An evaluation of practicalities and options available for delivering the self-administration of insulin agenda: Action beyond the NPSA

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Background: Insulin is cited as one of the medicines most commonly associated with incidents leading to severe harm or death[1]. An analysis of insulin reports by National Reporting and Learning System (NRLS) showed that 61% of errors occurred during administration. Incorrect dosing, omission and delay were commonly reported from an inpatient environment where insulin is administered by health care staff[2].
Following NPSA guidance the Trust introduced a self-administration policy for insulin. The 'current insulin vial, pen or cartridge must be stored in a locked receptacle approved by pharmacy, which only contains insulin for that patient, to which the patient holds the key'. This presents significant barriers to implementation, as throughout the trust there are various different patient lockers styles in use, and many do not fit the specific policy requirements. Where individual lockers are not available, medicines including insulin will be stored in a locked cabinet or medicines trolley accessed by nursing staff. This presents other risks to the patients including picking errors and delayed doses.

Objectives Undertake a risk assessment & options appraisal for available medication storage options for self-administration of insulin

Method The incident reporting system (DATIX) was reviewed for all reported insulin incidents within the Trust for the period of 1 year
A set of criteria that must be assessed when choosing an appropriate storage solution were defined:
- Security: portability, type of lock
- Infection control: easy to clean with standard procedures
- Suitable for use in all areas
- Nurse accessibility: available at all bed spaces, portable product that can be stored on ward in easily accessible area
- Patient accessibility: poor mobility, neuropathy, poor sight

A review of the NHS supplies catalogues was manually reviewed in July 2014 to identify medication storage options. An internet based search was undertaken during the same time period , using search terms medication lockers, self-administration lockers, medication storage, secure personal storage.

Datix reports July 2013- June 2014 : Total number of inpatient insulin incidents (includes IV)	51	% of total
Omitted sc doses	10	20
Delayed sc doses	0	0
Patient self-administered correct dose but prescription wrong	2	4
Preventable if patient had been self-administering (assumes patient capable)	20	40
Duplication of dose (nurse administration and self-administration)	2	4
Patient self-administered wrong dose / insulin	4	8
Unintended administration (wrong patient)	0	0
Misappropriation of insulin	0	0

Options Appraisal Summary	Security			Nurse accessibility		Patient accessibility
Storage option	Ward secure	Lockable	Infection control	All bedsides	Easy storage	Close to bedside
Locker	√	√	√	√	√	√
Extra locker	√	√	√	√	√	√
Cabinet	√	x	√	√	x	√
Cashier box	x	√	√	x	√	√
Locked bag	x	√	x	x	√	√
Patient retains	x	x	√	√	√	√
Medical box	√	√	√	x	√	√
Drug return box	√	√	√	√	√	√
Plastic unit	√	√	√	√	√	√
Ward trolley	√	√	√	x	√	x

Discussion 43% of errors could be prevented if the patient was self-administering their insulin. There are no incidents of misappropriation of insulin or administration to the wrong patient. Patient access to their own insulin resulted in 6 incidents. It is not clear whether these patients had been assessed to self-administer their own insulin.
The commercially available products were either unsuitable or too expensive. A previous pilot with engaged staff, demonstrated a failure to allocate the storage facilities appropriately. There is not an ideal storage solution and there are no reported incidents we must consider, is it reasonable to accept the risks associated with insulin not being locked away.

Conclusion On review of the incidents and options appraisal the decision has been agreed to allow patients to maintain possession of their insulin. The trust policy is to be reviewed and individual wards are to undertake local risk assessments

References
National patient Safety Agency (NPSA) publishes 'safety in doses: medication safety incidents in the NHS' (2007).
National Reporting and Learning service between 2003 and 2009. http://www.nrls.nhs.uk/alerts/?entryid45=74287
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