursing home before hospitalisation	Metropolitan teaching hospital Acute geriatric unit Inpatient acute medical and surgical units
Dedhia et al. (2009)[32] USA	Pre- and post-intervention study	237 patients at pre-intervention 185 patients at post-intervention Patients aged 65 years or older Many comorbidities	Academic medical centre Community teaching hospital Community non-teaching hospital General medicine wards
Dressler and Shutt (2013)[14] USA	Feasibility study for tool	264 paediatric critical care transports to hospital	Critical Care Transport Metropolitan teaching hospital

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Ellis et al. (2013)[15] USA	Multi-centre, cross-sectional, descriptive study	300 critical care encounters 27% of patients had hospital admission in past six months	Three hospitals Four adult medical intensive care units Primary care clinics
Halverson et al. (2014)[42] USA	Tool development study by consensus method	Panel of 11 clinicians (colorectal surgery, surgical oncology, general surgery, geriatrics, and hospital medicine) with expertise in surgical outcomes measurement, hospital readmissions, gerontology, and nursing For patients following gastro-surgery	Various settings
Hansen et al. (2013)[43] Canada	Pre- and post-intervention study	Older people with diverse comorbidities (n not stated)	11 hospitals varying in geography, size, and academic affiliation
Hansen et al. (2014)[16] Canada	Tool development and testing study	Children admitted to paediatric intensive care unit Four non-PICU intensivists 10 paediatric residents	Metropolitan teaching hospital Paediatric intensive care unit
Harel et al. (2012)[44] Canada	Web-based, cross-sectional survey study	79 dialysis centre directors 21 (27%) completed the survey Patients with end-stage renal disease requiring dialysis and other comorbidities	Dialysis centres of hospitals and satellite regions
Henderson and Corke (2015)[17] Australia	Prospective cohort study using surveys	124 medical subscribers comprising specialists and trainees of Australian and New Zealand College of Intensive Care Medicine online newsletter	Intensive care settings in Australia and New Zealand

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Jurgens et al. (2015)[45] USA	Guideline development with consensus approach	23 expert clinicians and academics Focus on patients with heart failure who have comorbidities unrelated to heart failure (e.g. dementia and osteoporosis), aged greater than 75 years, and patients situated in skilled nursing facilities	Expert group employed in cardiology, geriatrics, nursing homes, palliative care, pharmacology, physical therapy, dietetics, research, and quality of care
Kergoat et al. (2010)[46] Canada	Development of discharge summary tool	Health professionals caring for frail elderly in their transition from hospital to community-based health services 11 physicians and five pharmacists from geriatric facilities in hospitals and 10 physicians and five pharmacists from the community	Movements of patients between geriatric evaluation and management units, acute care settings and community settings
Khan et al. (2010)[30] USA	Development of discharge flowchart	Hospital administrators, nurses, pharmacy, doctors, social service, and quality care workers (N not stated) Involved in care of patients aged 64 years and older regardless of admitting diagnosis	Metropolitan teaching hospital Acute Care for Elders Unit
Kind (2012)[47] USA	Development and evaluation of guidelines for dysphagia in discharge summaries	Hospitalised patients 18 years and older with primary diagnoses of stroke or pelvis/hip/femur fracture with diagnosed dysphagia (n=187) Consensus team of two speech pathologists, two physicians, and one medical student	Metropolitan teaching hospital Acute care units Sub-acute care facilities

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Lane et al. (2013)[48] Australia	Retrospective review of medical records	High-care residents aged 65 years and over presenting to a hospital from residential aged care facilities (n=228 presentations)	Metropolitan teaching hospital Residential aged care facilities Emergency department Inpatient wards Day units Emergency department presentations, elective admissions to inpatient wards and admissions to medical or surgical day units
LeBlanc et al. (2014)[49] Canada	Development of handover checklist for orthopaedic trauma by consensus method	247 members of the Canadian Orthopaedic Association (COA) Orthopaedic surgeons, surgical residents and fellows Patients following orthopaedic trauma	Diverse environments in public and private hospitals
Liem et al. (2013)[50] Austria	Development of outcome guidelines for management of hip fractures in older people by consensus method	17 orthopaedic surgeons, trauma surgeons and geriatricians involved in care of older people following hip fractures	Diverse environments comprising acute, subacute and community care
Madan et al. (2012)[51] USA	Prospective audit evaluation study of Interventions to Reduce Acute Care Transfers (INTERACT) tools	All patients transferred from nursing home to hospital over May-September 2011 (N value not given)	30 nursing homes and associated hospitals

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Manias et al. (2016)[37] Australia	Cross-sectional prospective survey study	707 health professionals completed survey (response rate 14%), represented by nursing (60%), medicine (22%) and allied health (18%) Patients situated in diverse settings	Metropolitan tertiary hospitals Metropolitan general community hospitals Country hospitals Community health centres Mental health services
Manias et al. (2016)[38] Australia	Retrospective clinical audit	127 patient rural transfers to emergency department of metropolitan hospital	Two rural public hospitals One metropolitan public teaching hospital Diverse clinical settings of rural hospitals Royal Flying Doctor Service Emergency department of metropolitan hospital
McBride et al. (2014)[52] United Kingdom	Pre- and post-quality improvement study	160 patients, > 40 years, with patients having an average of three comorbidities with chronic kidney disease (25%) More than half of patients (54%) were New York Heart Association class III, 26% were class II and 4% were class IV Patients of low socioeconomic backgrounds	Public teaching hospital Outpatient case management Specialist cardiology wards, general medical wards
McMurray et al. (2013)[12] Canada	Multi-site ethnographic field study	Patients aged 65 years and older following hip fracture surgery who move across care setting transitions Interviews with hip fracture patients (n=23), their informal carers (n=19) and health professionals (n=100)	Three Canadian sites (large urban, smaller urban, rural)

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
McPhail et al. (2015)[53] Australia	Three-stage instrument development and validation study with Delphi panel, prospective evaluation and consultation with Delphi panel	Delphi panel (n=12) included two representatives from each participating health disciplines in allied health: dietetics, occupational therapy, physiotherapy, pharmacy, speech pathology and social work Prospective cohort of consecutive admissions (n=153) Final consultation with the Delphi panel For patients with complex health conditions presenting to emergency departments	Admissions to the medical assessment and planning unit attached to emergency department of public teaching hospital
National E-Health Transition Authority Ltd (2011)[54] Australia	Tool development study with consensus approach	Stakeholder invitations to comment on the discharge summary core information components Patients with diverse health conditions	24 health professional and consumer organisations within Australia
Newport et al. (2010)[24] USA	Tool development and evaluation study	Discussions with palliative care fellows and medicine residents about components of tool should be included (n not stated) Palliative care patients in diverse settings	Cancer care hospital Hospice Palliative care unit Haematology oncology unit
Quigley et al. (2014)[3] Canada	Qualitative grounded theory interview and focus group study	Focus groups with health professionals (n=15) and interviews with parents (n=5) about experiences with written care plans Interviews with parents (n=12), health professionals (n=21) and privacy officers (n=3). For children in diverse settings	Tertiary care children's hospital Community care centre Paediatric rehabilitation hospital
Reid et al. (2013)[55] Canada	Prospective, observational study	54 residents moving from nursing home to emergency department and back to nursing home	25 nursing homes Emergency medical service Emergency department

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Reilly et al. (2013)[31] USA	Qualitative interview study	Semi-structured interviews with dialysis care physicians, nurses and social workers (n=36) Haemodialysis patients moving between dialysis units and hospital units	Public teaching hospital Inpatient hospital dialysis units Outpatient renal dialysis units
Romagnuolo et al. (2005)[33] Canada	Pre- and post-intervention study	Emergency patients presenting with non-variceal upper gastrointestinal bleeding (n=39 during pre-intervention and n=22 during post-intervention)	Public teaching hospital Emergency department General internal medicine department Endoscopy unit
Scott et al. (2014)[34] Australia	Retrospective case-control study of hospital records	Patients discharged from and readmitted to general medicine service within 30 days of discharge Patients diagnosed with heart failure, urinary tract infection, exacerbation of chronic obstructive pulmonary disease (COPD), cellulitis, chest pain, dementia or delirium, lower respiratory tract infection or pneumonia, sepsis, and syncope or collapse (113 readmitted cases and 198 controls)	General medicine service Metropolitan tertiary teaching hospital
Sharma and Peters (2013)[18] United Kingdom	Non blinded pre- and post-intervention observation study	Mechanically ventilated paediatric patients (n=71 at pre-intervention and n=38 at post-intervention)	Public teaching hospital Paediatric intensive care unit
Sheth et al. (2016)[19] USA	Pre- and post-intervention study	278 paediatric patient transfers from the cardiovascular ICU to acute care unit	University-affiliated children's hospital Cardiovascular intensive care unit Acute care unit

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Sonneveld et al. (2013)[56] Netherlands	Cross-sectional survey study	127 adolescents with juvenile rheumatoid arthritis, neuromuscular disorder with chronic ventilation, or diabetes Type I 166 parents and 19 care providers	Public teaching hospitals Rehabilitation hospitals
Soong et al. (2013)[57] Canada	Development of an evidence-based checklist of safe discharge practices for hospitalised patients	Expert panel from multiple disciplines, including primary care practitioners, hospital clinicians, rehabilitation clinicians, nurses, researchers, pharmacists, academics, and hospital administrators (n=not mentioned) Focus on patients discharged home	Diverse hospitals and healthcare settings
Stoneley et al. (2012)[25] United Kingdom	Retrospective clinical audit	Hospitalised patients with dementia and frailty syndromes of limited prognosis (n=82)	Public teaching hospital
Sujan et al. (2014)[58] United Kingdom	Qualitative study with interviews and observations	270 hours of handover between ambulance officers, emergency department staff and acute medical staff	Two ambulance services Three National Health Service hospitals Emergency departments Acute medical wards
Terrell et al. (2009)[1] USA	Development of quality indicators with a consensual approach	23 members of a task force, 30 members of a geriatric special interest group, and 110 participants at two conferences. Older patients needing emergency care	Geriatricians, emergency physicians, nurses, social workers, and non-medical gerontologists employed in diverse settings
Terrell and Miller (2011)[59] USA	Qualitative focus group study	18 participants comprising nursing home administrators, nursing home and emergency department nurses, physicians, emergency medical services directors, paramedic staff, emergency medicine technicians, and policy makers from Department of Health	Public teaching hospital Emergency department Nursing home

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Tregay et al. (2016)[4] United Kingdom	Qualitative interview study	25 cardiologists and nurses from tertiary centres, 11 primary and secondary health professionals and 20 parents of children who had either died after discharge or had needed emergency readmission	Tertiary hospitals Primary care and secondary care settings Rural and metropolitan environments
Walker et al. (2015)[35] USA	Retrospective chart review of quality indicators associated with emergency department transfer	Randomised sample of 1 500 older patients aged 65 years and older presenting to one emergency department by ambulance	Public teaching hospital One emergency department One residential aged care facility
Wand et al. (2009)[23] Australia	Retrospective hospital medical record audit of all Indigenous Australians referred to a psychiatry service	162 referrals to the consultation liaison psychiatry team of people identifying as Aboriginal and/or Torres Strait Islander	Public teaching hospital Psychiatric clinic Emergency department Inpatient psychiatric ward
Weinger et al. (2015)[5] USA	Development and evaluation of handover tool	452 clinicians in the peri-operative area were given training 981 clinical handovers were observed	Public teaching hospital Paediatric public teaching hospital Adult post-anaesthetic care unit Paediatric post-anaesthetic care unit
White et al. (2012)[6] Australia	Retrospective clinical audit	180 young adults transitioning from paediatric services to adult hospital services	Public teaching children's hospital Various adult public teaching hospitals

Authors (year), country	Type of study	Sample, nature of complexity	Settings for transitions
Williams et al. (2007)[9] Australia	Mixed methods longitudinal study with interviews and a clinical audit	20 patients with comorbidities and requiring an elective total hip or knee joint replacement	Public teaching hospital Orthopaedic preadmission clinic Patients' home
Williams et al. (2015)[7] United Kingdom	Pre- and post-intervention study	Handover three times a day with 50–80 complex patients At baseline: 16 consecutive handovers Following intervention: 16 consecutive handovers For children with diverse health conditions	Regional tertiary paediatric hospital Paediatric medical specialties Paediatric surgery General paediatrics
Wittwer et al. (2015)[20] USA	Cross-sectional survey study	Anaesthesiology residents, nurse anaesthetists, cardiac anaesthesiologists, critical care anaesthesiologist, intensive care nurses, and nurse practitioners (n=134 responses, 45% response rate)	Public teaching hospital Cardiac intensive care unit Operating theatre
Zavalkoff et al. (2011)[21] Canada	Prospective, pre- and post-intervention study	Health professionals from paediatric cardiac anaesthesia, critical care, and cardiothoracic surgery participating in 31 handovers	Public teaching hospital Paediatric cardiac anaesthesia Critical care Cardiothoracic surgery

Appendix 2: Form, structure, information content, study findings and quality of evidence of included papers (N=59)

*Quality appraisals used the MMAT Mixed Methods Appraisal Tool (MMAT) – Version 2011. Pluye, P., Robert, E., Cargo, M., Bartlett, G., O'Cathain, A., Griffiths, F., Boardman, F., Gagnon, M.P., & Rousseau, M.C. (2011). Proposal: A mixed methods appraisal tool for systematic mixed studies reviews. Retrieved on May 20, 2016 from http://mixedmethodsappraisaltoolpublic.pbworks.com Archived by WebCite® at http://www.webcitation.org/5tTRTc9yJ

1. Older patients with complex needs

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Allen et al. 2013[2] Australia	Discharge communication and risk management for referral	Communication pathway for older people between community based district nurses and general practitioners, and hospital	**Referral information:** Person's medical conditions Investigations Level of care Continence status Mental state Mobility Family involvement in care Support systems Allied health needs Healthcare team members Services involved Reason for referral Context of the problem	Dialogue with health professionals was important Focus was on telephone communication, face-to-face meetings, and case conferences Telephone communication was crucial for conveying urgent concerns and the need to problem solve Written communication was considered less effective than verbal communication	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Ash et al. 2014[26] USA	BEFORE YOU ADMIT tool based on SBAR communication	Used by emergency department providers to determine the most appropriate patient specific plan for older people between residential aged care facility and hospital	**Focus on six areas:** Polypharmacy Goals of care Delirium Frailty Aspiration Falls	Readmission rates for patients with heart failure to urban hospital within 30 days reduced from 22.4% to 14.8% Readmission rates for patients with pneumonia reduced from 21.9% to 14.5%	***
Cornu et al. 2012[36] Belgium	Discharge medication list	Medical secretary completed discharge letter using information from discharge medication list and pre-admission medication list. Physician completed discharge medication list. For older people aged 65 years and older moving between residential aged care, and acute medical and surgical and acute geriatric units	**Discharge medication list:** Medication name, dose, frequency, brand	90 patients (47.6%) had one or more discrepancies in medication information at discharge Polypharmacy (five medications or more) in discharge medication list (OR 1.19; p = 0.001) and discharge letter (OR 1.18; p = 0.001) associated with medication discrepancies	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Dedhia et al. 2009[32] USA	Assessment form	Set of five forms and approaches, which began at admission and continued throughout hospitalisation For patients aged 65 years and older with multiple chronic conditions	**Assessment form:** Fall risk Home setup Activities of daily living Cognitive and functional changes Depression Carer capacity Healthcare proxy Code status Practices related to home Medication administration	**Return to the emergency department within three days of discharge:** 10% for control group vs 3% for intervention group **30 day-readmission:** 22% for control group vs 14% for intervention group **Visits to the emergency department:** 21% for control group vs 14%, for intervention group	****
Dedhia et al. 2009[32] USA	Notification of primary care physician about admission	Set of five forms and approaches, which began at admission and continued throughout hospitalisation For patients aged 65 years and older with multiple chronic conditions	**Notification of primary care physician about admission:** Diagnosis Current state Contact details of treating doctor and hospital	**Return to the emergency department within three days of discharge:** 10% for control group vs 3% for intervention group **30 day-readmission:** 22% for control group vs 14% for intervention group **Visits to the emergency department:** 21% for control group vs 14%, for intervention group	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Dedhia et al. 2009[32] USA	Multidisciplinary team coordination	Set of five forms and approaches, which began at admission and continued throughout hospitalisation For patients aged 65 years and older with multiple chronic conditions	**Multidisciplinary team coordination:** Barriers to patient's safe return home Recommendations for management	**Return to the emergency department within three days of discharge:** 10% for control group vs 3% for intervention group **30 day-readmission:** 22% for control group vs 14% for intervention group **Visits to the emergency department:** 21% for control group vs 14%, for intervention group	****
Dedhia et al. 2009[32] USA	Physician–pharmacist collaborative medication reconciliation	Set of five forms and approaches, which began at admission and continued throughout hospitalisation For patients aged 65 years and older with multiple chronic conditions	**Physician–pharmacist collaborative medication reconciliation:** Pre-admission medication regimen Prompts to decide whether to continue, change, or hold medications	**Return to the emergency department within three days of discharge:** 10% for control group vs 3% for intervention group **30 day-readmission:** 22% for control group vs 14% for intervention group **Visits to the emergency department:** 21% for control group vs 14%, for intervention group	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Dedhia et al. 2009[32] USA	Medication discharge instructions	Set of five forms and approaches, which began at admission and continued throughout hospitalisation For patients aged 65 years and older with multiple chronic conditions	**Medication discharge instructions:** Dose, frequency, purpose of each medication	**Return to the emergency department within three days of discharge:** 10% for control group vs 3% for intervention group **30 day-readmission:** 22% for control group vs 14% for intervention group **Visits to the emergency department:** 21% for control group vs 14%, for intervention group	****
Hansen et al. 2013[43] Canada	Better Outcomes for Older adults through Safe Transitions (BOOST) program of work on care across transitions 8P approach	Health professionals could assess for these problems in all hospitalised patients For older people with diverse comorbidities	**Problems with medications:** Patients prescribed several medications, or who are on high-risk medications including anticoagulants, warfarin, heparin, Factor Xa or thrombin inhibitors, antiplatelet agents in combination (e.g. aspirin and clopidogrel), insulin, oral hypoglycaemic agents, digoxin, and opioids **Psychological:** Patients who screen positive for depression or who have a history of depression	Average rate of 30-day rehospitalisation in BOOST units was 14.7% prior to implementation and 12.7% 12 months after implementation ($p = 0.010$)	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Anxiety and substance abuse may also be considered **Principal diagnosis:** Patients with a principal diagnosis or reason for hospitalisation related to cancer, stroke, diabetic complications, chronic obstructive pulmonary disease or heart failure **Physical limitations:** Patients with frailty, deconditioning, or other physical limitations that impair or limit their ability to significantly participate in their own care (e.g. perform activities of daily living, medication administration, and participation in post-hospital care) **Poor health literacy:** Patients who are unable to demonstrate adequate understanding of their care plan as demonstrated by inability to complete “Teach back” successfully		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Poor social support: Absence of a reliable carer to assist with the discharge process and to assist with care after the patient is discharged Social isolation **Prior hospitalisation:** Unplanned hospitalisation in the six months prior to this hospitalisation **Palliative care:** Patient prognosis within a year Presence of advanced or progressive serious illness		
Kergoat et al 2010[46] Canada	Discharge Summary Adapted to the Frail Elderly (D-SAFE) divided into medical discharge summary (22 main items) and discharge prescription (14 main items)	For relaying information between clinicians involved in complex health problems that require multi-professional care For frail elderly in their transition from hospital to community	**Medical discharge summary:** Reason for admission Main diagnosis and other active diagnoses Non-active diagnoses Social and lifestyle history Pertinent findings Investigations and consultations	Consensus was reached after two rounds of consultation for all the items evaluated, where no items was judged 'inappropriate'	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Mental functions Functional status Nutritional status Psychosocial assessment Clinical problems developed during hospitalisation Instructions at discharge and follow-up Patient orientation (location) Additional notes Hospital physician details Name of family physician Case management attendance Resource-person Copies given to patient and family physician **Discharge prescription:** Community or institutional pharmacy pre-hospitalisation Allergies Drug intolerances Creatinine clearance Creatinine Weight		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Signature of the pharmacist doing medication history Medication prior to admission Changes and new medications at discharge and opioids Weekly pill box needed Barriers to patient's adherence Physician's signature Notes for the community or institutional pharmacist Prescription verified by the pharmacist before patient discharge		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Khan et al. 2010[30] USA	7Ps flowchart	To be used by health professionals as a guide to identify measurable outcomes and barriers to communication between the hospital doctor and general practitioner For patients aged 64 years and older with comorbidities	"7Ps" Problem medications Punk (depression) Principal diagnoses Polypharmacy Poor health literacy Patient support Prior hospitalisation	Mnemonic identified barriers to communication Primary care physician mentioned in the discharge summary 55% of the time Summary was transmitted to the primary care physician 73% of the time Patient was seen in clinic 73% of the time 20% of patients received follow-up calls within 72 hours	**
Kind 2012[47] USA	Discharge summary	For communication with health professionals involving acute and subacute care for patients with stroke or fracture with diagnosed dysphagia	**Dietary recommendations and restrictions:** Food recommendations Food restrictions Foods and liquids that stimulate sensation Liquid recommendations Liquid restrictions Nutritional advice Tube feeding No intake by mouth	Consensus obtained for all seven categories for inclusion in discharge summaries 45% of patient discharge summaries omitted all dysphagia recommendations 42% of discharge summaries omitted at least one recommendation 13% included all of recommendations	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Postural and compensatory techniques: Body positioning Head adjustments Oral-pharyngeal strategies **Rehabilitative techniques:** Practice movements related to eating or bolus manipulation **Pacing, sizing, and procedural techniques:** Procedural and sizing recommendations Meal scheduling **Medications:** Crushing, splitting, grinding and chopping pills Take pill with puree Liquid medications **Care provider and communication recommendations:** Supervision, monitoring and assistance Future services with health experts		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Environment		
Lane et al. 2013[48] Australia	Admission tool	Communication about residents aged 65 years and over presenting to a hospital from residential aged care	Explanation of the natural history of major illnesses experienced Agreed goals Limits of care Key people and decision-makers involved in care Patient wishes, if possible	Resuscitation status was documented in 50 (55%) and family discussion in 38 (42%) of 91 admissions Documented family discussion was significantly associated with complications or new events occurring during admission (odds ratio 1.56)	****
Madan et al. 2012[51] USA	INTERACT II tools Stop and Watch Early Warning Tool, SBAR Communication Form, Medication Reconciliation Worksheet, Hospital to Post Acute Transfer Form, Post-Acute to Hospital Transfer Form	Involving communication between health professionals in hospitals and residential aged care settings for patients transferring between these settings	**Stop and Watch Tool:** Seems different than usual Talks or communicates less Overall needs more help Pain – new or worsening Participated less in activities Ate less than usual No bowel movement in three days, or diarrhoea Drank less Weight change Agitated or nervous more than usual Tired, weak, confused, or drowsy	31 transfers took place from May to September. Four deemed to be preventable and 27 non-preventable 100% of patients transferred to the ED were admitted to the hospital None of the preventable and 33% non-preventable transfers had end-of-life planning	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Change in skin colour or condition Help with walking, transferring, toileting more than usual Patient information Family and carer contact Advance directives and goals of care Transferring hospital or post-acute care facility information Post-acute care specialist information Hospital specialist team information Key clinical information for vital signs, mental status and diagnosis High-risk conditions for falls, heart failure, anticoagulation, use of proton pump inhibitors, antibiotics, diabetes Procedures and key findings List of medications, allergies, pain medication Nursing care Key transitional care		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			information for pending laboratory results, follow-up tests and procedures Attached documents and notes		
Reid et al. 2013[55] Canada	Transition tracking tool for whole pathway	Information conveyed between hospital and nursing home staff as older people moved between the nursing home and hospital	Medication list Resident summary Allergies Do not resuscitate order Advance directive Patient care plan Non-clinical resident data Clinical resident data Physicians' notes Diagnosis Emergency department summary Inpatient summary Transfer record Laboratory results Emergency department nurses' notes Patient follow-up Consultations Inpatient nurses' notes	Residents were associated with trigger events that led to movements across transitions Trigger events comprised the following common types: falls (30.9%), change in physical condition (14.7%), nausea, vomiting and diarrhoea (11.8%)	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Operating room notes		
Terrell et al. 2009[1] USA	List of 11 quality indicators for communication between nursing homes and emergency departments	Documentation of care that nursing home residents should have before, during, and after an emergency department visit	Reason for transfer Resuscitation status Medication allergies Contact information for the nursing home, the primary care doctor, and the resident's legal health care representative or closest family member Medication list for medications prescribed to the resident in the nursing home Documentation of requested tests performed in the emergency department Plan of care before discharge from the emergency department Emergency department diagnosis Tests performed with results Request for resident to receive follow-up Documentation of requests for medication to be administered in the nursing	Evaluation and consensus obtained by a Task Force, Geriatric Interest Group, and audiences at two international meetings	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			home		
Terrell & Miller 2011[59] USA	Whole pathway	Documentation of care that nursing home residents should have before, during, and after an emergency department visit	Individuals' details involved in care Medication list	Request to have bidirectional uniform transfer form to guide practice Current forms were long, tedious and unworkable Belief that verbal communication should complement written communication. Belief that relationship building strategies would help with completing care pathways	****
Walker et al. 2015[35] USA	Adherence to quality indicators for communication between nursing homes and emergency departments	Care provided to nursing home residents before, during, and after an emergency department visit	Reason for transfer Resuscitation status Medication allergies Contact information for the nursing home, the primary care doctor, and the resident's legal health care representative or closest family member Medication list for medications prescribed to the resident in the nursing home Documentation of requested tests performed in the	85% of nursing home paperwork contained a reason for transfer 85% listed medication allergies 52% noted advanced directives 46% contained contact information for the nursing home provider should urgent communication be required 70% of nursing home paperwork included a	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			emergency department Plan of care before discharge from the ED ED diagnosis Tests performed with results Request for resident to receive follow-up Documentation of requests for medication to be administered in the nursing home	medication list Nursing home requested a specific test to be done upon transfer in 4% of cases (all CT scans) ED providers documented acknowledgement of this request for 100% of the time 12% of ED providers documented communication with the nursing home prior to patient discharge Electronic medical record required an ED diagnosis to be both assigned prior to discharge and included in ED discharge paperwork ED discharge documentation included ED tests that were performed and their results for 2% of the time	

2. Hospitalised children with complex needs

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Quigley et al. 2014[3] Canada	Whole pathway	Formalised process proposed with key contacts clearly identified For children in community care, acute hospital and rehabilitation hospital settings	Patient diagnosis Name of responsible health professional in hospital and community Involvement of parents	Fragmentation of communication of care Lack of common language in expression Lack of comprehensive care plan Lack of accountability of information Development of structured communication plan needed Identify key contacts to ensure adequate follow-up Central contact person is essential to ensure family can see updates of plan	***
Sonneveld et al. 2013[56] Netherlands	Mind the Gap Tool comprising 24 items for health professionals	Completed by adolescents, parents and health professionals prior to adolescents' move from paediatric to adult care settings For children with juvenile rheumatoid arthritis (JRA), neuromuscular disorder with chronic ventilation (NMD), or type 1 diabetes	**Health professional-related characteristics:** If there are unrealistic expectations of health professionals providing adult care If providers from child and adult care know each other well enough Availability of providers with specialised knowledge about	Lack of transition protocol and transitional program 78.9% Lack of integrated treatment protocol for child and adult care 66.6% Lack of guidelines or standards for adolescents with chronic illnesses 61.1% Lack of coordination between child and adult	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			adolescents with chronic conditions **Transitional care delivery process:** Availability of transition protocol/transitional program Availability of integrated treatment protocol for child and adult care Availability of guidelines or standards for adolescents with chronic illnesses Availability of coordination between child and adult care If joint mission between child and adult care If joint aim of transition between child and adult care Availability of resources to assign a transition co-ordinator Availability of extensive care services after transition Availability of resources for joint care services If insufficient cooperation with external partners Availability of continuity of	care 52.6%	

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			providers for adolescents after transition Availability of preparation for transition **Patient-related characteristics - adolescents:** If overly concerned adolescents, involve parents about transfer to adult care If adolescents take too little responsibility for self-care Non-compliance to therapy of adolescents after transition If adolescents have trouble finding a partner Non-adherence to therapy of adolescents before transition **Patient-related characteristics - parents:** If parents have trouble ceding control to adolescents If lack of involving parents in care services after transfer to adult care If parents are dominantly present in the consulting room		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			If over-concerned or over-protective parents		
Tregay et al. 2016[4] United Kingdom	Discharge tool	Health professionals communicating after children were discharged home after cardiac surgery	Contact information about health professionals involved in child's care Information provided to parents Need for interpreter	Specialist technical terminology and the absence of key basic information rendered discharge documents less useful to community professionals and families Discharge documents were sometimes delayed Inconsistent pathways noted Potential loss of information between multiple teams involved	***
White et al. 2012[6] Australia	12 key pieces of information that should be included in a referral letter	Movement from the paediatric hospital to the adult hospital For children with type 1 diabetes	Date of diagnosis Mode of presentation Antibody status at diagnosis Current insulin regimen Previous insulin regimens Current HbA1c level Previous HbA1c levels Comorbidities and general medical history Complication status	Transition letters were written for 149 out of 180 (82.8%) youth who attended clinics. Transition occurred in an unplanned way or without physician input in 30.6% (55/180) of cases Information contained in transition letters was as follows: current insulin regimen in 97.6%; complication status in 90.4%; current HbA1c in	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			General practitioner details Copy of the letter to the youth or their family Mobile contact number for the young people	89.6%; previous HbA1c in 84%; mode of presentation in 71.2%; date of diagnosis in 66.4%; general practitioner details in 60.8%; previous insulin regimens in 56.8%; antibody status in 48%; comorbidities or general medical issues in 47.2%; a copy of the letter to the family or young person in 42.4%; and mobile contact number for young person in 8.8% of cases	
Williams et al. 2015[7] United Kingdom	Simple checklist to prevent interruptions and late arrivals	Used in patient movements and involving doctors, nurses and outreach team to keep handovers focused For children with diverse health conditions	Stratifying patients according to traffic light acuity Red (unstable) Amber (potentially unstable) Green (stable and on pathway)	Clinicians were late for handover between 0 and 75% of the time at pre-test At post-test, clinicians were late between 0 and 25% of the time. Processing of patient using the traffic light system occurred 80% of the time after post-test	*

3. Patients with mental illness on complex medication regimens

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Brunero et al. 2008[8] Australia	Blue Card, a patient held record	Used by patients with schizophrenia and shared with health professionals during outpatient visits and upon admission to hospital New card given if patient's condition and circumstances changes	Details of specialist doctor and case manager Mental health assessment Medication names, dose and frequency Blood glucose level Weight Blood pressure Cholesterol level Helpful information for patient Advance care directive for acute hospitalisation	69% of patients retained their card at three-month follow-up Patient's knowledge of blood pressure: 8.5% at pre-test, and 34% at post-test (P=0.002) Patients' knowledge of cholesterol: 8.5% at pre-test and 25.5% at post-test (P=0.02) Patients' knowledge of current weight: 66% at pre-test and 85% at post-test (P=0.016) Patients' knowledge of blood glucose level: 6.4% at pre-test and 40% at post-test (P=0.0001)	****

4. Patients with multiple comorbidities

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Balaban et al. 2008[29] USA	Patient Discharge Form provided to patients, in one of three languages	Electronic transfer of the Patient Discharge Form to nurses at the patient's primary care site **Control patients:** Discharge instructions handwritten in English, communication between discharging physician and primary care provider on an as needed basis. For patients with multiple chronic conditions between residential aged care facilities and hospital	Patient demographics Discharge diagnosis Names of hospital doctor (including residents, general physician and specialists) Vaccinations given New allergies Dietary and activity instructions Home services ordered Scheduled appointments with primary care provider, specialists, and for diagnostic studies Pending medical test results Recommended outpatient work-ups Discharge medications list – Continued medications (with dose changes highlighted), new medications and discontinued medications Nursing comments Reminder to patients to bring the form to their next appointment	14.9% of the patients failed to follow-up within 21 days 40.8% of the concurrent and 35.0% of the historical controls failed follow-up within 21 days 11.5% of recommended work-ups in the intervention group were incomplete 31.3% of the concurrent controls and 31.0% of the historical controls had incomplete recommended work-ups	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Berry et al. 2013[27] USA	Care Coordination Tiering Assessment with scores given for number of chronic conditions involved and care needs	Tiering model to determine need for referral. Information provided to case coordinators and liaison clinicians who work with inpatient care team. For patients with multiple chronic conditions across diverse inpatient units	Need for primary or follow-up care (yes/no) Is referral primarily for paediatric, behavioural health, obstetrics, medical-surgical, or regional care Number of severe or chronic conditions based on body systems Selection of complexity applying to patient – age, frailty, cognitive impairment, concerns with carer's ability to meet patient's needs, difficulty with prescribed treatment, frequent hospitalisations, frequent visits to urgent care, high level of resource use, inadequate social support, interpreter needed, early complications, teen or high-risk pregnancy	Of 373 patients, intervention led to a reduced hospitalisation by more than 50% at 24-months post-intervention Of 373 patients, unplanned charges arising from care coordination of emergency department and inpatient hospitalisations decreased by 51% within 12 months and a cumulative 64% within 24 months	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Boxer et al. 2010[40] USA	Heart Failure Disease Management Program comprising four clinical care measures and three discharge care measures	Information to be included from acute care to primary care For patients with diverse chronic conditions	**Clinical care measures:** Ejection fraction Symptom and activity assessment Daily weight and dietary surveillance Medication titration **Discharge care measures:** Patient and carer education Discharge instructions, and follow-up appointment seven days post-discharge	Intervention resulted in increased inclusion of key elements in the discharge instructions from 61% to 80% and in the discharge summary from 61% to 72%	**
Chau et al. 2015[41] Hong Kong	C-CEBAR – adaptation for allied health professionals from the iSoBar tool	Use of tool between physiotherapists situated in acute hospital and rehabilitation hospital. For patients with diverse chronic conditions	**CEBAR:** Contact of case physiotherapist of acute hospital Contact details of the patient Expectations of receiving physiotherapist at rehabilitation hospitals for therapy required. Background and history including previous level of function Assessments and function. Responsibilities and risk management	740 physiotherapy (PT) records (6% of all patients) examined Almost full compliance with tool was obtained for all audit criteria, except for 'Expectations of receiving physiotherapist for therapy required' and 'Responsibilities and risk management', where compliance was 90%	**
Chemail et al.	Electronic discharge	Electronic discharge	Understanding of 20	Six abbreviations were	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
2015[39] Australia	letters	letters sent from hospital doctors to general practitioners. For patients with diverse acute and chronic conditions	commonly used abbreviations: SNT (soft, non-tender) TTE (transthoracic echocardiogram) EST (exercise stress test) NKDA (no known drug allergies) CTPA (computed tomography pulmonary angiography) ORIF (open reduction and internal fixation) HSDNM (heart sounds dual and no murmur) B/G (background) GCS (Glasgow coma scale) ADLs (activities of daily living) PMHx (past medical history) CT (computed tomography) ECG (electrocardiogram) CXR (chest x-ray) O/E (on examination) BP (blood pressure) GORD (gastro-oesophageal	misinterpreted by > 25% of surveyed GPs These were: SNT (soft non-tender), TTE (transthoracic echocardiogram), EST (exercise stress test), NKDA (no known drug allergies), CTPA (computed tomography pulmonary angiography), and ORIF (open reduction and internal fixation)	

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			reflux disease) RR (respiratory rate) ED (emergency department) HR (heart rate)		
Coleman et al. 2006[28] USA	Personal health record	Patient updates personal health record and shares this document with practitioners across health care settings. For patients aged 65 years and older with diverse chronic conditions	Active problem list Medications and allergies Advance care directives, if completed List of warning symptoms or signs that corresponded to the patient's chronic illnesses Concerns in preparation for next encounter	Intervention patients: lower rehospitalisation rates at 30 days (8.3 vs 11.9, P=0.048) and at 90 days (16.7 vs 22.5, P=0.04) than control patients	***
Harel et al. 2012[44] Canada	11-item tool for specific dialysis content in discharge summary	Transfer of information between inpatient and outpatient physicians. For patients with end-stage renal disease requiring dialysis and other comorbidities	**Dialysis - specific items for discharge summary:** Problem that led to hospitalisation Key findings and test results Final diagnoses Brief hospital course Condition at discharge Discharge destination Medications at discharge Follow-up appointments and proposed management plan	62% felt the process of transferring relevant dialysis-specific patient information from the discharging hospital to the home dialysis unit was inadequate	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Anticipated problems and suggested interventions Pending laboratory work and tests Recommendations of sub-specialty consultants Documentation of patient education Name and telephone number for hospital physician		
Jurgens et al. 2015[45] USA	Focus on clinical data, course of treatment, goals of care and plans for follow-up	Information to be used in transitions between skilled nursing facilities, long-term care facilities and hospitals. Patients with heart failure who have comorbidities	**Essential clinical data:** Ejection fraction NYHA functional class Echocardiogram Type of heart failure Pathogenesis Comorbid illnesses Vital signs Laboratory values Diagnostic tests Physical assessment Weight **Important decisions:** Response to therapy Patient cognition	Expert opinion of 23 individuals on consensus for content and intent of guideline	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Adverse events Deviations from expected management Family and patient decisions on treatment plan Weight fluctuations and goals **Plan of care for first 30 days after hospitalisation:** Drug titration goals Target weight, heart rate, and blood pressure Risk for rehospitalisation **Patient and family discharge instructions:** Knowledge and acceptance of plan and education delivered **Medications:** Guideline medications and doses Sensitivities Response to diuretic agents Adverse drug reactions Titration plan		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Patient self-management capacity: Cognition, health literacy, depression, anxiety, self-management competency after discharge **Family self-management support capacity:** Family's understanding of plan of care and their involvement, competency after discharge **Follow-up appointment:** Staff awareness, follow-up appointment is scheduled after discharge home		
Manias et al. 2016[37] Australia	Use of handover sheets, mental prompts or checklists, electronic devices and lanyard card	Senior health professional providing feedback to junior health professionals about their handover practices. For patients with various comorbidities in diverse settings, including public, private, metropolitan and rural hospitals	Assessment tool results Clinical information Critical incident analysis. Evidence of communication with other health professionals Evidence of involvement of patients and family members	41% (n=290) of health professionals believed that from their experience, adverse events were a possible consequence of poor handover	***
Manias et al. 2016[38]	iSoBAR format comprising identification,	Doctor to doctor information transfer from Royal Flying Doctor	**Identification:** Date and time of interaction,	Lack of information on who made and who received	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Australia	situation, observations, background, agreed plan and readback	Service to emergency department doctor For seriously ill patients moving from rural to metropolitan hospital	patient name, age, date of birth, contact address, medical record number, doctor's name at transferring hospital, clinical area, speciality, and contact details of receiving clinician **Situation:** current medical diagnosis **Observations:** Temperature, blood pressure, respirations, pulse, oxygen saturation, neurological state **Background:** Relevant past medical history **Agreed plan:** Expected arrival time at receiving hospital, recommended tests and procedures, medications to be ordered **Readback:** Ready access of information relating to patients	'patient expect' calls Information on identification sticker for name and gender did not always correspond with details in 'patient expect' calls Name of clinicians in receiving hospital provided in 11% of calls Actions to be taken included in 19% of calls Planning was restricted to who to contact to review instructions Inconsistency and overuse of abbreviations	
McBride et al. 2014[52] United Kingdom	Identification of patient with heart failure, and key	Need to identify patients with left ventricular, dysfunction, heart failure, and problems with	Card indicates the patient has heart failure Card references the last	Alert cards were issued to 119 patients. At 12 months, 38 patients from community nurses' caseloads	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
	diagnostic findings Request to notify community nurse in case of hospital admission	ejection fraction as these influence management during the inpatient stay and risks to prognosis. For patients with heart failure and comorbidities	echocardiogram and provides data on ejection fraction and left ventricular function Contact details of general practitioner and community nurse Instruction to contact the community nurse in the case of hospital admission	experienced 61 hospital admissions. Community nurses were informed of 80% of admissions by hospital clinicians and general practitioners (61%) and family members (38%). They were also informed of 59% of discharges Notification of admissions by hospital staff increased from 0 notifications in the previous 12 months to 19 notifications during the intervention period	
McPhail et al. 2015[53] Australia	Set of seven items in the Rapid Assessment Prioritisation and Referral Tool (RAPaRT)	Well-resourced allied health teams in emergency care settings may use RAPaRT instrument to trigger an allied health referral pathway from a single positive response. Less well-resourced teams may elect to use a two positive response cut-off before a referral is triggered, which could eliminate inappropriate treatment. For patients with non-life	Previous regular help Hospitalised in past 6 months More than three medications prescribed Walking aids or assistance Someone else shopping Lost weight recently, eating poorly Falls in the past six months	Area under the receiver operating characteristic curve was 0.803 for these seven items in predicting when a referral was warranted	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
		threatening acuity and with chronic conditions in emergency care settings			
National E-Health Transition Authority Ltd, 2011[54] Australia	Summary document produced during a patient's stay in hospital as an admitted or non-admitted patient, and issued when or after a patient leaves hospital	Discharge summary to support continuity of care as the patient returns to community healthcare providers For patients with diverse health conditions	Patient name and details Nominated primary healthcare providers Facility Document author Document recipients Encounter details Problems/diagnoses Clinical synopsis Diagnostic investigations Clinical interventions Current medications on discharge Ceased medications Allergies and adverse drug reactions Alerts Arranged services Recommendations Information provided to patient and other relevant parties	Consultation and feedback obtained from stakeholders of 24 health professional and consumer organisations	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Reilly et al. 2013[31] USA	Focus on medication management	Communication through documentation to be transferred before the patient's next outpatient session, which was one to two days after discharge For haemodialysis patients with comorbidities moving between units	**Medication list:** Especially intravenous antibiotics to be administered during treatment Summary of hospitalisation **Dialysis procedure:** Dry weight to guide fluid removal targets **Changes in dialysis prescription:** Electrolyte composition **Plans for follow-up care**	**Risks of poor communication:** Delay or omitting a course of antibiotics Follow-up plans for appointments often missed Incompatibilities in outpatient and inpatient electronic medical records	****
Romagnuolo et al.[33] 2005 USA	One-page checklist, outlining detailed recommendations (3-Ds—diet, drugs, discharge plan)	Gastroenterologist communicating to admitting service on hospital stay for upper gastrointestinal bleeding. Completed checklist addressing factors relevant to discharge planning was added to the procedure report For patients with upper gastrointestinal bleeding	Diet Proton pump inhibitor use *Helicobacter Pylori* eradication regimen Non-steroidal anti-inflammatory drug use Complete blood count Discharge plan time Follow-up in gastroenterology clinic, general practitioner or endoscopy clinic	Median in-patient stay was 7.0 (95% CI 2–24) versus 3.5 (95% CI 1–12) days for the pre-intervention and post-intervention periods, respectively (P=0.003)	****
Scott et al. 2014[34]	Quality of care using routinely collected data on completed	Documentation of assessment and management strategies at	Diagnosis Assessment and	Among readmitted patients, 50 (44.3%) were associated with at least one quality	**

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Australia	episodes of care during patients' hospital stay	transitions of care Patients with comorbidities admitted within 30 days of discharge	management of active comorbid disease Management of primary clinical problem during admission Management of preventable complication of procedure or therapy undertaken or initiated during index admission Assessment of needs and limitations Patient and carer education about clinical management of disease Communication of discharge information to post-hospital care providers Advance care plan Palliative care plan Organise appropriate medical follow-up Referral to chronic disease management and outreach service where indicated Referral to rehabilitation program Arrange required home	factor versus 23 (11.6%) controls (P < 0.001). Most common factors were: failure to develop or activate an advance care plan (18, 15.9% vs 2, 1.0%; P < 0.001); sub-optimal management of presenting illness (13, 11.4% vs 0, 0%; P < 0.001); inadequate assessment of functional limitations (11, 9.7% vs 0, 0%; P < 0.001); and potentially preventable complication of therapy (8, 7.1% vs 1, 0.5%, P = 0.002)	

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			assistance and community support		
Soong et al. 2013[57] Canada	Checklist of Safe Discharge Practices. Checklist domains include indication for hospitalisation, primary care, medication safety, follow-up plans, home care referral, communication with outpatient providers, and patient education	Sequence of events that need to be completed throughout a typical hospitalisation. Patients of diverse comorbidities	**Hospital:** Assess patient to see if hospitalisation is still required **Primary care:** Identify and confirm patient has an active primary care provider Alert care team if no primary care provider or search for one Contact primary care provider and notify of patient's admission, diagnosis, and predicted discharge date. Book post-discharge primary care provider follow-up appointment within seven to 14 days of discharge **Medication safety:** Develop best possible medication history and reconcile this to admission's medication orders Teach patient how to properly use discharge medications and how these relate to the	Three cycles of panel meetings approved final list	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			medications patient was taking prior to admission Reconcile discharge medication order with best possible medication history and medications prescribed while in hospital **Follow-up:** Perform post-discharge follow-up phone call to patient for patients at risk During call, ask has patient received new medications Check if patient received home care Remind patient of upcoming appointments If necessary, schedule patient and carer to come back to facility for education and training If necessary, arrange outpatient investigations (laboratory, radiology) If necessary, book specialty clinic follow-up appointment **Home care:** Home care agency shares		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			information, where available, about patient's existing community services Engage home care agencies (e.g. interdisciplinary rounds); If necessary, schedule post-discharge care **Communication:** Provide patient, community pharmacy, primary care provider, and formal carer (family, long-term care, home-care agency) with copy of Discharge Summary and the Medication Reconciliation Form, and contact information of attending hospital physician and inpatient unit **Patient education:** Clinical team performs teach-back to patient Explain to patient how new medications relate to diagnosis; Thoroughly explain discharge summary to patient (use teach-back if needed) Explain potential symptoms, what to expect while at home, and under what		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			circumstances patient should visit ED		
Sujan et al. 2014[58] United Kingdom	Whole pathway from emergency care	Patients with diverse comorbidities requiring emergency care	Admission diagnosis Goals of care Person taking on responsibility for care	Organisational focus to document everything for legal and quality assurance purposes Assumption that with comprehensive documentation, multiple handover can be avoided, as people can simply read notes Clinicians felt they could not rely on documentation alone as it cannot convey subtleties and does not allow for questions. It was difficult to prioritise what is important Documentation was sometimes variable or inaccurate between clinicians, and professional accountability requires that clinicians obtain a full picture Lack of time and capacity led to inadequate use of documentation	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
				When clinicians were busy, they wrote less often, and notes were not read very frequently	
Williams et al. 2007[9] Australia	Discharge summary	For patients with chronic kidney disease and comorbidities moving between hospital and home	Medications Identification of all comorbidities Treating hospital doctor Involvement of primary care provider	Participants disclosed illnesses, such as depression, migraines, high cholesterol and psoriasis, which were not documented in the medical pre-admission examination Discharge summary focused on the joint replacement and related complications Comorbidities were only recorded in the admission notes of five participants Comorbidity education and management were not included in care plans Comorbidities were ignored unless acute symptoms developed	****

5. Patients' needs across the peri-operative pathway

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Austin Health Post-Operative Surveillance Team (POST) Investigators 2010[10] Australia	Post-operative referral form	Post-operative surveillance for at risk patients for five days between operating rooms, intensive care and surgical wards	Patient name Updates on care from clinicians Assessment of charts Assessment of patient Assessment of devices Assessment of medication chart Treatments Documentation and communication of assessment and treatment	Continuous involvement of surgical staff needed to establish a mutually acceptable model of care, rules of engagement and pathways of communication	***
Choromanski et al. 2014[11] USA	List of items provided in survey	Use of tool for patients moving from intra-operative to post-anaesthetic care domain	**Factors to be covered:** Allergies Medications Medical history Anaesthesia events Surgery events Post-operative plan Code status Blood refusal Antibodies Airway difficulties	80.5% (165/204) of responders stated that these factors would be sufficient for an effective, complete documentation of handover	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Diagnostic studies		
Halverson et al. 2014[42] USA	Seven pre-operative, one peri-operative, eight post-operative, 17 discharge and one follow-up factors	Used by clinicians across the peri-operative pathway from pre-operative admission to post-discharge follow-up for patients having gastro-surgery	**Pre-operative:** Pre-operative evaluation of the patient's comorbidities Communication to the referring physician Written information plan to patient about analgesia, length of stay, potential complications, discharge disposition **Peri-operative:** Standardised protocol **Post-operative:** Evaluation of wound, nutrition, nursing, and physical therapy Care of stoma instructions to patient Prophylactic antibiotics, following surgery Communication between surgeon and primary care physician **Discharge:** Surgeon contact details to patient	34 process measures for prevention of readmission judged as being valid by expert panel	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Provider's contact details for follow-up appointments Instructions for diet, medications, pain, wound care, activity restrictions, and drain care When to call surgeon's office or to go to emergency department Phone number if patient has concerns after discharge Pending laboratory and pathology results Necessary follow-up imaging or laboratory needed Translation services, if needed Evaluation of patient understanding **Follow-up:** Assessment of hydration and electrolytes within one week of discharge		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
LeBlanc et al. 2014[49] Canada	Diagnosis, associated injuries, comorbidities, readiness for the operating room, stability of the patient, history or mechanism of injury and outstanding issues	Checklist for use in trauma patient handover from emergency department to pre-operative assessment clinic	Patient demographics Injury Pre-operative considerations Patient factors such as substance abuse, functional status, use of walking aids Blood results Consent obtained Issues preventing patient from being admitted to operating room	**Most important aspects identified for handover by experts:** Having the handover occur the same way each day Having access to all appropriate radiographs at the time of handover Having adequate time for handover Having access to all appropriate laboratory work/patient information at the time of handover Being able to spend time with severely ill patients	**
Liem et al. 2013[50] Austria	Subjective and objective outcome parameters and their measurement relating to mortality, length of stay, time to surgery, complications, readmission rate, mobility, quality of life, pain, activities of daily living, medication use, place of residence, and	Outcome parameters collected and documented by health professionals on admission, discharge, at 30 days, 90 days and at one-year post-admission and communicated between health professionals. For older people following hip fracture	**Length of stay:** Midnight census method **Time to surgery:** Time from admission until arrival in operating room **Complications:** Type and rate **Medical and surgical readmission:** Type and rate	Consensus of outcome parameters among 17 health professional experts in orthogeriatric hip fracture after a two-day interdisciplinary meeting	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
	costs		**Mobility:** Parker mobility score, Timed Up and Go **Quality of Life:** EQ-5D **Pain:** Verbal rating scale Satisfaction **Activities of Daily Living:** Barthel Index Falls **Medication use:** Inappropriate medications with adverse drug reactions and complications, list of medications causing osteoporosis **Place of residence:** Home, residential aged care, hostel care, hospice and palliative care **Costs:** Associated with treatment and care		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
McMurray et al. 2013[12] Canada	Whole pathway	For communication between health professionals about patients aged 65 years and older following hip fracture surgery	Provider details Post-operative care	Documentation is a control mechanism that identifies service needs and informs resource allocation in subsequent settings Documentation provides some data about patients but it is rarely complete Information exchanges within organisations are more likely to consider the needs of clinicians rather than those exchanges occurring between organisations Continuity of care is affected by missing, late or unnecessary documentation; duplication of data collection; and lack of integration of electronic systems	****
Weinger et al. 2015[5] USA	Elements of key information following SBAR format	Post-operative handovers between anaesthesia providers (APs) and PACU registered nurses. For adult and child movements following anaesthesia	**Situation:** Patient name, age and weight Anaesthetic type Fitness of surgery Procedure information Allergies	Proportion of acceptable handovers increased significantly from 7% to 70% in the adult PACU from the baseline to the post-refresher time period and from 22% to 72% (65%–	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Arm band details Special precautions relating to do not resuscitate status Post-operative positioning Implants Self-injury **Background:** Pertinent history Pertinent medications Airway type, analgesia and complications of anaesthesia Fluids given, urine and blood lost Surgical details **Assessment:** Current condition Status of tubes, lines and wires Critical laboratory values Plans to extubate **Recommendations:** Intra-operative events that require plans for follow-up Post-operative laboratory tests and x-rays	79%) in the paediatric PACU from baseline to the post-training period Three years later, the unadjusted estimate of the probability of an acceptable handover was 87% in the adult PACU and 56% in the paediatric PACU	

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Post-operative management and patient disposition		

6. Complex patients admitted to intensive care

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Bates et al. 2014[13] USA	10 item checklist	Acts as a measure of level of shared clinical understanding regarding the condition and treatment plan for handover in paediatric intensive care. Includes health professionals within unit and external treatment teams	Clinical condition over last 12 hours Cardiovascular plan for care Airway goal Primary anatomic source of pulmonary blood flow Changes in pulmonary versus systemic perfusion flow in patient Indication for current anticoagulant Barrier to discharge home or to ward Other active cardiovascular issues Non-cardiovascular issues needing therapy or monitoring	Inter-rater agreement with video simulation: 0.89% Mean levels of agreement ranged from 0.41 to 0.87 (median 0.77) 100% compliance with in situ testing	***
Dressler & Shutt 2013[14] USA	Paediatric Early Warning Score, standardised tool with SBAR format that identifies patients who are at risk for deterioration	Used in transport of children to hospital, emergency departments and inpatient wards by clinicians. Children with a score of five or higher deemed at risk of problems	**Behaviour:** Playing, sleeping, irritable, lethargic **Cardiovascular:** Pink, pale or dusky, grey or cyanotic, tachycardic **Respiratory:** Normal, using accessory	33 children had a score of five or above out of 264 transports 85% had the entire receiving team assemble at bedside for a collaborative report Paediatric Early Warning score sent with estimated	**

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			muscles, grunting, using oxygen	time of arrival at emergency department 98% of the time	
Ellis et al. 2013[15] USA	Guide for telephone and written follow-up with primary care providers	Liaison between acute care provider and primary care provider following patients' admission to intensive care	Questions to pose from acute care provider to primary care provider: - were you aware that the patient is in the hospital? - who let you know about the illness or hospitalisation? - did the patient contact your service about the present illness before coming to the hospital? - was any prehospital intervention recommended by you? - have you seen the patient in clinic in the last six months? - was this telephone call useful to you?	Primary care providers implemented pre-hospital management for 8/300 episodes 21% of primary care providers were aware of the acute illness before their patient was admitted 33% of primary care providers were not aware that their patient was in intensive care	****
Hansen et al. 2014[16] Canada	Minimum Data Set (MDS) mnemonic	To be used by PICU clinicians when communicating with each other and external colleagues. For children admitted to paediatric intensive care unit	Identification bar highlights patient's trajectory in red, yellow or green Allergies Medications Pertinent patient history	Residents found that patient data were not redundant or excluded in the tool Handover time was appropriate Format was easy to comprehend	**

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Body system areas 12-hour follow-up plan Contingency plan Read-back from sender to receiver needs to be ticked	Transition to the iPad device was smooth	
Henderson & Corke 2015[17] Australia	Personal Values Report with 60 questions posed to patients about medical treatment	Personal Values Report developed by Barwon Health Victoria, for doctors to determine patients' attitudes and beliefs about medical treatments. Information relayed between intensive care doctors and doctors external to the unit. For intensive care patients	Patients' decisions about life saving treatment Preferences for receiving treatment if patients become incapacitated	121 of 124 participants (97.6%) agreed or strongly agreed that the Personal Values Report (PVR) helped them to have an understanding of the patient's wishes 90.3% felt that it gave them adequate information to enable them to feel reasonably confident in their treatment decision	*
Sharma & Peters 2013[18] United Kingdom	DEFAULT mnemonic comprising 7 items	Addressed by health professionals attending ward round discussions in intensive care. For mechanically ventilated paediatric patients	D: Do not resuscitate (DNR) status is clear E: Endotracheal tube and cuff is safe F: Fluid strategy and feeding plan A: Agreed analgesia and sedation U: Ulcers of the skin and gastrointestinal tract	Increase in median days of accidental tube removal (14 vs 150 days, P<0.0001) Trend towards an increase in proportion of patients who have tidal volumes in expected range (49% vs 61%, P=0.09)	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			L: Lines out T: Tidal volumes <8 ml/kg		
Sheth et al. 2016[19] USA	**I-PASS mnemonic:** I: Illness severity P: Patient summary A: Action list S: Situation awareness and contingency planning S: Synthesis by receiver	Handover process from intensive care to acute care unit For paediatric patient transfers from the cardiovascular intensive care to acute care unit	I: Illness severity; stable, needs watching, unstable P: Patient summary; summary statement, events leading to admission, hospital course, ongoing assessment, plan A: Action list; to do list, time line and ownership; know what is going on, plan for what might happen S: Situation awareness and contingency planning S: Synthesis by receiver; receiver summarises what has been heard, asks questions, restates key actions	Time between verbal hand-off and patient transfer decreased from baseline (397 +/- 167 minutes) to the post-intervention period (24 +/- 21 minutes) (P < .01) No differences in rates of readmission, rapid response team calls, or mortality were observed	****
Wittwer et al. 2015[20] USA	List of specific items for patients following cardiac surgery	Anaesthesia provider completed a paper handoff form, which was given to the ICU nurse on arrival to the ICU. For patients admitted to intensive care following cardiac surgery	**Operating room providers:** Procedure performed, name, invasive lines, pacing wires, and cardiac index at closure **Intensive care providers:** Cardiac index at closure, excessive bleeding, pacing wires, intubation difficulty,	Some information was common and important to both groups (cardiac index at closure and pacing wires). Differences related to name, procedure performed, invasive lines, intubation difficulty, and	*

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			and haemoglobin level	haemoglobin level	
Zavalkoff et al. 2011[21] Canada	Pre-operative information, medical intra-operative information, surgical intra-operative information, and information about the patient's "current" (immediate post-operative) status	To guide the information transmitted by the surgeon and anaesthesiologist to the paediatric intensive care unit team during handover of post-cardiac surgery patients	**Pre-operative considerations:** Age Weight Pre-operative diagnosis Past medical history Preoperative status and condition Medications Allergies **Intra-operative surgical considerations:** New diagnosis Pump time Clamp time Whether circulatory arrest occurred Described arterial line for gauge, location Central venous line for length, location, lumens Described peripheral intravenous lines for location, gauge, difficulty with insertion Described intra-cardiac lines	Trend toward more patients being free from high-risk events in the post-intervention group (31.2% vs. 6.7%), but not statistically significant (P=0.1)	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Described chest tubes Described wires **Intra-operative medical considerations:** Laryngoscopy grade Problems ventilating Endotracheal tube size Problems weaning for cardiopulmonary bypass Hemodynamic problems Dysrrhythmia Significant blood loss Blood product type and amount Antifibrinolytic given Protamine described and time given Electrolyte problems Glucose problems Lactate (max, last) Last gas given **Current status post-operatively:** Peak inspiratory pressure or tidal volume		

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
			Peak end expiratory pressure Fraction of inspired oxygen Nitric oxide use Vasoactive medication given and dose Pacing given with settings and if dependent pacing Post-operative echocardiogram results Anticipated issues post-operatively Goal for oxygen saturation Overall goal		

7. Complex health needs for Aboriginal and Torres Strait Islander people

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Bolch et al. 2005[22] Australia	Discharge plan for rural health	Process of communication between hospital staff and community health service providers. For Aboriginal people in rural healthcare settings	Screening process for patients with complex needs Patients and carer involvement Medications Lifestyle Diet for patient Symptoms experienced Multidisciplinary teamwork involvement in hospital and the community	Proportion of patients being risk-screened within one day of admission: 15% at baseline, 78% following intervention Community providers notified > 1 day prior to discharge: 0% at baseline, 78% following intervention Discharge plan commenced within 48 hours of admission: 42% at baseline, 90% following intervention	**
Wand et al. 2009[23] Australia	Whole pathway	Communication with health professionals of Aboriginal and Torres Strait Islander peoples referred to a hospital psychiatry service	Recommendations based on findings: Assessment for drug and alcohol disorders Assessment for depression Consultation with Aboriginal health worker and general practitioners	Patient's Aboriginal ethnicity was mentioned in 52.5% of consultation liaison assessments Aboriginal health worker was consulted in 48.1% of cases Most common management approach involved pharmacotherapy Consultation liaison service instigated legal interventions in 25% of cases	****

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
				45 patients were referred for psychiatric admission following their assessment Mental health follow-up was arranged in 43.8% of cases	

8. Complex health care needs for palliative care patients

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
Newport et al. 2010[24] USA	Providers' Signout for Scope of Treatment (PSOST)	Assists in smooth transitions of care on nights and weekends, especially when the patient is near death, and aimed at preventing over-escalation of care and underuse of lifesaving treatments such as resuscitation. For palliative care patients in diverse settings in acute and palliative care settings	Brief history of present illness Past medical history Resuscitation code status Significant laboratory or diagnostic test results, ''to do'' list of laboratory tests and procedures Care plan	Residents reported great level of satisfaction in using the tool Fellows reported interventions aligned with patients' goals Nurses reported the tool assisted in their decision-making	*
Stoneley et al. 2012[25] United Kingdom	Discharge summary and letter for end-of-life	Discussions with hospital clinicians and primary care practitioners about end-of-life care For patients with dementia and frailty syndromes of limited prognosis	Prognosis Resuscitation status Preferences for care Preferred place of death Pre-emptive palliative prescribing	**Documentation of aspects of care:** Prognosis 39.9% Resuscitation status 53.27% Preferences for care 45.20% Preferred place of death 18.20% Pre-emptive palliative prescribing 50.48% Deaths within three months 76.88% Re-admissions with three	***

Authors (year), country	Form (text type) of documentation	Structure (ordering of information) of documentation	Summary of the evidence for content of information	Findings	Quality Appraisal*
				months 0.9% Eventual deaths in hospital 8.16%	

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