AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

National Subcutaneous Insulin Form Pilot

Expressions of interest invited

The Australian Commission on Safety and Quality in Health Care (the Commission) invites expressions of interest from Australian hospitals wishing to participate in a national pilot of a draft *Subcutaneous Insulin Form*.

Why is the Commission piloting a *Subcutaneous Insulin Form*?

Diabetes in hospitalised patients is common and insulin is frequently prescribed. There is a need to ensure the safe and effective prescribing, administering and monitoring of medications for diabetes, particularly insulin.

Diabetes management in acute care is often sub-optimal, with problems such as poor glycaemic control, inadequate glucose monitoring and hypoglycaemia occurring commonly. Poor diabetes management compromises both the resolution of the diabetic patient's intercurrent illness as well as their ongoing diabetic status.

Prescribing of insulin is complex and not without risk. Insulin is regarded as a high risk drug accounting for around 15% of the highest risk incidents (actual and potential) experienced in acute care.

The Commission is piloting a nationally standardised *Subcutaneous Insulin Form* and associated materials to improve patient safety and to support better diabetes management by ensuring that blood glucose levels are available at the point of prescribing.

Is your hospital able to participate in the *National Subcutaneous Insulin Form Pilot*?

To be eligible, your hospital will:

1. Be an acute care facility
2. Have senior management support for the pilot
3. Have senior clinician involvement and support for the pilot
4. Have an endocrinologist or general physician on staff (may be waived for smaller facilities)
5. Pilot the draft *Subcutaneous Insulin Form* and associated materials throughout all clinical areas of the facility except paediatric wards for a period of at least six months
6. Nominate a project coordinator (preferably a diabetes educator) to manage:
    a. involvement with the pilot
    b. distributing educational and other pilot materials
    c. educating staff on use of the draft *Subcutaneous Insulin Form*
    d. pre and post-implementation auditing
    e. completion of an implementation experience survey
    f. communication with the Commission and local clinicians.

Paediatric wards and hospitals are not eligible to participate.

Hospitals may need to obtain approval to conduct the pilot as a quality improvement acitivity.

The Commission will select a representative range of hospitals and other facilities to participate in the pilot including tertiary referral hospitals, regional/district and metropolitan hospitals, rural hospitals, specialty hospitals and private hospitals.

What is the pilot intervention required?

1. A baseline audit of insulin ordering and documentation on the participating hospital's *National Inpatient Medication Chart* (or local insulin form) and BGL monitoring form
2. Education of medical, nursing and pharmacy staff on the draft *Subcutaneous Insulin Form*
3. Introduction of the *Subcutaneous Insulin Form* across the hospital.
4. A post-implementation audit six months after commencing implementation.

The form will be implemented throughout all wards and units of the hospital. Implementation across the hospital ensures consistency and means that the form does not inadvertently appear in units or wards that have not received education on how to use the form.

Hospitals may wish to conduct a third audit at 12 months (or longer) or to coincide with national auditing.

Implementation experience survey

Feedback will be sought from pilot hospital project coordinators and others involved in the pilot on results, barriers, issues, other reflections on the pilot and its conduct and implications for national implementation of a *Subcutaneous Insulin Form*.

Issues register

A *Pilot Issues Register* will be established for sites to report issues (including adverse events resulting from use of the *Subcutaneous Insulin Form*) and suggest improvements.

The register will be reviewed and used to inform recommendations for change to the form or the associated implementation resources.

What is the pilot timing?

Hospitals will commence preparations for piloting when their involvement is approved. This will include completing the baseline audit, preparing for implementation and educating staff on use of the *Subcutaneous Insulin Form***.**

Post-implementation auditing will occur six months after implementation. This must be completed by the end of May 2013.

What project support will the Commission provide?

The Commission will provide artwork (design files) for the draft *Subcutaneous Insulin Form* and support materials, including educational resources and an audit tool. There will be a dedicated project officer at the Commission. Training via teleconference/webinar will be provided for hospital pilot coordinators at the beginning of the pilot and at regular intervals over the course of the pilot. A report will be provided to hospitals on the results of the pilot.

How do I submit an expression of interest?

Complete the *Subcutaneous Insulin Form Pilot Expression of Interest* (EOI) form available from the Commission website at www.safetyandquality.gov.au/our-work/medication-safety/medication-chart/national-subcutaneous-insulin-chart/ Enquiries and completed expressions of interest forms should be sent to mail@safetyandquality.gov.au

Closing date for submitting EOI forms is **30 September 2012.**

Project aim

The primary aim of the *National Subcutaneous Insulin Form Pilot* is to improve the safety of insulin prescribing and administering for adults in acute care without compromising glycaemic control. Improving in-hospital glycaemic control is a secondary outcome which will be explored.

Project objective

The objective of the pilot is to test the hypothesis that the use of a standard form for subcutaneous administration of insulin, when combined with planned implementation and education, can:

1. Reduce the opportunities for error in subcutaneous insulin prescribing and administration documentation; and
2. Not result in inferior blood glucose level control.

Evaluation

The intervention will be evaluated by auditing for indices to measure opportunities for errors in prescribing and administration of insulin.

While the pilot is unlikely to be sufficiently powered to demonstrate improvements in BGL control, the effect of the form's safety features on BGL control will be examined.

Measures of inpatient glucose control

There is no gold standard for objective measures of inpatient glucose control. This project proposes using the following ranges:

- Less than 2.5 mmol/L — Severe hypoglycaemia
- Less than 4 mmol/L — Hypoglycaemia
- 4 to 12 mmol/L — Acceptable
- Greater than 20 mmol/L — Hyperglycaemia

Hospital audits

Each hospital will conduct two audits:

1. A pre-implementation (baseline) audit if insulin prescribing and documentation using the *National Inpatient Medication Chart* or local hospital insulin form. This must be completed before education of staff has commenced
2. Post-implementation audit at 6 months after implementation.

Hospitals may wish to undertake a third audit at 12 months (or longer) or to coincide with national auditing (and the timing of which will be announced at the same time as the form is made available for national implementation).

Audit parameters

1. Parameters to measure opportunities for and actual errors in prescribing and administration of insulin will include:
    - Clarity of order
    - Dose, frequency unclear, incorrect or missing
    - Use of unapproved abbreviations
    - Completeness of administration documentation

- Incorrect insulin doses administered
- Scheduled doses not administered
- Evidence that hypoglycaemia is treated and hyperglycaemia is managed, and
- Type of insulin regimen prescribed.

2. BGL control measures
    - Percentage of patient days with BGLs in acceptable range (4.0 to 12.0 mmol/L)
    - Percentage of patient days with at least one BGL <2.5 mmol/L
    - Percentage of patient days with at least one BGL < 4.0 mmol/L
    - Percentage of patient days with at least one BGL > 20.0 mmol/L

Data collection

Sample

Sample selection will be a random sample of inpatients with an insulin form over a one month period. Minimum requirements will be negotiated and agreed with individual hospitals and depend on expected number of eligible patients.

The pilot is testing the form as an insulin ordering device so all audits should be of forms that have been used for subcutaneous insulin ordering and not only for monitoring blood glucose level.

Method

Review of medication charts and medical records should be conducted by two clinicians, the trained project officer and a registered nurse, pharmacist or medical officer. It is desirable that the main auditor is a diabetes educator with previous experience in safety and quality audits.

The pre-implementation audit must be completed before the education program is provided.

The post-implementation audits should be identical to the pre-implementation in the number of forms and wards. Wherever possible, the same team should complete all audits.

Data will be collected on the data collection forms provided by the Commission.

Analysis of data

Data will be analysed for effectiveness of its safety features in reducing opportunities for error in prescribing and administration of insulin.

Blood glucose control will be determined using a modified ‘Glucometrics’ scale.The percentage of patient days with mean BGLs in acceptable range, as well as percentage of patient days where there was any hypoglycaemic event (BGL < 4.0 mmol/L), severe hypoglycaemic event (BGL < 2.5 mmol/L) or any hyperglycaemic event (BGL > 20.0 mmol/L) will be determined.

Data will be analysed by the Commission and a report produced with recommendations. Hospitals will be provided with feedback on their own data as well as consolidated data.