IMPROVING THE SAFETY OF POTASSIUM

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Who Flagship Area : High-Risk Medicines

Potassium is a high risk medicine.
Potassium can cause catastrophic harm when administered in error and has been implicated in deaths both nationally and internationally.
Potassium ampoules were available in areas outside critical care within the Tasmanian Health Service (THS).

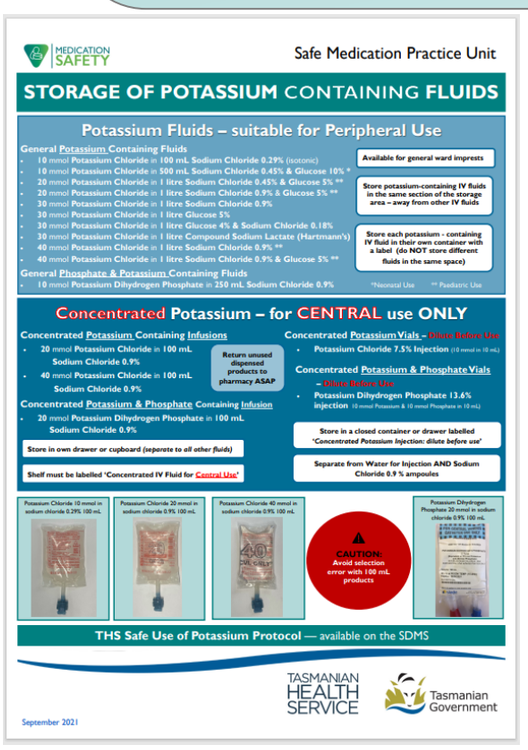
Aim of this project was to reduce the use of potassium ampoules and remove the requirement for potassium ampoules to be utilised outside critical care areas.

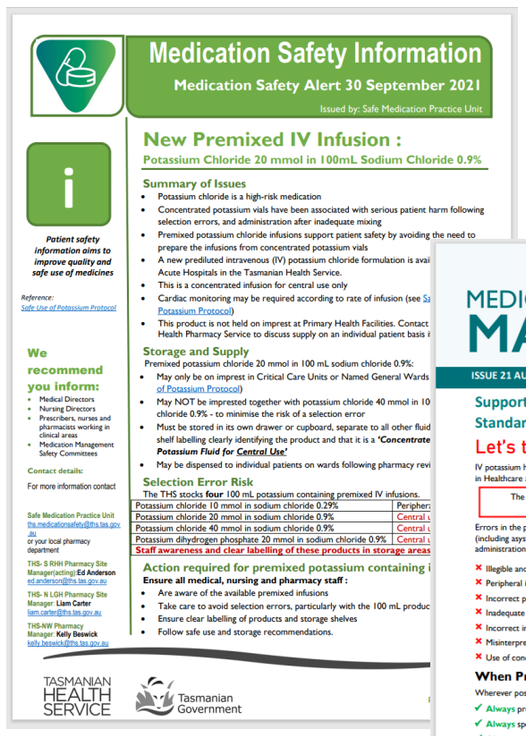
Stakeholder consultation highlighted use of potassium ampoules in non-critical areas stemmed from lack of suitable premix alternatives. Formulary changes led to the addition of potassium chloride 20 mmol/100 mL bags, potassium dihydrogen phosphate bags 20 mmol/100 mL and 10 mmol/250 mL. Potassium chloride 10 mmol/100 mL and 40 mmol/100 mL were already in use.

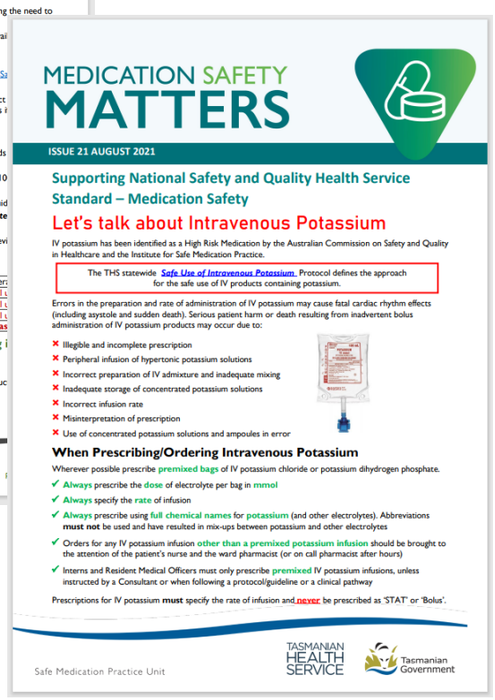
Methods included imprest reviews with the removal of potassium ampoules from all non-authorised areas. To reduce the risk of selection error, specific premix strengths were allocated to clinical areas and imprest restrictions were imposed – potassium chloride 20 mmol/100 mL could not be co-imprested with potassium chloride 40 mmol/100 mL bags. Other premix strengths were available via individual patient dispensing.

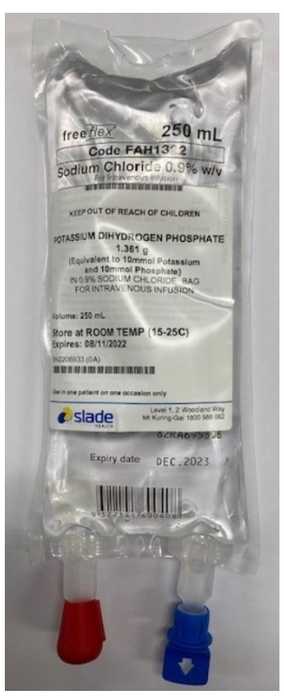
Development of a statewide protocol provided necessary governance for the changes and supported the rationalisation of standard potassium dilutions.

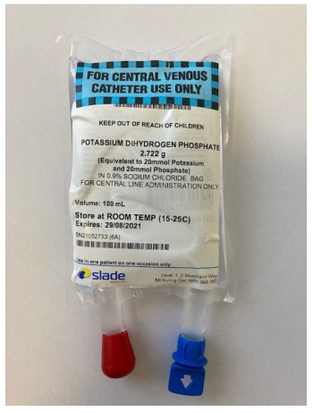
Resources including alerts, newsletters, lanyard and wall charts regarding the correct administration and storage of IV potassium products were distributed and showcased on the THS medication safety webpage. Ongoing education was offered at ward level and within THS pharmacies. Training modules were developed for all clinical staff. The module is mandatory for THS pharmacy staff including stores staff and pharmacy technicians. Regular audit of supply of concentrated vials of potassium is reported to Medication Management Safety Committees.

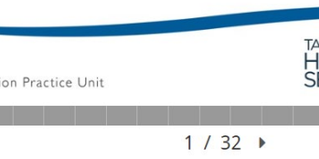


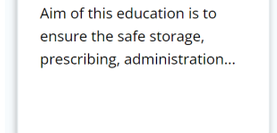


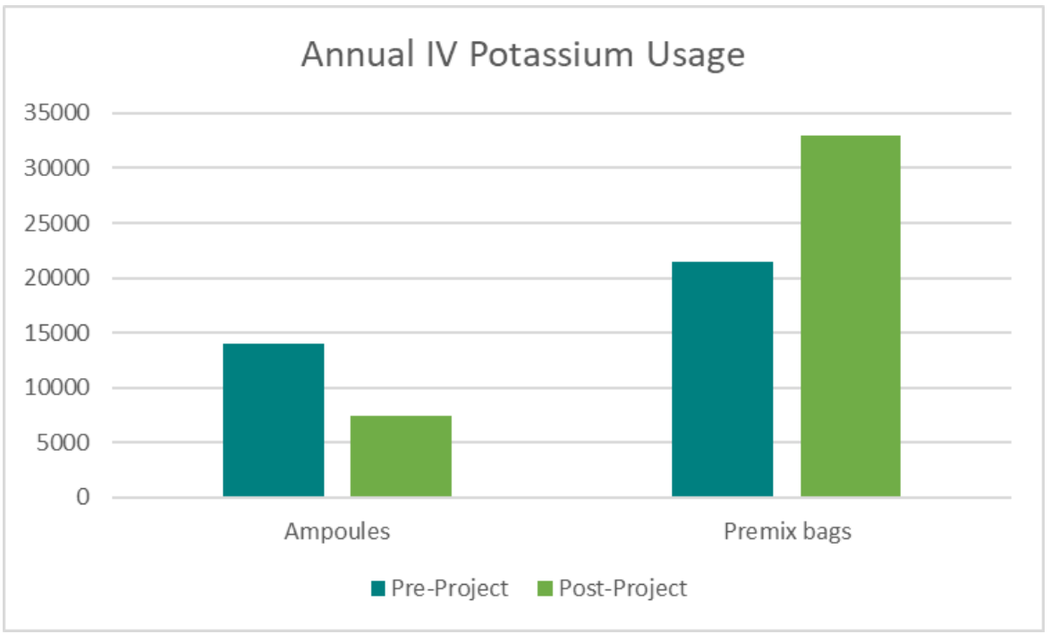












Note: Usage includes ampoules supplied to critical care and to manufacture parenteral nutrition.

Evaluation of usage has shown significant reduction, 45% initially and 47% on re-audit 12 months after implementation, in the use of potassium ampoules. There has been a corresponding increase in the use of the equivalent premix bag alternatives.

Discussion The establishment of the statewide Safe Medication Practice Unit (SMPU) provided resources for a multipronged approach to remove potassium ampoules from all clinical areas outside critical care. Providing suitable alternatives was key to the success.
The SMPU collaborated with the statewide pharmacy service in South Australia to standardise the formulation, labelling and packaging of the pre-mix potassium dihydrogen phosphate bags.

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