

REDUCING MERP D INSULIN RELATED MEDICATION ERRORS BY 50% IN KTPH

Tan H.Y.^{1,3}, Nieh C.M.^{2,3}, Wee H.C.³, Ng S.F.J.³, Ram K.S.³, Chan Z.Q.³, Tan S.K.³,
Tay H.C.³, Soh W.K.³, Li C.³, Aliwarga F.³
¹Acute & Emergency Care, ²Geriatric Medicine, ³Medication Safety Committee KTPH

Aim

To reduce MERP Category D Insulin Medication Errors by 50% over 3 years at Khoo Teck Puat Hospital (KTPH)

Background

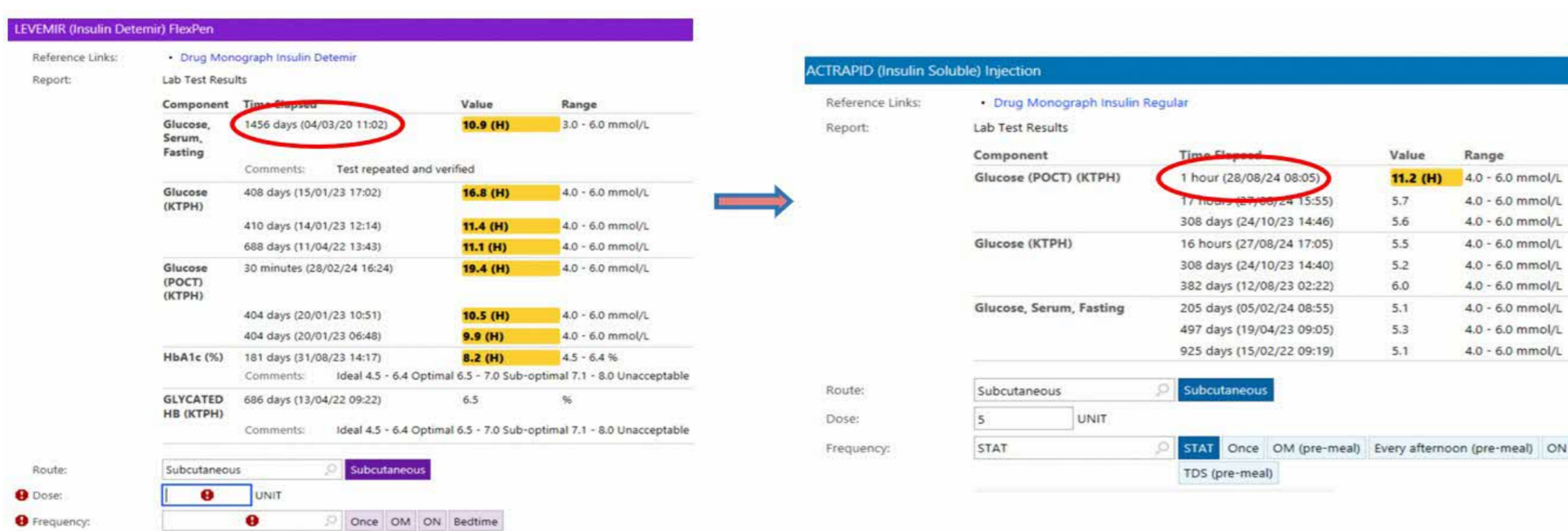
- YH Medication Safety Committee noted an uptrend in number of insulin related medication errors in 2020-2021.
- MERP Category D (errors where harm reached the patient and required monitoring and intervention) and above accounted for 43.6% of these errors, for which 47.1% of them are classified as Serious Reportable Events (SREs).
- Hence the initiative to improve medication and patient safety and clinical outcomes given the significant risks it poses to patients.

Team Members

Name	Designation	Department
Tan Hann Yee	Consultant	Acute & Emergency Care
Nieh Chih Ming	Senior Consultant	Geriatric Medicine
Wee Hui Chia	Senior Consultant	General Medicine
Jenny Ng Siew Fong	Senior Nurse Manager	Nursing Administration
Sumalatha Ram Kumar	Nurse Clinician	KTPH Ward
Chan Zhi Qiang	Nurse Clinician	KTPH Ward
Tan Sok Keng	Senior Nurse Clinician	Acute & Emergency Care
Tay Hooi Ching	Principal Clinical Pharmacist	Pharmacy
Soh Wee Kian	Senior Pharmacist	Pharmacy
Tan Sok Keng	Senior Nurse Clinician	Acute & Emergency Care
Chloe Li	Senior Executive	CQPV
Fransiska Aliwarga	Manager	Clinical Informatics

Interventions / Implementation

- Initiation of Hyperkalaemia Kit by Woodlands Health
- Improve interface of displaying blood glucose monitoring (BGM) records on EPIC
 - Previously when insulin is ordered, BGM results reflected in EPIC were not chronological which led to confusion amongst doctors when titrating insulin
- Set up Admin-Too-Close best practice advisory (BPA) prompt when Actrapid is served within 2 hours of previous administration

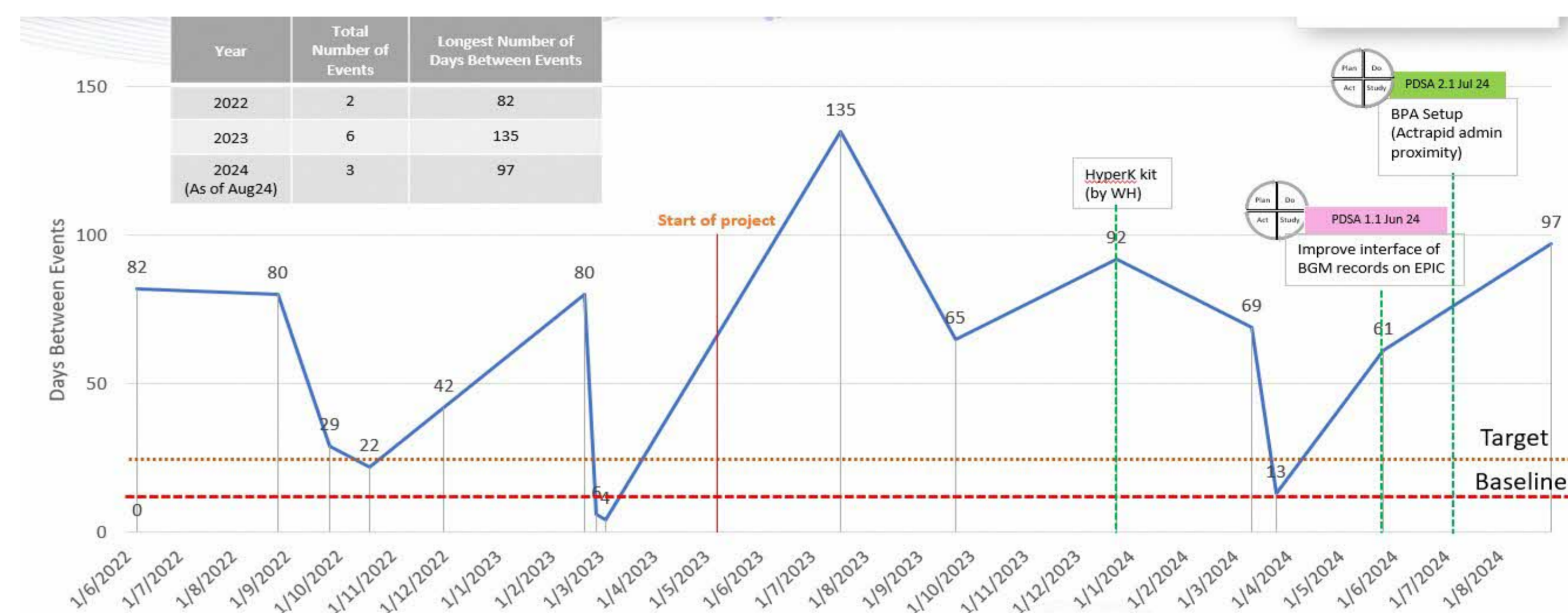


Onward 2026

- Reducing medication error rates prevents medication-related mortality and morbidity, improving overall health outcomes which lead to better patient satisfaction rates.
- Multidisciplinary teams collaboration to avoid medication errors improve overall patient care, improves accuracy of prescriptions and clinical decision-making skills hence reducing chances of cross disciplinary errors.
- Reducing medication error rate helps avoid prolonged hospital stays (usually from complications requiring additional medical interventions), which can be costly for both hospital and patients.

Results & Outcomes

- Longest number of days between events improved significantly from 82 days in 2022 to 135 days in 2023
- As of August 2024, longest number of days between events: 97 days
- Total number of MERP D and above insulin related medication errors downtrended from 7 (2022) to 6 (2023) and 3 (as of August 2024)
- Zero MERP F to I insulin related medication errors from 2023 to August 2024



Conclusion

- Results of this project focused on reducing insulin related medication errors appear promising.
- Initiative and implementation are ongoing and as new measures are implemented, we aim to further reduce insulin related medication errors in KTPH.