

# **A systematic review of older patients' experiences and perceptions of communication about managing medication across transitions of care**

## **1 ABSTRACT**

### **2 Background**

3 Communication about managing medications may be difficult when older people move across  
4 transitions of care. Communication breakdowns may result in medication discrepancies or  
5 incidents.

### **6 Objective**

7 The aim of this systematic review was to explore older patients' experiences and perceptions  
8 of communication about managing medications across transitions of care.

### **9 Design**

10 A systematic review

### **11 Methods**

12 A comprehensive review was conducted of qualitative, quantitative and mixed method studies  
13 using CINAHL Complete, MEDLINE, Embase and PsycINFO, Web of Science, INFORMIT  
14 and Scopus. These databases were searched from inception to 14.12.2018. Key article cross-  
15 checking and hand searching of reference lists of included papers were also undertaken.  
16 Inclusion criteria: studies of the medication management perspectives of people aged 65 or  
17 older who transferred between care settings. These settings comprised patients' homes,  
18 residential aged care and acute and subacute care. Only English language studies were  
19 included. Comments, case reports, systematic reviews, letters, editorials were excluded.  
20 Thematic analysis was undertaken by synthesising qualitative data, whereas quantitative data  
21 were summarised descriptively. Methodological quality was assessed with the Mixed Methods  
22 Appraisal Tool.

### **23 Results**

24 The final review comprised 33 studies: 12 qualitative, 17 quantitative and 4 mixed methods  
25 studies. Twenty studies addressed the link between communication and medication  
26 discrepancies; ten studies identified facilitators of self-care through older patient engagement;  
27 18 studies included older patients' experiences with health professionals about their medication  
28 regimen; and, 13 studies included strategies for communication about medications with older  
29 patients. Poor communication between primary and secondary care settings was reported as a

30 reason for medication discrepancy before discharge. Older patients expected ongoing and  
31 tailored communication with providers and timely, accurate and written information about their  
32 medications before discharge or available for the post-discharge period.

### 33 **Conclusions**

34 Communication about medications was often found to be ineffective. Most emphasis was  
35 placed on older patients' perspectives at discharge and in the post-discharge period. There was  
36 little exploration of older patients' views of communication about medication management on  
37 admission, during hospitalisation, or transfer between settings.

### 38 **Keywords**

39 Communication; Medication management; Transitions of care; Older patients; Patient  
40 experience; Systematic review

## 1. Introduction

Transitions of care involve movements of patients between health care settings, within different levels of care, and introduce comprise different health professionals managing their care<sup>1</sup>. Older people are likely to experience multiple chronic conditions, sudden health status changes, and problems relating to their medication management. Care transition pathways of older patients can vary in nature, and include transfers from home-to-hospital, hospital-to-home, different settings of care within one hospital, or movements between different hospitals, home-to-skilled care facilities, skilled care facilities-to-home, and home-hospital-skilled care facilities<sup>1</sup>.

Older patients are at increased risk of experiencing medication discrepancies across transitions of care because of possible breakdowns in communication about managing their medications<sup>2-5</sup>. Medication discrepancies are any inconsistencies between medications as patients move between different environments. These medication discrepancies are often poorly communicated or inadequately documented in patients' medical records. There could be unintentional and intentional medication discrepancies. Unintentional discrepancies stem from unplanned medication changes, whereas intentional medication discrepancies happen where health professionals make the changes to the medication regimens depending on alterations in patients' clinical manifestations.<sup>6</sup> Medication discrepancies can involve omission of medication, additional medication, or change in dose, route or administration of a medication<sup>7, 8</sup>. An incomplete or inaccurate medication history at any point during a patient's care can lead to medication discrepancies<sup>9-12</sup>. Patients who move between transitions of care can experience medication errors. Medication errors are defined as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer<sup>13</sup>. Medication discrepancies and medication errors can lead to adverse drug events, which are adverse events that result in patient harm<sup>15</sup>. Past research has shown medication discrepancies are more prevalent during hospital admission and discharge because of poor communication and inadequate information transfer<sup>14-18</sup>. Previous studies have also shown that the lack of information conveyed about medication changes was also common when patients moved from the emergency department to medical wards<sup>19-21</sup>.

Patients with polypharmacy and multimorbidities are likely to experience problems associated with medication management during care transitions. These problems can involve patients not receiving needed medication or taking unnecessary medication, improper

75 administration of medication, overuse or underuse of medication and the use of medication for  
76 an excessive or insufficient duration<sup>22</sup>. Miscommunication between patients and health  
77 professionals, as well as amongst health professionals of different disciplines is the primary  
78 reason for medication management problems across care transitions<sup>3,5</sup>. Within the context of  
79 busy work environments in which health professionals work, such as pharmacists, physicians  
80 and nurses inappropriate reporting and poor communication about medications are likely to  
81 happen<sup>23</sup>. Poor communication about medications is particularly of concern at the time of  
82 admission to and discharge from hospital, which can lead to increased readmissions, adverse  
83 drug events<sup>5</sup> and medication errors<sup>24,25</sup>. Precise, clear and comprehensive communication of  
84 new prescribed, ceased or changed medications during hospitalization or on patients' transfer  
85 between environments requires interdisciplinary collaboration between pharmacists,  
86 physicians, and nurses in hospitals and also primary health care providers<sup>26</sup>. Notably,  
87 pharmacists play an integral role in communicating medication knowledge during patients'  
88 transitions of care by conducting medication reviews and medication reconciliation, providing  
89 patient-centred education, resolving many medication discrepancies with doctors, organising  
90 telephone follow-ups with patients or primary care providers upon discharge<sup>27-29</sup>.

91         Communication is a cyclical process of sending, receiving, and obtaining feedback in  
92 a timely and accurate manner, and also understanding what information is being conveyed  
93 between individuals<sup>30,31</sup>. Communication can fail in high-task situations during patient transfer  
94 and at critical junctures, when health professionals are under stress or interrupted during an  
95 episode of communication. This communication failure can compromise the completeness and  
96 accuracy of information being transferred<sup>31</sup>. Previous studies also reported different barriers to  
97 patients undertaking medication communication with health care providers, such as the  
98 presence of unpredictable discharges<sup>32</sup>, chaotic and busy patient admissions<sup>33</sup>, lack of  
99 availability of medication information at admissions<sup>34,35</sup>, and lack of explanation of new  
100 medications by health care providers<sup>32</sup>. We defined communication about medication as the  
101 exchange and understanding of information between older people, their families and health  
102 care team members by verbal, non-verbal, electronic and written means. Medication  
103 management refers to activities relating to making decisions to prescribe medications,  
104 administering medications, reviewing and recording medication orders, issuing, distributing  
105 and storing medications, as well as provision and transfer of information about medications.  
106 The patient is the focus of these medication management activities, especially when they are  
107 self-medicating<sup>36</sup>. Communication about medications is important because it affects patient  
108 satisfaction and adherence with medication instructions, making them feel more valued,

109 supported, and respected. Effective communication enables patients to take a more active role  
110 in managing their medications<sup>31</sup>.

111 In the era of digitalization, health care systems have involved shifting from paper to  
112 electronic health record processes to facilitate timely sharing of high-quality information across  
113 transition of care<sup>37</sup>. However, use of electronic processes can have unintended consequences  
114 in managing medications, leading to medication discrepancies and medication errors, which  
115 ultimately produce patient harm as a result of system or user-related factors<sup>38</sup>. Medications that  
116 need to be prescribed may be missing in electronic admission reports and discharge summaries,  
117 incorrect medications may be supplied through electronic dispensing areas, and incorrect  
118 medications may be selected and supplied to patients when discharged home<sup>38</sup>. In particular,  
119 differences in vendor systems that do not communicate with each other can lead to a lack of  
120 shared information when patients are transferred between different hospitals. Electronic  
121 systems may cause a communication failure about reconciled medication regimen or the  
122 indication for newly prescribed medications<sup>1,39</sup>.

123 There have been no systematic reviews exploring older patients' own experiences and  
124 perceptions of communication about managing medications across transitions of care. Previous  
125 systematic reviews have examined interventions designed to improve transitional care of older  
126 patients mainly at the point of discharge<sup>40,41</sup> or transfer between acute and subacute settings  
127<sup>42</sup>. Other reviews have examined the application of transitional care models to specific patient  
128 groups such as older patients with heart disease or stroke<sup>43-45</sup>. In some reviews, focus has been  
129 placed on strategies promoting safe transitions for older people across settings<sup>40,41</sup>. One  
130 systematic review has examined interventions focused on managing medication on admission  
131 and discharge<sup>46</sup>. Most emphasis has been placed on the classification of medication  
132 discrepancies that occur across transitions of care without considering older patients'  
133 perspectives about communication processes involved<sup>47-49</sup>.

134 In view of the value of patient-centred care<sup>50</sup>, it is important to consider the perspectives  
135 of older patients relating to communication about medication management at transitions of  
136 care. Therefore, the aim of this systematic review was to examine older patients' experiences  
137 and perceptions of communication about managing medications across transitions of care.

## 138 **2. Methods**

### 139 *2.1. Design*

141 A systematic review of qualitative, quantitative and mixed method studies was  
142 conducted. The protocol of this systematic literature review was registered in PROSPERO

143 (CRD42018094287). The Mixed Methods Appraisal tool was used to appraise the  
144 methodological quality of different study designs. The PRISMA statement guided conduct of  
145 the systematic review <sup>51</sup>.

## 146 *2.2. Search Methods*

147 A comprehensive search was undertaken of electronic bibliographic databases from the  
148 date of their inception to 14.12.2018. Identified keywords were used as search terms for all  
149 included databases. Keywords used as search terms related to: transitions of care (e.g. transition  
150 point\*, transfer, continuity of care, handoff), medication management (e.g. medication  
151 reconciliation, medication error), communication (e.g. conversation, consultation), older  
152 patients (aged, elderly, geriatric, older people, older adults) and care settings (e.g. hospitals,  
153 wards, care settings). MeSH, Emtree and CINAHL Headings were utilized as predefined  
154 terms when performing the search in the databases. We also performed a free-text search after  
155 determining alternative terms for the identified key concepts. Each group of keywords was  
156 searched individually, and then combined. A search was conducted separately for each of the  
157 following databases: CINAHL Complete, MEDLINE, Embase, PsycINFO, Web of Science  
158 and Informa. Key article cross-checking was conducted, and the reference lists of the most  
159 cited identified articles were assessed in Scopus to locate additional relevant articles. For the  
160 reference list search of most cited articles, the titles of papers in their reference lists were  
161 examined, and the abstracts of these papers were checked against inclusion and exclusion  
162 criteria. The inclusion criteria for the systematic review were used as the threshold for making  
163 decisions about the possible of papers in the reference lists. Hand searching was undertaken of  
164 reference lists of included articles and of relevant journals.

165 The overall objective was to explore older patients' experiences and perceptions of  
166 communication about managing medications across transitions of care. Therefore, inclusion  
167 criteria comprised empirical studies that were conducted using any research designs  
168 investigating communicating about managing medications across transitions of care. These  
169 studies needed to focus on older people's perceptions or experiences to be included. Older  
170 people comprised individuals aged 65 years and older who were situated in any care settings,  
171 such as acute care hospitals, geriatric rehabilitation, residential aged care as well as home  
172 settings. Exclusion criteria involved the papers not written in English as well as reviews, letters,  
173 commentaries, case reports, editorials and conference abstracts. In this context, communication  
174 involved the exchange of information about medications that occurred between older patients  
175 and other individuals by verbal, non-verbal, electronic and written means. All types of research

176 designs were eligible for inclusion. Comments, letters, editorials conference abstracts, case  
177 reports and studies not in English were excluded.

### 178 *2.3. Search Outcomes*

179  
180 In all, 1352 titles were identified through database searching and the final review  
181 comprised 33 studies. Results of the searches and screening are shown in a PRISMA flow  
182 diagram (**Figure 1**).

### 183 *2.4. Quality appraisal*

184 The Mixed Methods Appraisal Tool (MMAT) was utilised to appraise the  
185 methodological quality of included studies. Three methodological domains were considered:  
186 qualitative, quantitative (randomised, non-randomised, descriptive) and mixed methods  
187 studies. Included papers were assessed at the study level using the MMAT depending on their  
188 research designs, comprising qualitative, randomized, non-randomized, quantitative  
189 descriptive and mixed methods designs. Every study was evaluated according to five different  
190 questions relating to research design quality. Two investigators assessed the included papers  
191 independently according to the MMAT, any discrepancies were discussed, and consensus was  
192 reached. None of the papers were excluded from data synthesis because of the score they  
193 obtained in the MMAT. Information obtained from the MMAT assessment helped the authors  
194 make judgments about studies' methodological quality. Finally, studies were assigned an  
195 overall quality score ranging from (0/5) to (5/5) based on methodological quality criteria<sup>52</sup>. No  
196 studies were excluded because of the quality score. MMAT findings identified that 23 studies  
197 had a score of 5/5, 5 studies had a score of 4/5, one study received score of 3/5, 2 studies had  
198 a score of 2/5, and 2 papers obtained a score of 1/5. Characteristics of all studies are provided  
199 in **Table 1**.

### 200 *2.5. Data Abstraction*

201 One reviewer undertook the database searches. Search terms and the approach used for  
202 the database searches were independently checked by two university librarians. Titles and  
203 abstracts of articles were reviewed independently by two reviewers against the inclusion and  
204 exclusion criteria to identify potentially relevant articles. In order to facilitate article screening,  
205 Rayyan Qatar Computing Research Institute (QCRI) software was utilised. Relevant  
206 systematic reviews were checked to ensure if there were further missed papers related to this  
207 review. After independent abstract review, discrepancies were resolved by consensus. Full  
208 texts of articles were sourced and reviewed for inclusion by the same two independent  
209 reviewers. Included papers were imported into EndNote, version X8.

210            Extraction of data from included studies, such as sample descriptions and relevant  
211 findings, was undertaken by one reviewer using a piloted extraction form. The key data  
212 extracted were examined by a second reviewer to ensure accuracy, and discrepancies were  
213 resolved by negotiation.

**Table 1** Characteristics of included studies

Author, year, country	Study Purpose	Methodology/Data collection	Sample Size	Setting/ Direction of Transfer	Key Findings	Quality Assessment Scores
<b>Allen, et al. (2018)<sup>53</sup>, Australia</b>	Describing patients' cares' experiences of transitions of care across subacute, acute and community settings.	Qualitative Descriptive Study  Data collection: Semi-structured interviews.	13 Patients 7 Carers	Metropolitan public health-care network  Transition from hospital to home	Patients valued the information about their discharge medications by hospital pharmacist. Patients sought for information about medication changes and the reason for those changes. Some patients perceived that hospital doctors decided discharge medications without understanding medications prescribed by other medical doctors. Older patient sought for reassurance, supportive relationship with cares and family members across transitions of care.	5/5
<b>Chiu, et al. (2018)<sup>54</sup>, Hong Kong</b>	Determining whether pharmacist medication review could decrease inappropriate medications and hospital readmissions among older inpatients.	Non-randomised controlled trial  Data Collection: Medication appropriateness assessed by Medication Appropriateness Index. Unscheduled revisit to hospitals.	212 patients  104 control 108 intervention	Geriatric unit of a local hospital.  From the admission to the discharge.	A pharmacist-led medication review reduced the number of inappropriate medications and unintended readmissions. Inappropriate medication use was lower in intervention group (28.0% vs 56.4%; t-test=result not stated, P<0.001). Hospital readmission was lower in the intervention group (13.2%vs 29.1%, t-test=result not stated, P<0.001).	4/5
<b>Gadbois, et al. (2018)<sup>55</sup>, USA</b>	Understanding the experiences of patients who transferred from hospitals to skilled nursing facilities by obtaining insights from patients, facility staff.	Qualitative Study  Data Collection: Interviews with patients, staff and hospital staff.	138 hospital and skilled nursing facility staff, 98 patients or/and their family members.	Hospital, Skilled Nursing Facility Staff  Discharge from hospital to skilled nursing facility	Medication errors were associated with rushed transition from hospital to skilled nursing facility. Inaccurate information transfer between hospital and nursing facility led to patient dissatisfaction with medication reconciliation.	5/5

<b>Barnett, et al. (2017)<sup>56</sup>, UK</b>	Investigating the effect of the pharmacy <i>integrated medicines management service</i> on the rate of preventable medicines-related readmission within 30 days of discharge.	Retrospective Clinical Audit  Data Collection: Retrospective data collection, Collection of 30-Day readmission data using the hospital admissions programme. Review of electronic discharge summaries.	744 patients	District general hospital.  On admission, during hospital stay and post-discharge follow up.	Pharmacy <i>integrated medicines management service</i> team in hospital was effective in reducing preventable medicines-related readmission in older patients.	2/5
<b>Jeffer, et al. (2017)<sup>57</sup>, Canada</b>	Exploring older patients', perceptions with the information exchange during transitioning from acute care hospital to rehabilitation hospital.	An exploratory qualitative study  Data Collection: Semi-structured face to face interviews and observations.	13 patients	2 acute care hospitals and 1 rehabilitation hospital.  Transition from acute care hospital to rehabilitation hospital.	Information exchange between provider and older patients had more paternalistic nature instead of collaborative. Older patients experienced difficulties in absorbing information at transition points due to the pace and a number of the interactions with different health care providers during transitions. In spite of expectations, many patients had little to no information about their transition plan including their medications.	5/5
<b>McAiney, et al. (2017)<sup>58</sup>, Canada</b>	Describing <i>intensive geriatric service workers'</i> role and influence of this coaching service on older patients, caregivers and the broader health system.	A mixed method study  Data Collection: Interviews with patients and caregivers. Chart audits, monitoring achievement of care goals.	49 patients and 25 caregivers. 19 key stakeholders	Hospital  Transition across continuum of care from admission to discharge.	The intensive geriatric service worker facilitated the patient-provider communication and increased older patients' adherence to medication treatment. 66.2% of older patients were <i>extremely</i> satisfied with the intensive geriatric service, while 33.8% was satisfied.	5/5

<b>Bayliss, et al. (2016)<sup>59</sup>, USA</b>	Developing a quality care assessment measure for patient with multiple chronic conditions.	Qualitative study Data collection: Focus groups following interactive webinar based on Delphi Method.	10 patients aged 70–87 with three to six chronic conditions.  17 experts in clinical geriatrics and multiple chronic condition research, health policy.	Research department within an integrated delivery system.	Older patients reported optimized patient-clinician communication and written communication of treatment plan as a measure for high-quality multiple chronic condition care. Older patients endorsed the use of electronic medical record for information transfer between providers as an indicator of high-quality multiple chronic condition care.	5/5
<b>Eyler, et al. (2016)<sup>60</sup>, USA</b>	Evaluating the impact of the pharmacist-led motivational interviewing on post-discharge medication adherence of older patients with pneumonia.	Prospective-randomised control study Data Collection: Controlled survey and follow-up phone interviews.	30 patients; 16 intervention 14 control	Tertiary medical centre.  Discharged from medical centre to long-term care facilities, short term rehabilitation or nursing facilities.	Pharmacist-led motivational interviewing had potential to increase patient antibiotic adherence. Antibiotic adherence rate was 87 % in intervention vs 64% in control group. Older patients were every satisfied with pharmacist interactions about their antibiotic regimens during discharge.	5/5
<b>O'Kula, et al. (2016)<sup>61</sup>, USA</b>	Comparing care transition outcomes between older people with English speaking and non-English speaking background.	A controlled trial Data Collection: Post-discharge interviews with patients	117 patients 63 English Speaking 16 English-Spanish Bilingual	A single tertiary care centre.  Transitions between acute and outpatient care.	Quality of care transitions communication was lower for older non-English speaking, bilingual patients than only English-speaking participants. Hospital readmission within 30 days of discharge was lower in English-speaking older patients (19% vs 13.6%, chi-square test =result not stated, P=0.56).	2/5
<b>Rustad, et al. (2016)<sup>62</sup>, Sweden</b>	Exploring experiences of older patients of	A descriptive, explorative qualitative design.	14 patients	Local Hospital  Home-hospital-home.	Older patients found care transition as complex and challenging process.	5/5

	care transition from hospital to municipal health care services.	Data Collection: Semi-structured interviews.			Older patients expressed their confusion about medication information transferred between hospital and municipal health care settings.	
<b>Wong, et al. (2016)<sup>63</sup>, Canada</b>	Examining older patients' experience of hospital discharge from their perspectives.	A qualitative study. Data Collection: Interviews with patients and focus group.	8 Patients	A Central Teaching Clinic  Transfer from hospital to home.	Patients expressed their uncertainty of discharge plans including providers' explanations about medications before discharge.	5/5
<b>Bagge, et al. (2014)<sup>64</sup>, New Zealand</b>	Exploring the way in which older patients, aged 75 and over, manage their medication changes at home following hospital discharge.	Qualitative Study  Data collection: Semi-structured interviews.	40 patients	Hospital  Discharge from the hospital to home.	Half of the older patients were unaware of the details and reasons for medication changes. Older patients were not willing to ask questions about their medications. Majority of older patients trusted the expertise of doctors; therefore, they accepted their decisions about medications without questioning them. Some older patients were extremely confused about their medications.	5/5
<b>Hvidt, et al. (2014)<sup>65</sup>, Denmark</b>	Investigating the ability of older patients' to recall discharge instructions.	Quantitative Descriptive  Data collection: A cross-sectional questionnaire study with patients discharged from a university hospital.	102 patients: 40 patients in older group (Age≥65),  62 patients in younger group (Age<65).	Quick Diagnostic Unit in a university hospital.  Discharge from hospital to home.	Recall of correct medication information was higher in the younger patients compared with older patients (Odds ratio 4.20, 95% CI 1.50-11.90, P=0.016). Older patients were less aware of their comprehensive deficits compared to younger patients (Odds ratio 0.94, 95% CI 0.90-0.98. P=0.001).	5/5
<b>Lindquist, et al. (2014)<sup>66</sup>, USA</b>	Determining the ways of older patients' dosing their regular medications in the home.	Qualitative study  Data Collection: Interviews with patients. Recording of patients' home medication	200 seniors	Hospital.  Patients recruited at hospital, interviewed at their homes.	Unnecessary complexity of medication regimens was prominent problem among older people. Misunderstanding medication instructions was one reasons behind medication regimen over-complexity.  Older people changed their lifestyle to accommodate the medication changes.	5/5

		regimen details (name, dose and frequency).				
<b>Blennerhassett, et al. (2011)<sup>67</sup>, Australia</b>	Examining management of medications by older people with non-English speaking background after discharge.	A qualitative study  Data Collection: Interviews with patients. Focus group discussions with hospital clinicians, pharmacist and community nurses.	18 patients 12 ward pharmacists 8 community nurses	Hospital  Transfer from hospital to the community	Patients lacked knowledge about medication and changes. Interpreter services were not used routinely. For the older patients with non-English speaking background, there was lack of available translated educational materials. Medication changes and different brand names were contributors to medication mismanagement in older patients.	5/5
<b>Knight, et al. (2011)<sup>68</sup>, UK</b>	Explore experience of older peoples and their careers at discharge in regard to managing medication and organization.	Qualitative Study  Data Collection: Semi-structured interviews. Review of patient medication diaries	7 patients and 12 carers.	Hospital  Discharge home form hospitals.	Patients' satisfaction with the information provided about medication was varied. Inadequate explanation about medication at discharge. The communication between hospital and GPs and community pharmacists was poor.	5/5
<b>Arora, et al. (2010)<sup>69</sup>, USA</b>	Reporting older patients' post-discharge problems and identifying patients' perceptions of communication between their primary care physicians and hospital physicians.	Prospective mixed methods study  Data collection: Interviews with older patients and surveys with primary care physicians.	40 Patients	Single academic medical centre  From admission to discharge (nursing home, rehabilitation or homes)	Patients, whose primary physicians were not aware of hospitalizations, were more likely to report post-discharge issues including medication problems (67% vs. 33%, Fisher's exact test= result not stated, P<0.05). Older patients reported their confusion due to post-discharge medication problems. Primary care physicians' awareness of their patients' discharge and hospitalizations was important to follow up appointments and medications. Patients' perception of good communication between primary care physicians and hospital physicians was far from the reality.	4/5

<b>Mesteig, et al. (2010)<sup>70</sup>, Norway</b>	Describing unwanted adverse events by the ambulatory team among older patients discharged from a geriatric evaluation and management unit (GEMU).	A prospective observational study  Data Collection: Collection of baseline characteristics from hospital record, observations.	118 patients	15-bed geriatric evaluation and management unit.  Discharged from the GEMU to their homes.	Approximately 60% of frail elderly patients experienced unwanted incidents during transition from hospital to home and following 4 weeks. Majority of unwanted effects were associated with information exchange, medication regimens and disagreements between services.	5/5
<b>Dedhia, et al. (2009)<sup>71</sup>, USA</b>	Testing the feasibility and effectiveness of a discharge planning and quality improvement intervention on care transitions of older patients.	Quasi-experimental pre–post study design.  Data collection: The data were collected via validated data collection instruments during hospitalization, within 1 week of discharge, and approximately 30 days after discharge.	238 patients for pre-intervention stage, 185 patients for the post-intervention period.	Three distinct hospital types including an academic, community-based teaching hospital, not-for-profit community hospital.  Discharge from general medicine ward to home.	Quality intervention including physician-pharmacist collaborative medication reconciliation, scheduled discharge meeting, multidisciplinary team collaboration, and providing patient with simple medication instructions upon discharge admission resulted in successful transition in older patients (87% vs 78%; OR=2.33, 95% CI=1.34–4.05) and reduced the readmission rates. (14% vs 22%; OR=0.55, 95% CI= 0.32–0.94).	4/5
<b>Del Sindaco, et al. (2007)<sup>72</sup>, Italy</b>	Determining influence of a disease management program on older patients. Program included discharge planning, therapy	Randomised Controlled Trial  Data Collection: Review of discharge & visit summary. Medical record review. Periodical phone calls. 2 year follow up patients' outcomes.	173 patients, 86 Intervention and 87 usual care.	2 hospital heart failure clinics.  Hybrid Intervention: combining hospital clinic-based and home-based care.	Length of hospital stay was reduced (9.5 vs 12.5 days, t-test =result not stated, P=0.0025). Mortality for heart failure (24.4% versus 28.7%, relative risk reduction 0.15, 95% CI -0.39-0.48, P>0.05). Significant improvements seen in functional status, quality of life and b-blocker prescription rate. Readmission and death risks were reduced (36% vs 26.2).	5/5

optimisation,  
improved  
communication.

<b>Flacker, et al. (2007)<sup>73</sup>, USA</b>	Examining older patients' recall of communication of discharge instructions occurred between themselves and hospital staff before discharge.	Quantitative descriptive study  Data collection: A cross-sectional telephone survey of older inpatients.	269 patients aged 70 years and older and their families were interviewed.	953-bed teaching hospital  Transfer is from hospital to home.	Older patients who remembered receiving medication instructions were more likely to adhere to taking their medications. Discharge instructions by hospital staff enabled patients to take more active role in their self-care after discharge. 86.4% of older patients who recalled receiving discharge medications reported they took them correctly, while 9.1% of these patients stated that they did not take their medications correctly.	5/5
<b>Spinewine, et al. (2007)<sup>74</sup>, Belgium</b>	Evaluating the influence of pharmaceutical care on appropriateness of prescribing.	Randomised controlled trial.  Data Collection: Medical record review and an interview with each patient or caregiver to identify demographic characteristics, clinical status, and medications.	203 patients	Acute Geriatric Evaluation and Management <sup>20</sup> unit at tertiary hospital.  Admission to acute GEM unit, hospital stay, discharge.	Pharmaceutical care reduced misuse, overuse, and unnecessary medication use in older patient. Providing older patients with pharmaceutical care via written and oral therapeutic information at acute GEM unit improved appropriate medication use in older patients during hospital stay and after discharge.	5/5
<b>Lopez Cabezas, et al. (2006)<sup>75</sup>, Italy</b>	Examining the efficacy of educational intervention conducted by a pharmacist in patients with heart failure.	A randomised, prospective, open clinical trial  Data Collection: Collection of patients' sociodemographic	134 patients, 70 (52.2%) intervention, 64 (47.8%) control	Local hospital.  Study conducted during hospital stays, at point of discharge and during patients' follow up hospital visits.	The patients received active education program had less re-admissions than the patients in the control group (9 vs 26 readmissions after 2 months intervention (Cox's proportional hazard ratio HR 0.56, 95% CI 0.32-0.97, P<0.05).	5/5

				and clinical variables.		
<b>Shen, et al. (2006)<sup>76</sup>, Australia</b>	Assessing the impact of a nurse-initiated medication education program for older patients in terms of increased medication knowledge and adherence following discharge.	Non-randomised Control Study  Data Collection: Interviews and satisfaction survey.	86 patients	Teaching hospital.  Discharge from hospital to home.	Nursing-staff-conducted medication education program improved older patients' medication knowledge. 78% of patients expressed usefulness of education program. Before education program, medication knowledge of older patients indicated that they knew 50% of brand names, dosage and times, 55% of purpose of medications, and 15% of major side effects. Relevant figures at follow-up home visits significantly increased to 90%, 85%, and 25%, respectively ( <i>P</i> .05).	4/5
<b>Enguidanos, et al. (2005)<sup>77</sup>, USA</b>	Identifying medication documentation issues at the point of discharge of older patients.	Quantitative Descriptive study design.  Data collection: Surveys with patients and physicians. Review of medication charts.	A random sample of 104 patients, 50 primary care and outpatient physicians	A large managed care medical centre  At the discharge point of the hospital	89% of participated patients reported high levels of satisfaction with communication about discharge medications, however there was a discrepancy between discharge orders and older patients' medication reports in terms of the numbers of medications. Of 104 chart reviews, 56% of medical charts had missing entries, mainly in the indication section and 23% had medical terminology.	3/5
<b>Coleman, et al. (2004)<sup>78</sup>, USA</b>	Testing whether a patient-centred intervention designed for promotion cross-site communication encouraged older patients to play a more active role in	Quasi-experimental design  Data collection: The use of data obtained from the participating health system's administrative data files.	158 Intervention patients vs. 1,235 Control patients form health delivery system's administrative records.	A large integrated delivery system  Discharge from acute care facility to home.	Hospitalized patients who received interventions were almost half as likely to return to the hospital. 75% of older patients who received interventions of medication-self management reported confidence in managing their own medications. 87% of intervention patients understood the reason why they took each medication and 94% of them reported that they understood the route of each medication.	4/5

their care and transition.

<b>Sexton, et al. (1999)<sup>79</sup>, UK</b>	Investigating the accuracy of documentation of medication-information on discharge and the communication methods used.	Qualitative Study  Data Collection: Medical record review. Interview with patients. Surveys with GPs.	56 patients	General hospital.  Discharges home from the acute geriatric unit.	Historic poor standards of seamless pharmaceutical care and record keeping by health care professionals. Medication inadequacies were one of the biggest issues for older patients. 57% of patients had medication related problems after discharge.	5/5
<b>Clare, et al. (1998)<sup>80</sup>, Australia</b>	Identifying satisfaction with discharge planning identified by older patients, caregivers, health professionals and identifying older patients' and carers' knowledge of medications and recovery needs.	A mixed method study  Data Collection: Interviews and questionnaire	67 patients	Hospital  Transfer from hospital to nursing service	71% of elderly expressed their satisfaction with their discharge as they felt involved in decision-making process in discharge plan. 91% of older patients reported daily medication intake. Of those patients, only 52% patients received written information.	5/5
<b>Leduc, et al. (1998)<sup>81</sup>, Canada</b>	Examining the extent to which older patients discharged to the community from an acute-care hospital used the healthcare	Quantitative Descriptive Analysis  Data Collection: Interviews, Chart reviews	212 patients	A general and teaching hospital  Discharge from acute geriatric ward to community	Communication and coordination between community and hospital increased older patient adherence to prescribed services two times.	5/5

services prescribed for them at discharge.

<b>Rich, et al. (1996)<sup>82</sup>, USA</b>	Prospectively assessing medication compliance of older patients with congestive heart failure after intervention of patient education.	A randomised controlled study  Data Collection: Collection of the number of medications at the discharge.	156 patients; 80 intervention, 76 control	Tertiary hospital  At the time of discharge and post-discharge period	Compliance rates in intervention was remarkably high, achieved by 85% in intervention vs 69.7% in the control group. Readmissions per patient were decreased by 32%, the length of hospital stay was reduced by 31%.	5/5
<b>Burns, et al. (1992)<sup>83</sup>, UK</b>	Evaluating the effects of communication between hospital and general practitioners about medication therapy of older patients.	Prospective Cross-Sectional Study Data Collection: Home visits; post-discharge drug therapy was assessed the ones that were prescribed during discharge.	56 Patient	Hospital  Discharged form Geriatric Unit to home or nursing home	27% of patients had new medications issued after discharge. There was lack of continuity of medication in older patients.	1/5
<b>Cochrane, et al. (1992)<sup>84</sup>, UK</b>	To ascertain changes in drug treatment of elderly patients after discharge from hospital and to determine areas of communication which may	Quantitative study  Data collection: Structured verbal questionnaire.	50 patients discharged from five geriatric wards.	A district health authority  Discharge from geriatric ward to home.	There was a need for close communication and collaboration between hospital and community care professionals to prevent medication mistakes in older patients. Older patients were not communicated with about their medication changes during their hospital stay. The lack of continuity was identified in older patients' medications between the ones provided on discharge and the ones taken by patients during post-discharge period.	5/5

need improvement.

**German, et al. (1982)<sup>85</sup>, USA**

Investigating whether communicating with older patients about drug regimen at discharge leads to increased patient knowledge at the post-discharge period and comparing the improvement of medication knowledge by age groups.

Quantitative descriptive study  
Data collection: Structured phone survey with discharged patients. Review of regimens from medical records.

545 patients

Hospital  
Discharge from hospital to home.

Adherence to prescribed medications was found higher in older (age $\geq$ 65) than the younger patients (Age $<$ 65).

1/5

134

135

## 2.6. *Synthesis*

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

Two investigators were involved with synthesizing the themes and subthemes from the papers. Regular discussions were conducted with the other investigators, which enabled agreement on the nature and content of themes and subthemes. A six-step thematic analysis approach was used<sup>86</sup>. The first step involved familiarisation of qualitative data, where extracted data from the results sections of studies were read and reread to search for meanings and patterns. Initial ideas were noted to develop comprehensive understandings of the content. The second step related to generation of initial codes. Preliminary codes were developed, which identified relevant features of the data across the whole data set. The third step involved searching for themes, where different codes were sorted into potential themes. All data relevant to each potential theme were gathered. The fourth step included reviewing themes to determine which ones were to be combined, separated, refined or discarded. A thematic map was created at this step. In the fifth step, themes and subthemes were defined and named. The sixth step involved generation of the findings, where concise names and definitions for each theme were produced. Key findings of included studies were incorporated into identified themes, and examples from studies were used to illustrate the themes generated.

151

152

153

154

155

156

157

158

Findings from quantitative studies were reworded as textual information, which was read and reread to determine how it could be incorporated into themes and subthemes obtained from qualitative studies. This textual information was aggregated with qualitative findings using descriptive synthesis. Mixed methods studies were analysed using the approaches already explained for qualitative and quantitative data respectively. Findings from quantitative and mixed method studies were analysed following the six-step process. MMAT results of studies were checked simultaneously while conducting the six-step thematic analysis to identify any methodological deficiencies.

159

## **3. Results**

160

161

162

163

164

165

166

167

A total of 33 studies were included in this review. The earliest identified study was published in 1979. There was only one study published between 1980 and 1990. Six studies were published from 1990 to 2000. While 10 studies were published out between 2000 and 2010, 16 studies were published from 2010 to 2019. The total sample size of older patients included in studies was 4525 patients. For qualitative studies, sample sizes ranged from 7 to 200 patients while for quantitative studies, sample sizes ranged from 30 to 744 patients. For mixed methods studies, sample sizes ranged from 47 to 60 patients. Twenty-eight studies were

168 conducted in acute care hospital settings, 5 were undertaken at subacute settings, and only one  
169 study was conducted at residential aged care facility. Most studies were conducted in either the  
170 United States (10) or the United Kingdom (5). There were 12 qualitative studies, comprising 8  
171 semi-structured interviews studies, one narrative interviewing study, 2 observational studies  
172 and three focus group studies. Most interview studies were conducted with older patients at  
173 acute hospital settings. Of these studies, only 2 studies adopted the concept of data triangulation  
174 combining interviews with focus group discussions <sup>63</sup> or observations <sup>57</sup>. Seventeen studies  
175 were quantitative in design, including 4 survey studies, 2 retrospective audit reviews, 5  
176 randomised controlled trials, one structured verbal questionnaire study, 2 quasi-experimental  
177 studies, and 4 non-randomised controlled studies. Controlled trials were conducted in different  
178 countries including USA, Belgium, Australia, Italy and Hong Kong and most of them were  
179 undertaken at acute care hospital settings <sup>60, 61, 74-76, 82</sup>. There were also 4 mixed methods studies.  
180 Of these, 2 studies used a combination of surveys and interviews. One study combined chart  
181 audits and interviews, whereas the other study integrated observational data with quantitative  
182 findings.

183         There were 4 major themes identified: links between communication and medication  
184 discrepancies; engagement with older patients to enable self-care; older patients' experiences  
185 with health professionals about their medication regimen; and strategies for communication  
186 about medications with older patients. Themes and subthemes with examples of representative  
187 quotes by older patients are shown in **Table 2**. A thematic map comprising the themes and  
188 subthemes is shown in **Table 3**.

189         Medication discrepancies that resulted from communication breakdowns between  
190 hospital and community settings were an ongoing problem that were addressed by older  
191 patients receiving simple, written and verbal medication information before discharge.  
192 Patients' attitudes towards their involvement in self-medication management and their ability  
193 to make decisions about their medications were identified mostly in interview studies  
194 undertaken at acute hospital settings. Older patients' values about patient-provider  
195 relationships and trust in providers' knowledge influenced the degree of their involvement.  
196 Survey and interview studies reported that patient satisfaction with the amount and quality of  
197 information received before discharge was closely associated with patients' post-discharge  
198 medication adherence. Only two studies conducted in Australia (an interview study) and USA  
199 (an intervention study) addressed the relationship between quality of communication and  
200 language barriers of patients <sup>61, 67</sup>. The interview study conducted with older patients from three  
201 different non-English language backgrounds revealed detailed knowledge about medication

202 mismanagement experienced after discharge<sup>67</sup>. Intervention studies conducted with different  
203 professional groups such as nurses, physicians and pharmacists showed that medication  
204 education provided to older patient at hospital settings improved medication knowledge and  
205 medication management after discharge and also reduced medication-related readmissions<sup>54,</sup>  
206 <sup>71, 72, 76</sup>.

**Table 2** Themes, Subthemes & Representative Quotes

THEMES AND SUBTHEMES	REPRESENTATIVE QUOTE EXAMPLES BY PATIENTS
<p><b>1. MEDICATION DISCREPANCIES ARE LINKED TO COMMUNICATION</b></p> <ul style="list-style-type: none"> <li>• MEDICATION COMMUNICATION BETWEEN HOSPITALS AND THE COMMUNITY</li> <li>• TAILORED COMMUNICATION TO FACILITATE OLDER PATIENTS' UNDERSTANDING</li> <li>• ACCURACY OF MEDICATION DOCUMENTATION</li> </ul>	<p><i>"When I usually have lab work done I have prescription signed.. maybe they changed the way of doing it. Now the pharmacy called me. But I'm supposed to have a note or something"</i> Arora (2010, p. 388)</p> <p><i>"I wouldn't have taken it in any way. You really do only sort of half listen because it seems, you know, it seems that you don't know the language."</i> Bagge (2014, p.794)</p> <p><i>"Well they say very little, they just say you're on this and this and this, do you understand and they're keen to get off"</i> Knight (2011, p.286)</p> <p><i>"I had problems getting my medications because they tell me that the medication was so high, but anyway, I didn't get some of my medications."</i> Arora (2010, p. 388)</p> <p><i>"Major category was those who had problems getting medication or therapy. For example, 'one of (the patients) treatment meds...was very hard to find and it delayed us giving her her meds."</i> Arora (2010, p. 387)</p> <p><i>"... well they do give you a thing from the hospital to give to your doctor just saying you're home and then on that, with that should be all the drugs. So then you've got to make sure that the surgery puts the drugs onto the record...it's even more daunting and then I mean you have to juggle with the chemist and the repeat prescriptions and goodness knows what"</i> Knight (2011, p. 286)</p> <p><i>"I needed a copy of his discharge papers from the hospital for insurance purposes..They didn't give me a discharge paper."</i> Arora (2010 p. 388)</p> <p><i>"I think the take-home message is get [discharge instructions] written down. Because I didn't know all this; I'm guessing he took out the information and read it. So anything that's written is super useful."</i> Wong (2016, p.100)</p>
<p><b>2. ENABLING SELF-CARE THROUGH OLDER PATIENT ENGAGEMENT</b></p> <ul style="list-style-type: none"> <li>• PATIENT SELF-MANAGEMENT OF MEDICATIONS</li> <li>• INVOLVEMENT WITH OLDER PATIENTS IN DECISION MAKING</li> </ul>	<p><i>"You don't have any decision in your own healthcare at all. I think that's terrible!"</i> Arora (2010 p. 389)</p> <p><i>"Patient said she did not really have an opportunity to talk to the hospital staff about her medicine changes but she was not concerned by that because she would not have known what to discuss with them."</i> Bagge (2014, p. 794)</p> <p><i>"I've been receiving a new kind of tablet since I was in hospital. I don't know if it is because of directions from the hospital, I just take them and keep quiet."</i> Rustad (2016,p.774)</p> <p><i>"I think that because I would ask if I had to, if I wasn't happy, I would take it upon myself to ask. I think you have to be prepared to do that. I mean I would, but not everybody would. I mean I work with the doctors"</i> Knight (2011, p. 286)</p>

**3. OLDER PATIENTS' EXPERIENCES WITH HEALTH PROFESSIONALS ABOUT THEIR MEDICATION REGIMEN**

- OLDER PATIENTS' SATISFACTION WITH MEDICATION RELATED SERVICES
- INFORMATION EXCHANGE ABOUT MEDICATIONS
- EFFECTS OF PATIENT DEMOGRAPHIC CHARACTERISTICS ON PATIENT EXPERIENCES

*"I think to myself 'they know what they're doing,' and just leave it to them, that's what I'm here for."* Bagge (2014, p. 796).

*"Because he is a specialist advising, I'm taking their advice, I'm not going to argue with them about it."* Bagge (2014, p. 795).

*"I wouldn't even [know] how to say 'why am I taking these pills?'; because I might be disregarding their, you know, position, or something. No, I just do as I'm told."* Bagge (2014, p. 795).

*"They only answered the questions I put to them.", "a change in my symptoms were not adequately explained"* Clare (1998, p.11)

*"You don't know what the hell to do, do you? 'Sadly, this patient added, 'I was quietly confident of all my medication before, but since coming out of hospital I'm totally lost'"* Knight (2011, p. 288)

*"I've carried on with the insulin dose that my specialist prescribed, not what the hospital prescribed. I didn't see the specialist while I was in hospital as he was away."* Blennerhassett (2011, p.34)

*"One patient took three different opioids and crushed morphine sulfate slow-release tablets because, I thought I could see the tablet whole in my stool"* Blennerhassett (2011, p.34).

*"She's really helped me to make sure I take my medications and vitamins and that I eat the amount that I'm supposed to. That has really helped me a lot. I've got more energy and feel much better than I did last winter."* McAiney (2017, p.157)

*"If they'd have given me a ton of them [medicines], I would still have taken them because they know better than I do"* Bagge (2014, p. 794)

*"I'm sure [the pharmacist] explained [the medications] to me, but... I remember nothing..."* Wong (2016, p.100)

**4. STRATEGIES IN COMMUNICATING ABOUT MEDICATIONS WITH OLDER PATIENTS**

- INDIVIDUALISED DISCHARGE SUMMARIES
- PHARMACISTS' INTERVENTIONS AND RECOMMENDATIONS ON MEDICATION APPROPRIATENESS
- IMPROVING MEDICATION KNOWLEDGE IN OLDER PATIENTS THROUGH MEDICATION EDUCATION

*“When we saw our GP yesterday, she described in great detail exactly the significance and the severity of a bug in the blood if it was coming from the bladder. So, we got more out of our GP in 5 minutes than we got out of the doctors in the hospital in 8 days” Allen (2018, p.523)*

*“All participants valued medication education from the ward and community pharmacists including education regarding dose administration containers, explanation of discharge medication regimes and consideration of unwanted side-effects” Allen (2018, p.523)*

202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235

**Theme 1. Medication discrepancies are linked to communication**

Twenty studies addressed the theme of medication discrepancies being linked to communication<sup>55-57, 59, 61-64, 67-70, 77-81, 83-85</sup>. There were 3 subthemes relating to this theme: communicating about medication between hospital and the community, tailored communication to facilitate older patients’ understanding, and accuracy of medication documentation.

Timely and appropriate communication about medications between the hospital and the community was a key factor in preventing medication discrepancies. Communication breakdowns occurred at the time of discharge from hospital to the community or in the early post-discharge period (from 5 to 30 days after discharge)<sup>55, 56, 63, 67, 69-71, 79, 83, 84, 87</sup>. Older patients reported having difficulties in understanding medication changes after discharge<sup>63,64, 68,69</sup>. In a qualitative study of changed medication regimens, most older patients had continued taking discontinued medications after returning home due to lack of communication at the time of discharge<sup>84</sup>.

Patients described experiencing medication discrepancies including wrong frequency, incorrect time, dosage or missed prescription regime following discharge from hospital because of poor communication and lack of clear and adequate information about their medications<sup>68, 70</sup>. In some quantitative studies, interventions that focused on communication with patients, primary care physicians (PCPs) and community pharmacists after patients’ discharge improved the discharge experience and enabled patients to manage their medications properly at home, leading to reduced medication-related hospitalisation rates<sup>56, 78</sup>.

Older patients expected that communication should occur between primary care physicians and inpatient physicians<sup>69</sup>. Likewise, older patients who frequently visited different PCPs reported that the PCPs lacked knowledge about their discharge medication changes. PCPs sometimes continued hospital-ceased medications or discontinued newly-prescribed hospital medications<sup>67</sup>. Older patients stated that they expected effective and prompt communication between health professionals located in primary and secondary care settings comprising hospital providers, their PCPs and community pharmacists<sup>68</sup>. They also expected that hospital pharmacists would provide them with a concise and clear list of prescribed medications and explanations about their purpose<sup>55, 68</sup>.

Patients’ understanding of medication information was enhanced through tailored communication that considered older patients’ physical, cognitive, and emotional states and their preferences. These preferences included frequent conversations with health professionals

236 and clearly written instructions of their current treatment plan and provision of discharge  
237 summaries. In a qualitative study, older patients with multiple chronic conditions reported  
238 wanting timely and tailored communication <sup>59</sup>. Patients found it useful to receive written  
239 instructions about medication before discharge <sup>80</sup>. Older patients believed their knowledge  
240 could be improved by health professionals providing them with plain-language discharge  
241 summaries. They also reported the need for health professionals' awareness of their mental  
242 state when providing information about new medications as patients may not remember  
243 discharge explanations <sup>63</sup>. When older patients experienced close and ongoing communication  
244 with health professionals, they were more likely to correctly identify the purpose of their  
245 medications and to adhere to their medication regimens <sup>85</sup>.

246 Older patients reported lack of accuracy, completeness and clarity of medication  
247 documentation. This resulted in unwanted medication incidents, confusion about medication  
248 information, and concerns about medication changes, particularly when they were discharged  
249 from hospital to the community. Mesteig, et al. (2010)<sup>70</sup> reported that almost 60% of frail, older  
250 patients experienced unwanted medication incidents during their transition to home and within  
251 the first month after discharge. While 32% of the most common, unwanted incidents were  
252 caused by mistakes made during medication administration, 25% of incidents related to poor  
253 information exchange between a geriatric evaluation and management unit and primary health  
254 care staff. Older patients found the care transition from hospital to a community care setting to  
255 be a challenging and complex experience, since they were unsure or unaware of what  
256 medication information was sent by the hospital, and what had been received by the community  
257 care setting <sup>62</sup>. In another study, patients stated that they were not satisfied with the information  
258 they received at discharge, with only 40% reporting that the information was easy to  
259 comprehend <sup>77</sup>. Discharge summaries were hard to understand because of extensive use of  
260 medical abbreviations and jargon. Patient concern about the lack of clarity about changes made  
261 to their medications increased their reliance on family members <sup>64</sup>.

## 262 **Theme 2. Enabling self-care through older patient engagement**

263 Eleven studies identified the theme of enabling self-care through older patient  
264 engagement <sup>53, 57, 58, 62, 64, 67-69, 73, 78, 80</sup>. There were 2 subthemes for this theme: patient self-  
265 management of medications, and involvement with older patients in decision making.

266 Older patients viewed caring relationships with health professionals, and appropriate  
267 communication of medication information as key components of self-care management.  
268 Having information about the reasons why and how medications were to be taken was  
269 important for older patients' understanding and self-care after discharge <sup>73, 78</sup>. Older patients

270 valued caring relationships with health professionals in their care transitions because such  
271 relationships supported their self-confidence in being independent at home. In contrast,  
272 negative experiences resulted from health professionals' failure to listen to patients' concerns  
273 at discharge and from health professionals making decisions about discharge medications  
274 without understanding what medications were prescribed by doctors outside the hospital <sup>53</sup>.

275 Some older patients reported no concerns with resuming their previous medication-  
276 taking routines after discharge, whereas others expressed concerns about being able to adopt  
277 new routines after medication changes <sup>64, 67</sup>. Patients identified strategies that helped them to  
278 obtain more information themselves at discharge, including taking responsibility to  
279 communicate with health professionals about preparing self-generated medication lists <sup>62, 68</sup>.  
280 McAiney, et al. (2017)<sup>58</sup> described a new health provider role – intensive geriatric service  
281 workers – who were community support providers addressing communication gaps and  
282 promoting effective self-management for older patients discharged to the community from  
283 acute care. Patients who received support from these workers demonstrated improved self-  
284 management in adhering to treatment recommendations.

285 There were conflicting findings in regard to older patients' participation in decision  
286 making with medication-related communication. Patients were sometimes reluctant to ask  
287 questions about their medications during their hospital stay and were concerned about not  
288 knowing what to ask in relation to their medication changes <sup>64</sup>. Similarly, some patients did  
289 not wish to be engaged in discussions with health professionals as they believed that the health  
290 care team members knew what they were doing <sup>57</sup>. In contrast, some patients reported that  
291 interventions including home visits from transition coaches, follow-up visits by physicians and  
292 follow-up phone-calls enabled them to take a more active role in their own care across settings,  
293 which increased their understanding of medication regimens and enhanced their confidence in  
294 self-management. They reported that active participation increased their understanding of how  
295 to take their medications and recognise side effects <sup>78</sup>. In regard to self-care learning, some  
296 patients were more engaged in asking questions of nurses when they gave insulin injections,  
297 whereas others preferred consulting with their PCPs after discharge to learn the reasons for  
298 insulin changes, and monitoring and interpreting blood glucose levels <sup>53</sup>.

### 299 **Theme 3. Older patients' experiences with health professionals about their** 300 **medication regimen**

301 Eighteen studies addressed the theme of older patients' experiences in communicating  
302 with health professionals about their medication regimen <sup>53, 55, 57-59, 61, 63, 64, 66-69, 75-77, 80, 81, 85</sup>.  
303 There were 3 subthemes for this theme: older patients' satisfaction with medication-related

304 services, information exchange about medications, and the effects of patient demographic  
305 characteristics on patients' experiences of communication.

306 Older patients' satisfaction with medication-related services influenced their adherence  
307 to their medication regimen. Patients who received information about their medication therapy  
308 through active telephone follow-up and home visits after discharge reported higher satisfaction  
309 with the care received, and showed greater adherence with prescribed medications compared  
310 to patients who did not receive information on medications and follow-up phone calls<sup>75</sup>. Older  
311 patients were highly satisfied with the existence of a service addressing challenges during their  
312 movements across transitions of care since it promoted self-management, independence and  
313 medication adherence<sup>58</sup>.

314 Effective information exchange about medication regimens was viewed as an essential  
315 requirement by older patients. Older patients felt disappointed if they received inadequate  
316 explanation about discharge medications, particularly if their medications were changed<sup>55</sup>. In  
317 addition, not knowing the purpose of a medication and not receiving a written guide about  
318 discharge medications made patients feel vulnerable and helpless<sup>68</sup>. A survey of 67 older  
319 patients revealed they valued receiving instructions and discussing their medications with their  
320 doctors; however, only 52% received written information and 46% said no discussion occurred  
321<sup>80</sup>. Similarly, in an interview study conducted with 40 older patients, 29 patients stated health  
322 professionals did not talk to them about medication changes before discharge. Similarly, a  
323 study involving interviews and observations demonstrated older patients' dissatisfaction with  
324 receiving "*tidbits of information*" to "*no information*" or "*leaving without a follow-up plan*"  
325 when they were being transferred<sup>57</sup>. Some patients attributed this situation to the busyness of  
326 physicians<sup>64</sup> and busyness of health professionals of various disciplines during the patients'  
327 discharge period<sup>80</sup>.

328 Patients' demographic characteristics were associated with their communication  
329 experiences about their medication regimens<sup>57, 65, 66</sup>. A cross-sectional questionnaire study of  
330 hospitalised patients (N=102) showed that compared with younger patients (<65 years old),  
331 older patients reported more difficulties in remembering correct medication instructions (78%  
332 versus 54.3%, respectively) (P=0.02), which led to the need for different communication  
333 strategies with older patients before discharge<sup>65</sup>. An interview study and a controlled trial  
334 reported the effects of language barriers on patients' medication experiences<sup>61, 67</sup>. Patients from  
335 non-English speaking backgrounds expressed more difficulties in taking new medications after  
336 being discharged. Some patients were confused by brand names. Similarly, older patients who

337 had language barriers reported poorer communication in comparison with English-speaking  
338 patients <sup>61</sup>. Along with language problems, some patients said they needed opportunities to ask  
339 questions of health professionals to clarify concerns caused by hearing loss or slurring of  
340 speech <sup>80</sup>.

341 **Theme 4. Communication strategies to enable older patients' medication**  
342 **knowledge**

343 Thirteen studies addressed the theme of communication strategies to enable older  
344 patients' medication knowledge <sup>53, 54, 56, 60, 63, 67, 71, 72, 74, 76, 80, 82, 85</sup>. There were three subthemes  
345 for this theme: individualised discharge summaries, pharmacists' interventions and  
346 improvements in older patients' medication knowledge through medication education.

347 Individualised discharge summaries involved medication instructions in simple language  
348 and clear information about follow-up care for older patients. Older patients emphasised the  
349 need to be given medication instructions written in plain language <sup>63, 71</sup>. They believed having  
350 clearly written plain language discharge summaries enabled better management of their  
351 condition <sup>63</sup>. They also valued information from the ward pharmacist about the purpose and the  
352 nature of their discharge medication <sup>53</sup>. Patients stated that they valued clarification and  
353 information from PCPs about their discharge summaries and appreciated having their questions  
354 answered <sup>53</sup>. In one discharge planning intervention, older patients were given written  
355 discharge instructions including medication information with larger-than-normal font type and  
356 using simple language. Information was presented with straightforward explanations about  
357 how, when and why to take medications along with contact information of hospital health  
358 professionals in the event that patients had additional inquiries after discharge. Implementation  
359 of the intervention contributed to the reduction of older patients' readmission rates (14% in the  
360 intervention group vs 22% in the control group, OR=0.55, 95%, CI=0.32–0.94) and improved  
361 quality of transition from hospital to home, with a higher proportion of patients feeling better  
362 as a result of hospitalisation and a greater number of patients having successful transitions to  
363 home <sup>71</sup>.

364 Pharmacist interventions improved outcomes for older patients. Older patients believed  
365 that recommendations made by pharmacists on admission and at discharge were useful in  
366 decreasing unintended medication discrepancies caused by improper dosages or omissions of  
367 medications, and also reduced inappropriate prescriptions <sup>54</sup>. In an interview study, older  
368 patients identified useful strategies for improving outcomes, which included providing verbal  
369 and written information for medications, liaising with the community pharmacists for dose  
370 administration aids, and checking understanding about brand and generic name differences <sup>67</sup>.

371 Additionally, older patients from non-English speaking backgrounds suggested that  
372 community pharmacists who spoke their language were helpful in enabling them to better  
373 manage their medications. In an intervention study, an Integrated Medicine Management  
374 Service program was introduced as a solution to reduce medication-related readmissions  
375 through direct patient consultations, and follow-up discussions with patients' community  
376 pharmacists and PCPs <sup>56</sup>.

377 Medication education by health professionals was related to improvements in older  
378 patients' medication knowledge. Older patients valued medication education from both  
379 community and hospital pharmacists and their PCPs, particularly education about dose  
380 administration aids, discharge medication regimens and unwanted side effects. Patients with  
381 diabetes highlighted the importance of education and recommendations from their PCPs about  
382 how to monitor and interpret blood glucose levels after discharge <sup>53</sup>. A prospective cohort study  
383 showed that 98% of older patients were satisfied with a pharmacist-led program, which was  
384 associated with a significant reduction in inappropriate medication use and medication-related  
385 problems via medication reviews, reconciliation and counselling on admission and discharge  
386 <sup>54</sup>. An educational program consisting of hospital and primary care providers' collaboration  
387 with older patients with heart failure was effective in reducing deaths, hospital readmission  
388 rates and length of hospital stay. This program focused on physicians providing follow up  
389 telephone calls with patients about their medication regiment and home visits. <sup>72</sup>. After  
390 implementation of a nursing-initiated medication education program for older patients aimed  
391 at improving medication knowledge prior to discharge, 78% of patients felt satisfied with the  
392 program as it helped them to recall medication details such as names, dosages or times of  
393 administration <sup>76</sup>.

**Table 3** Thematic Map for Included Studies

Study (first author/ Year/Country)	Medication discrepancies are linked to communication			Enabling self-care through older patient engagement		Older patients' experiences with health professionals about their medication regimen			Strategies in communicating about medications with older patients		
	Communication between hospitals and the community	Tailored communication	Accuracy of medication documentation	Patient self-management of medications	Decision-making involvement with older patients	Satisfaction with medication related services	Information exchange about medications	Effects of patient demographic characteristics	Individualised discharge summaries	Pharmacists' interventions	Medication education
Allen et al., 2018, Australia				*	*	*	*		*		*
Arora et al. (2010), United States	*			*	*						
Bagge et al. (2014), New Zealand			*		*		*				
Bayliss, et al. (2016), USA		*	*			*					
Cochrane et al. (1992), UK	*						*				*
Coleman et al. (2004), USA				*	*		*				*
Dedhia et al., (2009), USA	*								*		
Enguidanos et al., (2005), USA			*				*				
Flacker et al. (2007), USA				*			*				
German et al. (1982), USA		*					*				*
Hvidt et al. (2014), Denmark								*			
Jeffs et al. (2017), Canada					*		*	*			
Lindquist et al. (2014), USA							*	*			
López et al. (2006), Italy						*				*	*
McAiney et al. (2017), Canada				*		*					
Mesteig et al. (2010), Norway	*						*				

<b>Rustad et al. (2016), Sweden</b>				*	*		*				
<b>Shen et al. (2006), Australia</b>						*					*
<b>Spinewine et al (2007), Belgium</b>							*			*	*
<b>Wong et al. (2016), Canada</b>	*	*	*						*		
<b>O’Kula et al. (2016), USA</b>								*			
<b>Leduc et al. (1998), Canada</b>	*					*					
<b>Clare et al. (1998), Australia</b>		*				*	*				
<b>Rich et al. (1996), USA</b>											*
<b>Burns et al. (1992), Scotland</b>	*									*	*
<b>Barnett et al. (2017), UK</b>	*						*			*	*
<b>Blennerhassett et al. (2011), Australia</b>	*			*			*				*
<b>Eyler et al. (2016), USA</b>						*				*	
<b>Chiu et al. (2018), Hong Kong</b>						*	*			*	*
<b>Sexton et al. (1999), UK</b>	*		*				*				
<b>Knight et al. (2011), UK</b>	*		*	*	*	*	*				
<b>Gadbois et al. (2018), USA</b>	*		*				*				
<b>Sindaco et al. (2007), Italy</b>											*

391

#### 392 **4. Discussion**

393

394 The review provides a comprehensive examination of the perspectives of older patients  
395 in relation to communication about medications across transitions of care. Communication  
396 breakdowns were associated with medication discrepancies, specifically at the time of older  
397 patients' hospital discharge to the community. Older patients were frustrated with the lack of  
398 appropriate communication about their medications, especially when their medications were  
399 changed, or new medications were prescribed. There were differences between older patients'  
400 expectations of how medication communication should occur and what they experienced when  
401 they moved between different care settings. Older patients expected to receive information  
402 about changed medications before discharge and anticipated comprehensive communication  
403 between their PCPs and hospital providers, this did not always occur. For older patients,  
404 communication strategies that contributed to enhanced medication management comprised  
405 receiving written information about medications and medication education before discharge.

406 Older patients thought effective communication should occur between health  
407 professionals situated in hospitals and those in community settings, however these expectations  
408 were often not met. Similarly, older patients expected their PCPs to be well informed about  
409 their updated medications, and they also expected them to communicate regularly with their  
410 medical specialists; this communication did not always occur <sup>88</sup>.

411 Different insights into decision-making roles played by patients were identified. Some  
412 older patients were actively engaged in communicating with hospital staff about how to use  
413 post-discharge medications, while others experienced difficulties in asking questions. There  
414 were missed opportunities for health care providers in involving older patients in medication  
415 decision making <sup>50</sup>. The systematic review identified there were missed opportunities where  
416 health professionals could impact on improving communication about medications with older  
417 patients across transitions of care. There were opportunities for nurses or pharmacists to explain  
418 to older patients how medication changes were likely to affect therapeutic and unwanted  
419 effects. However, these interactions were rarely observed to occur <sup>50</sup>. Pharmacy staff usually  
420 wanted to communicate with older patients on the day of admission when they were more likely  
421 to experience confusion, tiredness or were affected by their state of illness. Alternatively, trying  
422 to communicate at discharge was also likely to cause issues when patients were wanting to go  
423 home. There were missed opportunities for pharmacists to communicate *during* the patients'  
424 stay<sup>57</sup>. There were also missed opportunities with doctors who made decisions about discharge

425 medications without listening to patients' accounts of their symptoms or family members'  
426 concerns. Missed opportunities were also sometimes patient-related where patients thought that  
427 they should have asked physicians more questions but they did not know what to ask<sup>53</sup>. Lack  
428 of patient interest in being involved in the decision-making process could also be related to  
429 their experiences with paternalism in the health care system <sup>89</sup>. A paternalistic environment  
430 may result in health professionals not listening to older patients, health professionals not giving  
431 patients an opportunity to ask questions, and a failure to acknowledge variations in patients'  
432 health literacy, which affects their ability to comprehend medication information.

433 Older patients found particular communication strategies effective to support  
434 medication use across transitions of care. These strategies included receipt of written guides  
435 about discharge medications, plain language medication lists and clear explanations about  
436 medication changes. Explicit information justifying medication modifications to primary care  
437 providers has been found useful in simplifying complex medication regimens <sup>90</sup>. Interventions  
438 that involved patient-centred consultations, medication reconciliation on admission and  
439 discharge, post-discharge referrals to the community pharmacist or primary care for medication  
440 review or post-discharge phone follow-up have been shown to be effective strategies for  
441 reducing medication-related readmissions in older people <sup>56</sup>. Investigators of two intervention  
442 studies claimed that they implemented patient-centered interventions. However, there was  
443 insufficient clarification about how patients were involved in consultations or whether or not  
444 patients were at the center of the decision-making process<sup>56, 78</sup>. Only one intervention study  
445 used a pharmacist-led motivational interviewing method as an example of patient-centred  
446 approach. This study emphasised that patient-centeredness can be achieved through  
447 counselling patients to explore their understanding of prescribed medications, their motivations  
448 and confidence to complete the medications as well as their perceived barriers to medication  
449 adherence<sup>60</sup>. The term of patient-centeredness is becoming extensively used, but inadequately  
450 understood in the context of care transition of older patients. Patient-centeredness was  
451 sometimes conceived as sharing all decisions and information with patients. However, it should  
452 involve encouraging patients to have opportunities to express their views and preferences  
453 about medication decisions <sup>91</sup>.

454 It is of value to relate the findings of this systematic review to theoretical insights of  
455 medication management relating to transitions of care. The Partnership Model advocates the  
456 need for continuous and accurate transfer of medication information across settings and  
457 between different episodes of care, in preventing medication errors <sup>92</sup>. The Medication  
458 Communication Model suggests that the actual words used by health professionals such as

459 “we” rather than just “I” and “you” can facilitate inclusive and open communication, which  
460 provides the patient with opportunities to express concerns and needs about their medications  
461 <sup>93</sup>. Therefore, partnerships amongst patients and health professionals can be maintained by  
462 open communication where all knowledge about medications are shared between individuals.  
463 It may help to facilitate patient-centered, shared decision making, which in turn improves  
464 medication safety in practice<sup>92, 94</sup>. None of the papers used a conceptual framework to provide  
465 theoretical underpinnings regarding the phenomenon of interest <sup>95</sup>. The use of conceptual  
466 frameworks can help to ensure interventions contain particular components that then contribute  
467 to implementation of successful interventions involving medication communication. For  
468 example, the use of the Shared Decision-making Model can help to elucidate understandings  
469 about interactions between pharmacists, physicians or nurses and patients and the ways in  
470 which decisions are made<sup>94</sup>. Models can also be used to consider situational factors such as  
471 time constraints and environmental issues in the decision-making process<sup>94</sup>. For instance, the  
472 Shared Decision Making Model (SDM)<sup>96</sup> provides practical tools by recognizing the time that  
473 patients might need to study the new information about different options of medications and  
474 treatments. It also provides patient with interactive and patient-specific decision aids so that  
475 they can discuss their preferences with other people, including family members and friends at  
476 different times and different places, before arriving at final decisions with health care  
477 providers<sup>96</sup>.

#### 478 *4.1. Methodological Limitations of Included Studies*

479  
480 Few qualitative papers comprehensively examined the patients’ medication  
481 communication experiences with all health professional disciplines, but most focused on a  
482 single group, such as pharmacists or nurses, or they were conducted at single  
483 sites. Some interventions involved older patients with specific health conditions, such as heart  
484 failure or pneumonia. There was insufficient use of qualitative observational designs, which  
485 provides insight into what happens in actual settings. Of 12 qualitative studies, only one  
486 included patients from non-English speaking backgrounds. Intervention studies tended to focus  
487 on the discharge or post-discharge period, whereas only one study involved a multidisciplinary  
488 intervention comprising a patient-centred medication reconciliation program on admission and  
489 at discharge. Most studies examining communication across transitions of care were conducted  
490 in acute hospital settings, and rarely considered aged care facilities or used observational  
491 designs. According to MMAT results, the qualitative papers lacked information about the  
492 researchers’ reflexivity in relation to the research process. For RCTs, the lack of clear

493 description of randomisation or blinding was the underlying reason for lower scores, whereas  
494 for other quantitative studies, low scores were associated with insufficient explanations about  
495 the sampling strategy.

#### 496 *4.2. Limitations of the Systematic Review*

497  
498 There are some limitations associated with the systematic review. Studies that were not  
499 in the English language were excluded. It was sometimes difficult to extract specific  
500 information about older patients' perspectives on medication-related communication across  
501 transitions of care from studies that investigated a range of issues about transitions of care.  
502 Retrieved quantitative studies were very heterogenous in terms of aims, methodologies and  
503 outcome variables. It was therefore impossible to consider data pooling using meta-analysis.

#### 504 *4.3. Implication for Practice and Future Research*

505  
506 During management of medications, pharmacists and other health professionals need to  
507 use this activity as an opportunity to inform older patients about pending and existing changes  
508 to their medications. At key communication processes, such as ward rounds, bedside handovers  
509 and informal discussions with older patients, health professionals need to act as their advocates,  
510 asking them if they have any concerns about changes made to their medications, planning for  
511 transfers to other clinical settings and organising medication plans of care for discharge home.  
512 In health professionals acting as patients' advocates, there will be greater likelihood that  
513 patients will be able to be actively involved in making decisions about their medications and  
514 in speaking up if they have concerns. Pharmacists can also play a greater role in educating  
515 older patients about medications through repetition of straightforward instructions at each  
516 bedside visit, which contributes to patients' recall of fundamental medication knowledge.  
517 Older patients are more likely to be receptive to developing a more comprehensive  
518 understanding about their medications, which may encourage them to be more independent  
519 after discharge.

520 Taking into account older patients' views is a helpful way of addressing their concerns  
521 and promoting patient-centred care. This systematic review demonstrated that successful  
522 implementation of effective, tailored communication about medications requires a  
523 multidisciplinary approach with medical, pharmacist and nursing involvement, which leads to  
524 improved patient satisfaction and reduced hospital readmission after discharge.  
525 Multidisciplinary patient-centred medication education should be offered to older patients  
526 across each care transition point, from admission to discharge in order to encourage older

527 patients' involvement. Health professionals should be aware that older patients' involvement  
528 in medication communication can be influenced by multiple factors during communication  
529 encounters. These factors include patients' health beliefs, health literacy, values, and  
530 perceptions of their own medical conditions, spatial factors of the care environment and  
531 providers' own attitudes towards older patients. In taking these factors into consideration,  
532 dedicated attention is needed in listening to older patients' concerns, asking questions to ensure  
533 their understanding of medications, and most importantly, adopting caring attitudes in  
534 establishing two-way communication.

535 Future studies could focus on examining the experiences of older patients who have  
536 language barriers and cognitive impairment. The conduct of observational studies should be  
537 considered to examine how environmental and sociocultural characteristics influence older  
538 patients' experiences of communication about medications across transitions of care<sup>93</sup>. Factors  
539 such as source of distractions, layouts of care settings and their impacts on the interactions  
540 between patient and health professionals can be better explored through observations.  
541 Environmental characteristics such as time of day, availability of health professionals in  
542 clinical settings would also be considered. Sociocultural characteristics could comprise older  
543 patients' beliefs and values about their relationships with health professionals, language spoken  
544 at home, coexisting health issues, their health literacy and knowledge about their medications,  
545 and ability to understand health professionals<sup>93,97</sup>. Individual factors including moods,  
546 attitudes and manners during the communication events, workload and time management skills  
547 of health professionals can help to identify enriching information about how older patients'  
548 experiences can be facilitated and optimized.

## 549 **5. Conclusions**

550  
551 Communication about managing medication across transitions of care can be challenging  
552 and sometimes overlooked, when older patients are treated for multiple health conditions by  
553 diverse health professionals across settings. The systematic review identified communication  
554 breakdowns between hospital and community settings led not only to medication discrepancies,  
555 they also hindered older patients' self-medication management after discharge. Older patients  
556 valued timely and tailored verbal and written communication and receiving education from  
557 diverse health professionals when they moved between settings. Transitions of care do not  
558 comprise linear trajectories of patients' movements, with a starting and finishing point. Instead,  
559 they are endless loops of movements, where older patients can backtrack and move forward in

560 different ways. Health professionals need to regularly consider older patients' views across  
561 transition of care, where often rapid and critical decisions are made about medications.

562 **Funding sources**

563 This research is funded by an Australian Research Council, Discovery Project Grant  
564 (DP170100308).

565 **Conflicts of interest**

566 The authors have no conflict of interest to declare.

## 539 REFERENCES

540

541 1. Baillie L, Gallini A, Corser R, Elworthy G, Scotcher A, Barrand A. Care transitions for frail, older people

542 from acute hospital wards within an integrated healthcare system in England: A qualitative case

543 study. *International Journal of Integrated Care*. 2014;14. <https://doi.org/10.5334/ijic.1175>

544 2. McLeod LA. Patient transitions from inpatient to outpatient: Where are the risks? Can we address

545 them? *J. Healthc. Risk Manag.* 2013;32:13. <https://doi.org/10.1002/jhrm.21101>

546 3. Gandara E, Moniz T, Ungar J, et al. Communication and information deficits in patients discharged to

547 rehabilitation facilities: An evaluation of five acute care hospitals. *J. Hosp. Med.* 2009;4:E28-33.548 <https://doi.org/10.1002/jhm.474>

549 4. Glinborg B, Andersen SE, Dalhoff K. Insufficient communication about medication use at the interface

550 between hospital and primary care. *Qual Saf Health Care*. 2007;16:34-39.551 <https://doi.org/10.1136/qshc.2006.019828>

552 5. Witherington EM, Pirzada OM, Avery AJ. Communication gaps and readmissions to hospital for

553 patients aged 75 years and older: observational study. *Qual Saf Health Care*. 2008;17:71-75.554 <https://doi.org/10.1136/qshc.2006.020842>

555 6. Akram F, Huggan PJ, Lim V, et al. Medication discrepancies and associated risk factors identified

556 among elderly patients discharged from a tertiary hospital in Singapore. *Singapore Med. J.*557 2015;56:379-384. <https://doi.org/10.11622/smedj.2015108>

558 7. Osorio SN, Abramson E, Pfoh ER, Edwards A, Schottel H, Kaushal R. Risk factors for unexplained

559 medication discrepancies during transitions in care. *Fam. Med.* 2014;46:587-596.560 [http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=md](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mdc&AN=25163036&site=eds-live&scope=site)561 [c&AN=25163036&site=eds-live&scope=site](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mdc&AN=25163036&site=eds-live&scope=site)

562 8. Manias E, Hughes C. Challenges of managing medications for older people at transition points of care.

563 *Res. Social Adm. Pharm.* 2015;11:442-447. <https://doi.org/10.1016/j.sapharm.2014.10.001>

564 9. Cornu P, Steurbaut S, Leysen T, et al. Effect of medication reconciliation at hospital admission on

565 medication discrepancies during hospitalization and at discharge for geriatric patients. *Ann.*566 *Pharmacother.* 2012;46:484-494. <https://doi.org/10.1345/aph.1Q594>

567 10. Knez L, Suskovic S, Rezonja R, Laaksonen R, Mrhar A. The need for medication reconciliation: a cross-

568 sectional observational study in adult patients. *Respir. Med.* 2011;105 Suppl 1:S60-66.569 [https://doi.org/10.1016/S0954-6111\(11\)70013-0](https://doi.org/10.1016/S0954-6111(11)70013-0)

570 11. Pippins JR, Gandhi TK, Hamann C, et al. Classifying and Predicting Errors of Inpatient Medication

571 Reconciliation. *J. Gen. Intern. Med.* 2008,572 <http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds>573 [gao&AN=edsgcl.231189950&authtype=sso&custid=deakin&site=eds-live&scope=site:1414.](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds)

574 12. Cornish PL, Knowles SR, Marchesano R, et al. Unintended Medication Discrepancies at the Time of

575 Hospital Admission. *Arch. Intern. Med.* 2005;165:424-429. <https://doi.org/10.1001/archinte.165.4.424>576 13. NCCMERP. About Medication Errors: What is a Medication Error?, [https://www.nccmerp.org/about-](https://www.nccmerp.org/about-medication-errors)577 [medication-errors](https://www.nccmerp.org/about-medication-errors): The National Coordinating Council for Medication Error Reporting and Prevention;

578 2020.

579 14. Van Den Bemt PMLA, Van Der Schriek-De Loos EM, Van Der Linden C, Theeuwes AMLJ, Pol AG. Effect

580 of medication reconciliation on unintentional medication discrepancies in acute hospital admissions

581 of elderly adults: A multicenter study. *J. Am. Geriatr. Soc.* 2013;61:1262-1268.582 <https://doi.org/10.1111/jgs.12380>

583 15. Cornish PL, Knowles SR, Shadowitz S, et al. Unintended Medication Discrepancies at the Time of

584 Hospital Admission. *Arch. Intern. Med.* 2005;165:424-429. <https://doi.org/10.1001/archinte.165.4.424>

585 16. Tam VC, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. Frequency, type and clinical

586 importance of medication history errors at admission to hospital: a systematic review. *Can. Med.*587 *Assoc. J.* 2005;173:510-515. <https://doi.org/10.1503/cmaj.045311>

588 17. De Boer A, Lau HS, Florax C, Porsius AJ. The completeness of medication histories in hospital medical

589 records of patients admitted to general internal medicine wards. *Br. J. Clin. Pharmacol.* 2000;49:597-590 603. <https://doi.org/10.1046/j.1365-2125.2000.00204.x>

591 18. Sullivan C, Gleason KM, Rooney D, Groszek JM, Barnard C. Medication reconciliation in the acute care

592 setting - Opportunity for nursing and challenge. *J. Nurs. Care Qual.* 2005;20:95-98.593 <https://doi.org/10.1097/00001786-200504000-00001>

- 594 19. Manias E, Gerdtz MF, Weiland TJ, Collins M. Medication Use Across Transition Points from the  
595 Emergency Department: Identifying Factors Associated with Medication Discrepancies. *Ann.*  
596 *Pharmacother.* 2009;43:1755-1764. <https://doi.org/10.1345/aph.1M206>  
597 20. Bridgeman PJ, Rynn KO. Medication reconciliation in the emergency department. *Am. J. Health Syst.*  
598 *Pharm.* 2008;65:2325-2326. <https://doi.org/10.2146/ajhp080199>  
599 21. Manias E, Gerdtz M, Williams A, McGuinness J, Dooley M. Communicating about the management of  
600 medications as patients move across transition points of care: an observation and interview study. *J.*  
601 *Eval. Clin. Pract.* 2016;22:635-643. <https://doi.org/10.1111/jep.12507>  
602 22. Surbhi S, Munshi KD, Bell PC, Bailey JE. Drug therapy problems and medication discrepancies during  
603 care transitions in super-utilizers. *J. Am. Pharm. Assoc. (2003).* 2016;56:633-642.  
604 <https://doi.org/10.1016/j.japh.2016.07.004>  
605 23. Flora DS, Parsons PL, Slattum PW. Managing Medications for Improved Care Transitions. *Generations.*  
606 2011;35:37-42.  
607 <http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=pbh&AN=72679373&site=eds-live&scope=site>  
608 24. Levenson SA, Saffel DA. The Consultant Pharmacist and the Physician in the Nursing Home: Roles,  
609 Relationships, and a Recipe for Success. *J. Am. Med. Dir. Assoc.* 2007;8:55-64.  
610 <https://doi.org/10.1016/j.jamda.2006.11.002>  
611 25. American Pharmacists A, American Society of Health-System P. Improving care transitions: Optimizing  
612 medication reconciliation. *J. Am. Pharm. Assoc. (2003).* 2012;52:e43-e52.  
613 <https://doi.org/10.1331/JAPhA.2012.12527>  
614 26. Holland DM. Interdisciplinary collaboration in the provision of a pharmacist-led discharge medication  
615 reconciliation service at an Irish teaching hospital. *Int. J. Clin. Pharm.* 2015;37:310-319.  
616 <https://doi.org/10.1007/s11096-014-0059-y>  
617 27. Wittkowsky AK. Impact of target-specific oral anticoagulants on transitions of care and outpatient  
618 care models. *J. Thromb. Thrombolysis.* 2013;35:304-311. <https://doi.org/10.1007/s11239-013-0879-y>  
619 28. Chhabra PT, Rattinger GB, Dutcher SK, Hare ME, Parsons KL, Zuckerman IH. Medication reconciliation  
620 during the transition to and from long-term care settings: A systematic review. *Research in Social and*  
621 *Administrative Pharmacy.* 2012,  
622 [http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds\\_gao&AN=edsgcl.277195235&authtype=sso&custid=deakin&site=eds-live&scope=site:60](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds_gao&AN=edsgcl.277195235&authtype=sso&custid=deakin&site=eds-live&scope=site:60).  
623 29. Kristeller J. Transition of Care: Pharmacist Help Needed. *Hosp. Pharm.* 2014;49:215-216.  
624 <https://doi.org/10.1310/hpj4903-215>  
625 30. Kourkouta L, Papatheanasiou IV. Communication in nursing practice. *Mater Sociomed.* 2014;26:65-67.  
626 <https://doi.org/10.5455/msm.2014.26.65-67>  
627 31. Chard R, Makary MA. Transfer-of-Care Communication: Nursing Best Practices. *AORN J.*  
628 2015;102:329-339. <https://doi.org/10.1016/j.aorn.2015.07.009>  
629 32. Knight DA, Thompson D, Mathie E, Dickinson A. 'Seamless care? Just a list would have helped!' older  
630 people and their carer's experiences of support with medication on discharge home from hospital.  
631 *Health Expectations: An International Journal of Public Participation in Health Care & Health Policy.*  
632 2013;16:277-291.  
633 [http://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=psych&AN=2013-29393-008&site=ehost-live&scope=site&authtype=sso&custid=deakin\\_d.knight@herts.ac.uk](http://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=psych&AN=2013-29393-008&site=ehost-live&scope=site&authtype=sso&custid=deakin_d.knight@herts.ac.uk)  
634 33. Manias E, Gerdtz M, Williams A, Dooley M. Complexities of medicines safety: communicating about  
635 managing medicines at transition points of care across emergency departments and medical wards. *J.*  
636 *Clin. Nurs.* 2015;24:69-80. <https://doi.org/10.1111/jocn.12685>  
637 34. Lingaratnam S, Aranda S, Pearce T, Kirsa S. A controlled before and after study to evaluate a patient  
638 and health professional partnership model towards effective medication reconciliation. *J. Oncol.*  
639 *Pharm. Pract.* 2013;19:48-56. <https://doi.org/10.1177/1078155212451936>  
640 35. Halapy H, Kertland H. Ascertaining problems with medication histories. *The Canadian journal of*  
641 *hospital pharmacy.* 2012;65:360-367. <https://doi.org/10.4212/cjhp.v65i5.1173>  
642 36. APAC.Guiding principles to achieve continuity in medication management2005.  
643 [https://www1.health.gov.au/internet/main/publishing.nsf/650f3eec0dfb990fca25692100069854/eea5b39aa0a63f18ca257bf0001dae08/\\$FILE/Guiding-principles-to-achieve-continuity-in-medication-management.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/650f3eec0dfb990fca25692100069854/eea5b39aa0a63f18ca257bf0001dae08/$FILE/Guiding-principles-to-achieve-continuity-in-medication-management.pdf)  
644 37. Shaw T, Hines M, Kielly-Carroll C.Impact of Digital Health on the Safety and Quality of Health  
645 CareSydney:2017

- 651 38. Graber ML, Siegal D, Riah H, Johnston D, Kenyon K. Electronic Health Record–Related Events in  
652 Medical Malpractice Claims. *Journal of Patient Safety*. 2019;15:77-85.  
653 <https://doi.org/10.1097/pts.0000000000000240>
- 654 39. Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and  
655 information transfer between hospital-based and primary care physicians: Implications for patient  
656 safety and continuity of care. *JAMA, The Journal of the American Medical Association*. 2007,  
657 <http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds-gao&AN=edsgcl.162080128&authtype=sso&custid=deakin&site=eds-live&scope=site:831>.
- 658 40. Allen J, Hutchinson AM, Brown R, Livingston PM. Quality care outcomes following transitional care  
659 interventions for older people from hospital to home: a systematic review. *BMC Health Serv. Res*.  
660 2014; 10.1186/1472-6963-14-346. <https://doi.org/10.1186/1472-6963-14-346>
- 661 41. Soares MM, Jacobs K, Laugaland K, Aase K, Barach P. Interventions to improve patient safety in  
662 transitional care - a review of the evidence. *Work*. 2012;41:2915-2924. [https://doi.org/10.3233/WOR-](https://doi.org/10.3233/WOR-2012-0544-2915)  
663 [2012-0544-2915](https://doi.org/10.3233/WOR-2012-0544-2915)
- 664 42. LaMantia MA, Scheunemann LP, Viera AJ, Busby-Whitehead J, Hanson LC. Interventions to Improve  
665 Transitional Care Between Nursing Homes and Hospitals: A Systematic Review. 2010; 10.1111/j.1532-  
666 5415.2010.02776.x:777. <https://doi.org/10.1111/j.1532-5415.2010.02776.x>
- 667 43. Albert NM. A systematic review of transitional-care strategies to reduce rehospitalization in patients  
668 with heart failure. *Heart and Lung: Journal of Acute and Critical Care*. 2016;45:100-113.  
669 <https://doi.org/10.1016/j.hrtlng.2015.12.001>
- 670 44. Puhr MI, Thompson HJ. The use of transitional care models in patients with stroke. *J. Neurosci. Nurs*.  
671 2015;47:223. <https://doi.org/10.1097/JNN.0000000000000143>
- 672 45. Schell W. A review: Discharge navigation and its effect on heart failure readmissions. *Professional*  
673 *Case Management*. 2014;19:224-234. <https://doi.org/10.1097/NCM.0000000000000040>
- 674 46. Spinewine A, Claeys C, Foulon V, Chevalier P. Approaches for improving continuity of care in  
675 medication management: A systematic review. *Int. J. Qual. Health Care*. 2013;25:403-417.  
676 <https://doi.org/10.1093/intqhc/mzt032>
- 677 47. Kostas T, Paquin AM, Zimmerman K, Simone M, Skarf LM, Rudolph JL. Characterizing medication  
678 discrepancies among older adults during transitions of care: a systematic review focusing on  
679 discrepancy synonyms, data sources and classification terms. *Aging Health*. 2013;  
680 10.2217/ahe.13.47:497. <https://doi.org/10.2217/ahe.13.47>
- 681 48. Mansah M, Fernandez R, Griffiths R, Chang E. Effectiveness of strategies to promote safe transition of  
682 elderly people across care settings. *JBI Library of Systematic Reviews*. 2009;7:1036.  
683 [https://doi.org/http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?dire](https://doi.org/http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=113589540&authtype=sso&custid=deakin&site=eds-live&scope=site)  
684 [ct=true&db=ccm&AN=113589540&authtype=sso&custid=deakin&site=eds-live&scope=site](https://doi.org/http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=113589540&authtype=sso&custid=deakin&site=eds-live&scope=site)
- 685 49. Hias J, Van der Linden L, Spriet I, et al. Predictors for unintentional medication reconciliation  
686 discrepancies in preadmission medication: a systematic review. *Eur. J. Clin. Pharmacol*. 2017;73:1355-  
687 1377. <https://doi.org/10.1007/s00228-017-2308-1>
- 688 50. Bolster D, Manias E. Person-centred interactions between nurses and patients during medication  
689 activities in an acute hospital setting: qualitative observation and interview study. *Int. J. Nurs. Stud*.  
690 2010;47:154-165. <https://doi.org/10.1016/j.ijnurstu.2009.05.021>
- 691 51. Moher D, Liberati A, Tetzlaff J, G. Altman D. Preferred reporting items for systematic reviews and  
692 meta-analyses: the PRISMA statement. *BMJ: British Medical Journal*. 2009;339:332.  
693 [http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds-](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds-jr&AN=edsjrs.25672329&authtype=sso&custid=deakin&site=eds-live&scope=site)  
694 [jr&AN=edsjrs.25672329&authtype=sso&custid=deakin&site=eds-live&scope=site](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds-jr&AN=edsjrs.25672329&authtype=sso&custid=deakin&site=eds-live&scope=site)
- 695 52. Hong QN, Bartlett G, Vedel I, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for  
696 information professionals and researchers. *Education for Information*. 2018;34:285-291.  
697 <https://doi.org/10.3233/EFI-180221>
- 698 53. Allen J, Hutchinson AM, Brown R, Livingston PM. User experience and care for older people  
699 transitioning from hospital to home: Patients' and carers' perspectives. *Health Expect*. 2018;21:518-  
700 527. <https://doi.org/10.1111/hex.12646>
- 701 54. Chiu PK, Lee AW, See TY, Chan FH. Outcomes of a pharmacist-led medication review programme for  
702 hospitalised elderly patients. *Hong Kong Med. J*. 2018;24:98-106.  
703 <https://doi.org/10.12809/hkmj176871>
- 704 55. Gadbois EA, Tyler DA, Shield R, et al. Lost in Transition: a Qualitative Study of Patients Discharged  
705 from Hospital to Skilled Nursing Facility. *J. Gen. Intern. Med*. 2018;10.1007/s11606-018-4695-0.  
706 <https://doi.org/10.1007/s11606-018-4695-0>
- 707

- 708 56. Barnett NL, Dave K, Athwal D, Parmar P, Kaher S, Ward C. Impact of an integrated medicines  
709 management service on preventable medicines-related readmission to hospital: a descriptive study.  
710 *Eur J Hosp Pharm-S P*. 2017;24:327-331. <https://doi.org/10.1136/ejhpharm-2016-000984>  
711 57. Jeffs L, Saragosa M, Law M, et al. Elucidating the information exchange during interfacility care  
712 transitions: Insights from a Qualitative Study. *BMJ Open*. 2017;7:e015400.  
713 <https://doi.org/10.1136/bmjopen-2016-015400>  
714 58. McAiney CA, Hillier LM, Paul J, et al. Improving the seniors' transition from hospital to the community:  
715 a case for intensive geriatric service workers. *Int. Psychogeriatr*. 2017;29:149-163.  
716 <https://doi.org/10.1017/S1041610216001058>  
717 59. Bayliss EA, McQuillan DB, Ellis JL, et al. Using Electronic Health Record Data to Measure Care Quality  
718 for Individuals with Multiple Chronic Medical Conditions. *J. Am. Geriatr. Soc*. 2016;64:1839-1844.  
719 <https://doi.org/10.1111/jgs.14248>  
720 60. Eyler R, Shvets K, Blakely ML. Motivational interviewing to increase postdischarge antibiotic  
721 adherence in older adults with pneumonia. *Consult. Pharm*. 2016;31:38-43.  
722 <https://doi.org/10.4140/TCP.n.2016.38>  
723 61. O'Kula SS, Gottesman E, Jones S, Signor D, Hung WW, Boockvar KS. Transitional care outcomes in  
724 older Spanish–English bilingual veterans. *J. Am. Geriatr. Soc*. 2016;64:1132-1133.  
725 <https://doi.org/10.1111/jgs.14116>  
726 62. Rustad EC, Furnes B, Dysvik E, Cronfalk BS. Older patients' experiences during care transition. *Patient*  
727 *Preference and Adherence*. 2016;10:769-779. <https://doi.org/10.2147/PPA.S97570>  
728 63. Wong C, Hogan DB. Care transitions: Using narratives to assess continuity of care provided to older  
729 patients after hospital discharge. *Canadian Geriatrics Journal*. 2016;19:97-102.  
730 <https://doi.org/10.5770/cgi.19.229>  
731 64. Bagge M, Norris P, Heydon S, Tordoff J. Older people's experiences of medicine changes on leaving  
732 hospital. *Res. Social Adm. Pharm*. 2014;10:791-800. <https://doi.org/10.1016/j.sapharm.2013.10.005>  
733 65. Hvidt LN, Hvidt KN, Madsen K, Schmidt TA. Comprehension deficits among older patients in a quick  
734 diagnostic unit. *Clin. Interv. Aging*. 2014;9:705-710. <https://doi.org/10.2147/CIA.S61850>  
735 66. Lindquist LA, Lindquist LM, Zickuhr L, Friesema E, Wolf MS. Unnecessary complexity of home  
736 medication regimens among seniors. *Patient Educ. Couns*. 2014;96:93-97.  
737 <https://doi.org/10.1016/j.pec.2014.03.022>  
738 67. Blennerhassett J, Hilbers J. Medicine management in older people from non-english speaking  
739 backgrounds. *Journal of Pharmacy Practice and Research*. 2011;41:33-36.  
740 <https://doi.org/10.1002/j.2055-2335.2011.tb00063.x>  
741 68. Knight DA, Thompson D, Mathie E, Dickinson A. 'Seamless care? Just a list would have helped!' older  
742 people and their carer's experiences of support with medication on discharge home from hospital.  
743 *Health Expectations: An International Journal of Public Participation in Health Care & Health Policy*.  
744 2011;16:277-291. <https://doi.org/10.1111/j.1369-7625.2011.00714.x>  
745 69. Arora VM, Prochaska ML, Farnan JM, et al. Problems after discharge and understanding of  
746 communication with their primary care physicians among hospitalized seniors: a mixed methods  
747 study. *J. Hosp. Med*. 2010;5:385-391. <https://doi.org/10.1002/jhm.668>  
748 70. Mesteig M, Helbostad JL, Sletvold O, Rosstad T, Saltvedt I. Unwanted incidents during transition of  
749 geriatric patients from hospital to home: a prospective observational study. *BMC Health Serv. Res*.  
750 2010;10:1-9. <https://doi.org/10.1186/1472-6963-10-1>  
751 71. Dedhia P, Kravet S, Bulger J, et al. A quality improvement intervention to facilitate the transition of  
752 older adults from three hospitals back to their homes. *J. Am. Geriatr. Soc*. 2009;57:1540-1546.  
753 <https://doi.org/10.1111/j.1532-5415.2009.02430.x>  
754 72. Del Sindaco D, Pulignano G, Minardi G, et al. Two-year outcome of a prospective, controlled study of a  
755 disease management programme for elderly patients with heart failure. *J. Cardiovasc. Med.*  
756 *(Hagerstown)*. 2007;8:324-329. <https://doi.org/10.2459/JCM.0b013e32801164cb>  
757 73. Flacker J, Park W, Sims A. Hospital discharge information and older patients: Do they get what they  
758 need? *J. Hosp. Med*. 2007;2:291-296. <https://doi.org/10.1002/jhm.166>  
759 74. Spinewine A, Swine C, Dhillion S, et al. Effect of a collaborative approach on the quality of prescribing  
760 for geriatric inpatients: a randomized, controlled trial. *J. Am. Geriatr. Soc*. 2007;55:658-665.  
761 <https://doi.org/10.1111/j.1532-5415.2007.01132.x>  
762 75. Lopez Cabezas C, Falces Salvador C, Cubi Quadrada D, et al. Randomized clinical trial of a  
763 postdischarge pharmaceutical care program vs regular follow-up in patients with heart failure. *Farm*  
764 *Hosp*. 2006;30:328-342. <https://doi.org/10.1097/00005650-199806000-00013>

- 765 76. Shen Q, Karr M, Ko A, Chan DK, Khan R, Duvall D. Evaluation of a medication education program for  
766 elderly hospital in-patients. *Geriatr. Nurs.* 2006;27:184-192.  
767 <https://doi.org/10.1016/j.gerinurse.2006.03.015>
- 768 77. Enguidanos SM, Brumley RD. Risk of medication errors at hospital discharge and barriers to problem  
769 resolution. *Home Health Care Serv. Q.* 2005;24:123-135. [https://doi.org/10.1300/J027v24n01\\_09](https://doi.org/10.1300/J027v24n01_09)
- 770 78. Coleman EA, Smith JD, Frank JC, Min SJ, Parry C, Kramer AM. Preparing patients and caregivers to  
771 participate in care delivered across settings: the Care Transitions Intervention. *J. Am. Geriatr. Soc.*  
772 2004;52:1817-1825. <https://doi.org/10.1111/j.1532-5415.2004.52504.x>
- 773 79. Sexton J, Brown A. Problems with medicines following hospital discharge: Not always the patient's  
774 fault? *J. Soc. Adm. Pharm.* 1999;16:199-207.  
775 <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emca1&NEWS=N&AN=30123725>
- 776 80. Clare J, Hofmeyer A. Discharge planning and continuity of care for aged people: indicators of  
777 satisfaction and implications for practice. *Aust. J. Adv. Nurs.* 1998;16:7-13.  
778 <https://doi.org/http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-0032161973&authtype=sso&custid=deakin&site=eds-live&scope=site>.
- 780 81. Leduc N, Tannenbaum TN, Bergman H, Champagne F, Clarfield AM, Kogan S. Compliance of frail  
781 elderly with health services prescribed at discharge from an acute-care geriatric ward. *Med. Care.*  
782 1998;36:904-914. <https://doi.org/10.1097/00005650-199806000-00013>
- 783 82. Rich MW, Gray DB, Beckham V, Wittenberg C, Luther P. Effect of a multidisciplinary intervention on  
784 medication compliance in elderly patients with congestive heart failure. *Am. J. Med.* 1996;101:270-  
785 276. [https://doi.org/https://doi.org/10.1016/S0002-9343\(96\)00172-6](https://doi.org/https://doi.org/10.1016/S0002-9343(96)00172-6)
- 786 83. Burns JM, Sneddon I, Lovell M, McLean A, Martin BJ. Elderly patients and their medication: a post-  
787 discharge follow-up study. *Age Ageing.* 1992;21:178-181. <https://doi.org/10.1093/ageing/21.3.178>
- 788 84. Cochrane RA, Mandal AR, Ledger-Scott M, Walker R. Changes in drug treatment after discharge from  
789 hospital in geriatric patients. *Br. Med. J.* 1992;305:694-696.  
790 <https://doi.org/https://www.jstor.org/stable/29717006>
- 791 85. German PS, Klein LE, McPhee SJ, Smith CR. Knowledge of and compliance with drug regimens in the  
792 elderly. *J. Am. Geriatr. Soc.* 1982;30:568-571. <https://doi.org/10.1111/j.1532-5415.1982.tb05663.x>
- 793 86. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology.*  
794 2006;3:77-101. <https://doi.org/10.1191/1478088706qp063oa>
- 795 87. Boyce LE, Knight AT. Audit of General Practitioner Medication Lists for Older Patients at a Regional  
796 Hospital. *Journal of Pharmacy Practice & Research.* 2013;43:105.  
797 <https://doi.org/http://dx.doi.org/10.1185/1478088706qp063oa>
- 798 88. Van Blijswijk SCE, de Waard CS, van Peet PG, et al. Wishes and needs of community-dwelling older  
799 persons concerning general practice: A qualitative study. *PLoS One.* 2018;  
800 10.1371/journal.pone.0200614. <https://doi.org/10.1371/journal.pone.0200614>
- 801 89. Jung HP, Grol R, Wensing M, Baerveldt C, Olesen F. Patient characteristics as predictors of primary  
802 health care preferences: A systematic literature analysis. *Health Expect.* 2003;6:160-181.  
803 <https://doi.org/10.1046/j.1369-6513.2003.00221.x>
- 804 90. Stange D, Kriston L, von-Wolff A, Baehr M, Dartsch DC. Reducing cardiovascular medication  
805 complexity in a German university hospital: effects of a structured pharmaceutical management  
806 intervention on adherence. *J. Manag. Care Pharm.* 2013;19:396-407.  
807 <https://doi.org/10.18553/jmcp.2013.19.5.396>
- 808 91. Stewart M. Towards a global definition of patient centred care: the patient should be the judge of  
809 patient centred care,  
810 <http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds>  
811 [gao&AN=edsogl.71820692&authtype=sso&custid=deakin&site=eds-live&scope=site](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eds): British Medical  
812 Association; 2001.
- 813 92. APAC. *Guiding principles to achieve continuity in medication management*: Australian Pharmaceutical  
814 Advisory Council; 2005.  
815 <http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat>  
816 [00097a&AN=deakin.b2136517&authtype=sso&custid=deakin&site=eds-live&scope=site](http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat)  
817 [http://www.health.gov.au/internet/main/publishing.nsf/Content/4182D79CFCB23CA2CA25738E001B94C2/\\$File/guiding.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/4182D79CFCB23CA2CA25738E001B94C2/$File/guiding.pdf)
- 818 93. Manias E. Medication communication: a concept analysis. *J. Adv. Nurs.* 2010;66:933-943.  
819 <https://doi.org/10.1111/j.1365-2648.2009.05225.x>
- 820  
821

- 822 94. Liu W, Manias E, Gerdtz M. Understanding medication safety in healthcare settings: a critical review  
823 of conceptual models. Vol 182011:290-302.
- 824 95. Graham ID, Tetroe J, Group KTR. Some Theoretical Underpinnings of Knowledge Translation.  
825 2007;14:936-941. <https://doi.org/10.1111/j.1553-2712.2007.tb02369.x>
- 826 96. Elwyn G, Frosch D, Thomson R, et al. Shared Decision Making: A Model for Clinical Practice. *J. Gen.*  
827 *Intern. Med.* 2012;27:1361-1367. <https://doi.org/10.1007/s11606-012-2077-6>
- 828 97. Borrott N, Kinney S, Newall F, et al. Medication communication between nurses and doctors for  
829 paediatric acute care: An ethnographic study. *J. Clin. Nurs.* 2017;26:1978.  
830 <https://doi.org/10.1111/jocn.13606>
- 831