Table 1: References and key information measures used

<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
</table>
| 2011 | Avanzini et al.[1] | Article | Insulin | Standardised protocol | Intensive cardiac care unit to general ward | Not described | Percentage of blood glucose:  
  • Within a narrow range on the first, second and third days after ToC  
  • Within a wider range after meals on the first, second and third days after ToC  
  Percentage of hypoglycaemia episodes on the first, second and third days after ToC  
  Deaths  
  Rates of main non-lethal cardiovascular complications |
| 2011 | Nordenholz et al.[2] | Abstract | Anticoagulant | Clinical care pathway | Emergency department to primary care | A standardized electronic order set | Laboratory ordering practices  
  Readmission to an emergency department (ED)  
  Readmission with deep vein thrombosis (DVT) |
| 2011 | Reger et al.[3] | Article | Anticoagulant | Discharge pathway | Hospital to primary care | Patients identified by scanning computer-based reports. Data collection. | Percentage patients with pharmacist coordination documented  
  Pharmacist time spent per patient  
  Recurrent venous thromboembolism (VTE)  
  Major bleeding |
| 2011 | Schillig et al.[4] | Article | Anticoagulant | Pharmacist involvement | Hospital to primary care | Not described | Enrolment in anticoagulation clinic  
  Documented inpatient-to-outpatient provider contact  
  Documented inpatient provider-to-anticoagulation clinic communication  
  Patient follow-up with the anticoagulation clinic within five days of discharge  
  Composite of any INR over 5, any episode of major bleeding or development of new |

1 INR stands for international normalised ratio, a blood test used to determine response to vitamin K antagonists (for example warfarin).
<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
</table>
| 2011 | Stafford et al.[5] | Article            | Anticoagulant   | Pharmacist involvement         | Hospital to primary care | Not described               | Major bleeding events within 90 days of discharge  
|      |                  |                    |                |                                |                |                             | Thromboembolic events  
|      |                  |                    |                |                                |                |                             | Rates of death  
|      |                  |                    |                |                                |                |                             | Other adverse events (including minor bleeding)  
|      |                  |                    |                |                                |                |                             | Unplanned hospital readmissions  
|      |                  |                    |                |                                |                |                             | INR:  
|      |                  |                    |                |                                |                | Control at eight days post-discharge and to day 90  
|      |                  |                    |                |                                |                | Rates of INR over 4  
|      |                  |                    |                |                                |                | Rates of INR within, below or above the therapeutic range  
|      |                  |                    |                |                                |                | Rates of persistence with warfarin therapy |
| 2012 | Falana et al.[6] | Abstract           | Anticoagulant   | Pharmacist involvement         | Hospital to outpatient clinic | Not described               | Major or minor bleeding  
|      |                  |                    |                |                                |                |                             | Thromboembolic events  
|      |                  |                    |                |                                |                |                             | INR greater than 5  
|      |                  |                    |                |                                |                | Anticoagulation-related readmissions:  
|      |                  |                    |                |                                |                | Emergency department (ED) visit  
|      |                  |                    |                |                                |                | Readmission within 30 days of discharge  
|      |                  |                    |                |                                |                | Successful ToC to the next care provider at discharge. |
| 2013 | Martin III et al.[7] | Article            | High-risk medications | Pharmacist involvement         | Hospital to primary care | Pharmacy computer system produced a report identifying patients taking HRMs. | Percentage of discharge orders requiring resolution of:  
|      |                  |                    |                |                                |                | Medication safety recommendations  
<p>|      |                  |                    |                |                                |                | Inadequate warfarin follow-up arrangements |</p>
<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Falconieri et al.[8]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>TOC programme</td>
<td>Emergency Department to primary care</td>
<td>Not described</td>
<td>Follow up: Unintentional medication changes Rate of physician acceptance of the team’s clinical recommendations</td>
</tr>
<tr>
<td>2014</td>
<td>Martins et al.[9]</td>
<td>Abstract</td>
<td>Anticoagulant</td>
<td>Outpatient clinic to primary care</td>
<td>Outpatient clinic</td>
<td>Not described</td>
<td>Time in therapeutic range Thromboembolic events Number of bleeding events</td>
</tr>
<tr>
<td>2015</td>
<td>Padron et al.[10]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Anticoagulation stewardship program</td>
<td>Hospital to outpatient clinic</td>
<td>Not described</td>
<td>Clinics: Number of patients seen in clinic Percentage of patients with therapeutic, subtherapeutic or supratherapeutic INR at clinic appointment Appointment attendance Adverse events: Bleeding Thromboembolic events Readmissions to hospital or ED</td>
</tr>
<tr>
<td>2015</td>
<td>Dunn et al.[11]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Information pack</td>
<td>Hospital to outpatient clinic</td>
<td>Retrospective administrative database review. Electronic health record use not</td>
<td>Change in the frequency of obtaining an INR value within 10 days of discharge Percentage patients attaining a therapeutic INR level within 10 days of discharge</td>
</tr>
<tr>
<td>Year</td>
<td>Author and year</td>
<td>Article or abstract</td>
<td>Medication type</td>
<td>Intervention to improve safety</td>
<td>Care Transition</td>
<td>Electronic Health System Use</td>
<td>Measures used</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>-------------------------------</td>
<td>----------------</td>
<td>-------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2015</td>
<td>Quach et al.[12]</td>
<td>Abstract</td>
<td>High-risk medications</td>
<td>Medication reconciliation</td>
<td>Primacy care to the Emergency Department</td>
<td>Not described</td>
<td>Potential for errors discovered to cause patient harm or discomfort</td>
</tr>
<tr>
<td>2015</td>
<td>Yilmaz et al.[13]</td>
<td>Abstract</td>
<td>High-risk medications</td>
<td>Medications reconciliation and discharge counselling</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Adherence Rate of medication reconciliation discrepancies Readmission rates Patient satisfaction</td>
</tr>
<tr>
<td>2016</td>
<td>Ha et al.[14]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Standardised protocol</td>
<td>Hospital to primary care</td>
<td>Patient with medication interactions were identified retrospectively using electronic health record. Standardised data extraction form developed.</td>
<td>Time in therapeutic range Rates of the following during the time of interaction or within 30 days of antimicrobial discontinuation: - Thromboembolic events - Major bleeding events Documentation rates of significant antimicrobial-warfarin interactions</td>
</tr>
<tr>
<td>2017</td>
<td>Bryant et al.[15]</td>
<td>Abstract</td>
<td>Anticoagulant</td>
<td>Pharmacist involvement</td>
<td>Emergency department to primary care</td>
<td>Not described</td>
<td>Percentage of patients who received appropriate anticoagulation at time of discharge Number of patients with a pharmacist intervention Rates of patient education provided prior to discharge Time to outpatient follow-up</td>
</tr>
<tr>
<td>Year</td>
<td>Author and year</td>
<td>Article or abstract</td>
<td>Medication type</td>
<td>Intervention to improve safety</td>
<td>Care Transition</td>
<td>Electronic Health System Use</td>
<td>Measures used</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
<td>---------------------</td>
<td>-----------------</td>
<td>-------------------------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| 2017 | Castelli et al.[16] | Article | Anticoagulant | Information pack for patients | Hospital to primary care | A daily report generated to identify patients diagnosed with VTE prescribed rivaroxaban. | Percentage of patients who:  
  - Transitioned to rivaroxaban 20 mg daily on day 22  
  - Had greater than 90% adherence  
  - Stopped rivaroxaban for any reason  
Adherence  
Patient understanding of correct dose and timing of medication  
Overall satisfaction (patient)  
Rates of:  
  - Minor bleeds  
  - Events that required contacting physician or visiting an emergency department  
  - Recurrent VTE  
  - Death |
| 2017 | Chamoun et al.[17] | Article | Anticoagulant | Standardised protocol | Hospital to primary care | A report was generated from a patient database, and data collected from electronic healthcare records. | Bleeding:  
  - Rates of bleeding events  
  - INR on day bleeding occurred  
  - Severity of bleeding event  
  - Total number  
INR:  
  - Composite of changes by 0.5 or more per day or INR greater than 4 during inpatient stay and follow up  
Percentage of patients achieving a therapeutic stable INR by day 7 and by day 14 |
| 2017 | Wei et al.[18] | Article | Insulin | Remote glucose monitoring | Hospital to primary care | Remote monitoring of glycaemic control using a web-based communication portal. | Mean blood glucose level  
Exploratory outcomes of hypoglycaemia/hyperglycaemia  
Insulin titration frequency |
<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Zdyb et al.[19]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Counselling and education</td>
<td>Emergency department to primary care</td>
<td>Electronic health record used to identify patients requiring interventions. Standardised electronic form for documentation.</td>
<td>Appropriateness of medication dosing Rates of prescription collection If patient had contacted or seen their primary care provider Documented readmission or representation to a hospital within 90 days potentially related to anticoagulation</td>
</tr>
<tr>
<td>2018</td>
<td>Herges et al.[20]</td>
<td>Article</td>
<td>High-risk medications</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Electronic health record used to calculate risk of patient death or unplanned readmission. Used to calculate percentage of drug therapy problems and medication discrepancies metrics.</td>
<td>Readmission risk at 30, 60 and 180 days Number of drug therapy problem recommendations for all medications and HRMs Percentage of recommendations that were acted on by the clinician within 7 days Number of medication discrepancies for all medications and for HRMs</td>
</tr>
<tr>
<td>2019</td>
<td>Dempsey et al.[21]</td>
<td>Abstract</td>
<td>High-risk medications</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Average number of medication discrepancies per patient Number of medication access issues resolved 30-day medication related hospital readmissions</td>
</tr>
<tr>
<td>2019</td>
<td>Pyrlis et al.[22]</td>
<td>Article</td>
<td>Insulin</td>
<td>Transition diabetes team</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Hospital readmissions and emergency department presentations Patient satisfaction Change in HbA1c</td>
</tr>
<tr>
<td>2020</td>
<td>Kapoor et al.[23]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Nurse reviewed medication list and provided an up-to-date colour version with instructions to the patient by mail.</td>
<td>Quality of care transition using Coleman et al.'s Care Transition Measure (CTM) Patient knowledge regarding anticoagulation, interactions, risks, signs, and symptoms to report to prescriber Anticoagulant beliefs</td>
</tr>
<tr>
<td>Year</td>
<td>Author and year</td>
<td>Article or abstract</td>
<td>Medication type</td>
<td>Intervention to improve safety</td>
<td>Care Transition</td>
<td>Electronic Health System Use</td>
<td>Measures used</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------------------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2020</td>
<td>Liang et al.[24]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Proportions of time within the target INR range during follow-up period. Proportions of time within the expanded target range during follow-up period. Time spent outside the critical INR range (≤1.5 or ≥ 5.0). Adverse events: Bleeding, Recurrent thrombosis, Death. Readmission. Warfarin-related knowledge level.</td>
</tr>
<tr>
<td>2020</td>
<td>Tyedin et al.[26]</td>
<td>Article</td>
<td>Anticoagulant</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Electronic health record used by pharmacists to chart and monitor warfarin. Electronic health records used for data collection.</td>
<td>Proportion of patients: With an INR greater than 5.0, Readmitted relating to anticoagulation, With a complete warfarin dose plan at discharge, With warfarin related errors during admission.</td>
</tr>
<tr>
<td>Year</td>
<td>Author and Year</td>
<td>Article or Abstract</td>
<td>Medication Type</td>
<td>Intervention to Improve Safety</td>
<td>Care Transition</td>
<td>Electronic Health System Use</td>
<td>Measures Used</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
<td>--------------------</td>
<td>----------------</td>
<td>--------------------------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| 2021 | Bakey et al. [28] | Article            | Anticoagulant   | Pharmacist involvement         | Emergency department to primary care | EHS used to identify eligible patients and document pharmacist recommendations. | Rates of issues relating to care components:  
  - Anticoagulation medication errors at discharge  
  - Patient counselling on anticoagulation  
  - Anticoagulation prescription at discharge  
  Adverse events:  
  - ED or hospital admission for bleeding within 30 days  
  - ED or hospital admission for VTE within 30 days |
| 2021 | Bawazeer et al. [29] | Abstract           | High-risk medications | Medication Reconciliation, counselling and follow up | Hospital to primary care | EHS used to identify patients on insulin and/or warfarin and for data collection | Adverse events:  
  - Readmission rate within 30 days of discharge  
  - Time to first unplanned health care utilization  
  Time to the first outpatient clinic visit  
  Disease-specific parameters (glycosylated haemoglobin (HbA1C) and INR)  
  Number of medication-related problems identified during the reconciliation stage  
  Patient satisfaction with the service |
| 2021 | DeSancho et al. [30] | Journal             | Anticoagulant   | Counselling and education      | Hospital to primary care | Not described | Scheduled follow up appointment  
  Re-admission rates  
  Adverse events:  
  - Recurrent thrombosis  
  - Bleeding events  
  Adherence  
  Anticoagulant recall errors:  
  - Dose  
  - Dose frequency |
<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>Gurwitz et al.[31]</td>
<td>Article</td>
<td>High-risk medications</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Communication with primary care team through the EHS relating to medication safety. Data collection.</td>
<td>Number of adverse drug-related incidents Clinically important medication errors</td>
</tr>
<tr>
<td>2021</td>
<td>Kane-Gill et al.[32]</td>
<td>Article</td>
<td>High-risk medications</td>
<td>Pharmacist involvement</td>
<td>Primary care to nursing home</td>
<td>Electronic clinical surveillance system highlighting medication risks.</td>
<td>Patient care recommendations evaluated by degree of harm prevented</td>
</tr>
<tr>
<td>2021</td>
<td>Magny-Normilus et al.[33]</td>
<td>Article</td>
<td>Insulin</td>
<td>Discharge intervention</td>
<td>Hospital to primary care</td>
<td>Patients identified by scanning EHS reports. Data collected using hospital's clinical data repository.</td>
<td>Adherence Monitoring:</td>
</tr>
<tr>
<td>2021</td>
<td>Zabrosky et al.[34]</td>
<td>Abstract</td>
<td>High-risk medications</td>
<td>Standardised protocols for ToC</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Rate of referral to outpatient follow-up Readmissions Successful TOC protocol completion where evaluation/performing and documentation of following documented:</td>
</tr>
</tbody>
</table>

- Baseline laboratory values
- Therapeutic drug monitoring
- Intravenous access
- Drug-drug interactions
- Medication availability
- Patient counselling on medications
- Pharmacist documentation in discharge
<table>
<thead>
<tr>
<th>Year</th>
<th>Author and year</th>
<th>Article or abstract</th>
<th>Medication type</th>
<th>Intervention to improve safety</th>
<th>Care Transition</th>
<th>Electronic Health System Use</th>
<th>Measures used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>Lázaro Cebas et al.[35]</td>
<td>Article</td>
<td>High-risk medications</td>
<td>Pharmacist involvement</td>
<td>Hospital to primary care</td>
<td>Not described</td>
<td>Readmissions: Cost of intervention</td>
</tr>
</tbody>
</table>

Pharmacist time
Rate of inappropriate protocol initiation
References:


