



Topic Exploration Report

This report summarises the existing evidence on the technology of interest in this Bevan exemplar application.

Topic:	Connecting SMART Infusion Pumps to meet the WHO challenge
Topic exploration report number:	TER140

Aim of Search

Cedar researcher, on behalf of Health Technology Wales, searched for evidence on the use of SMART Infusion Pumps for improved drug infusion practice.

Summary of Findings

No guidance published by NICE, Healthcare Improvement Scotland, Guidelines International Network or the Cochrane Collaboration exists on SMART Infusion Pumps for improved drug infusion practice.

The literature search identified one systematic review by Ohashi et al. (2014) and one Rapid Response Report from the Canadian Agency for Drugs and Technologies in Health (CADTH 2014).

The systematic review reported results from 22 studies. However, only one study was a randomised controlled trial (RCT). The CADTH Report included one systematic review and 6 non-randomised studies. Some of the evidence is present in both sources.

The search did not identify any new RCTs published after 2014. A literature search for other low-quality evidence was not conducted.

No ongoing trials on SMART Infusion Pumps for improved drug infusion practice were found.

Key Sources of Evidence

CADTH. (2014). Smart Infusion Pump use in Hospitalized Patients: Clinical Safety and Guidelines. Online: Canadian Agency for Drugs and Technologies in Health. Available at: <https://www.cadth.ca/sites/default/files/pdf/htis/feb-2014/RB0640%20Smart%20Pumps%20Final.pdf> [Accessed 05.08.2019].

Ohashi K, Dalleur O, Dykes PC, et al. (2014). Benefits and risks of using smart pumps to reduce medication error rates: a systematic review. *Drug safety*. 37(12): 1011-20.

Areas of Uncertainty

There are uncertainties associated with the requirements for staff training, time needed to update and maintain the drug libraries and overriding existing safety alerts. Furthermore, the outcome measures are not standardised across the studies which can affect the comparison of quantitative data.

Brief literature search results

Resource	Results
UK guidelines and guidance	
Healthcare Improvement Scotland	We did not identify any relevant information from this source.
NICE	We did not identify any relevant information from this source.
Guidelines International Network	We did not identify any relevant information from this source.
Additional Sources	CADTH. (2014). Smart Infusion Pump use in Hospitalized Patients: Clinical Safety and Guidelines. Online: Canadian Agency for Drugs and Technologies in Health. Available at: https://www.cadth.ca/sites/default/files/pdf/htis/feb-2014/RB0640%20Smart%20Pumps%20Final.pdf [Accessed 05.08.2019].
Secondary literature and economic evaluations	
ECRI	We did not identify any relevant information from this source.
Cochrane library	We did not identify any relevant information from this source.
Medline	Ohashi K, Dalleur O, Dykes PC, et al. (2014). Benefits and risks of using smart pumps to reduce medication error rates: a systematic review. Drug safety. 37(12): 1011-20.
Primary studies	
Medline	We did not identify any relevant information from this source.
Cochrane library	We did not identify any relevant information from this source.
Ongoing secondary research	
Clinicaltrials.gov	We did not identify any ongoing clinical trials.
Date of search:	05 August 2019
Concepts used:	Smart pump; smart pumps