Growing Digitally – The Impact of a Digital Health Record on Medication Incident Reporting

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Background and Aim

Electronic medication management systems can reduce the risk of preventable medication related harm. However, there is a risk of introducing new areas for harm with the implementation of a new system. In 2022 a complete Digital Health Record (DHR) was implemented at our 265 bed Public Hospital. Actual and near miss medication incidents are self reported in our incident management system. The aim of this poster is to review the impact of a DHR implementation on the numbers and types of medication incidents reported.

Methods

Medication related incidents reported for a 6 month period pre and post DHR implementation were reviewed (Figure 1). Incidents were analysed and compared including the number, location, severity and the types of incidents.

Figure 1- Number of medication related incidents reported

Figure 2 - Severity of reported medication incidents

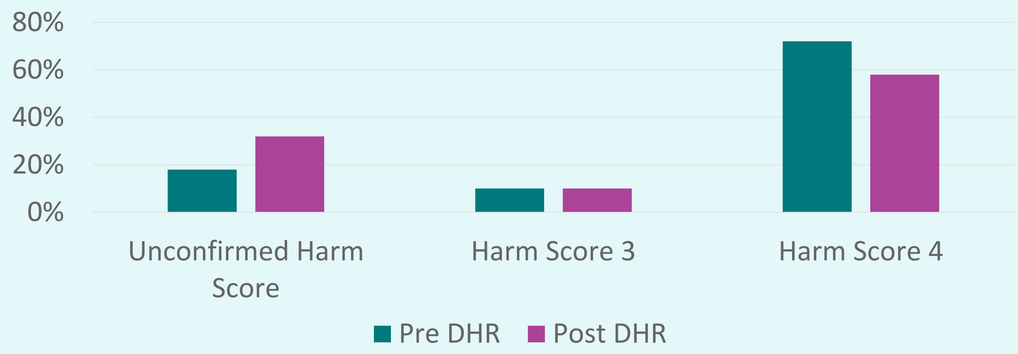


Figure 3 – Location of reported medication incidents

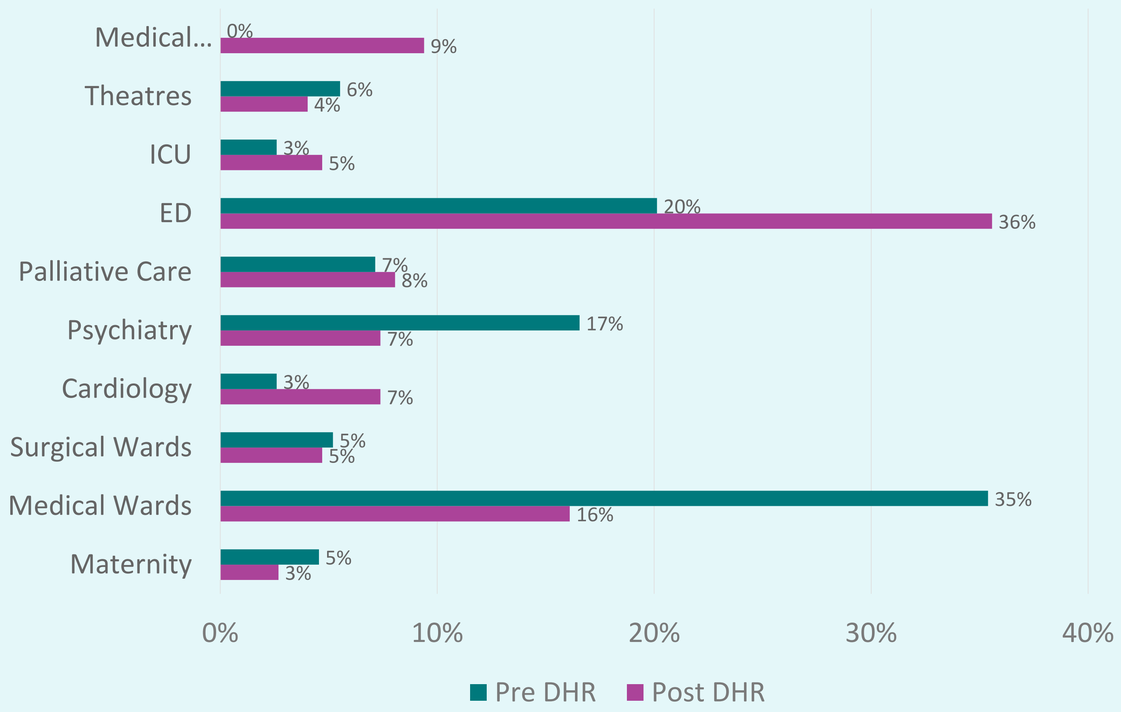


Figure 4 – Types of medication incidents reported

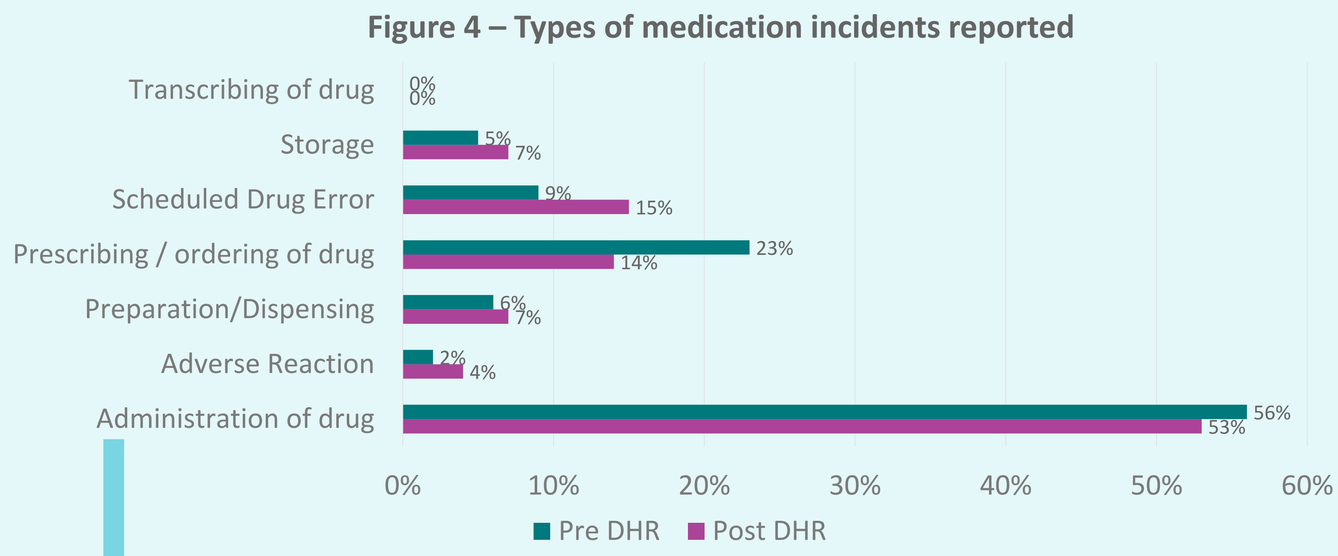
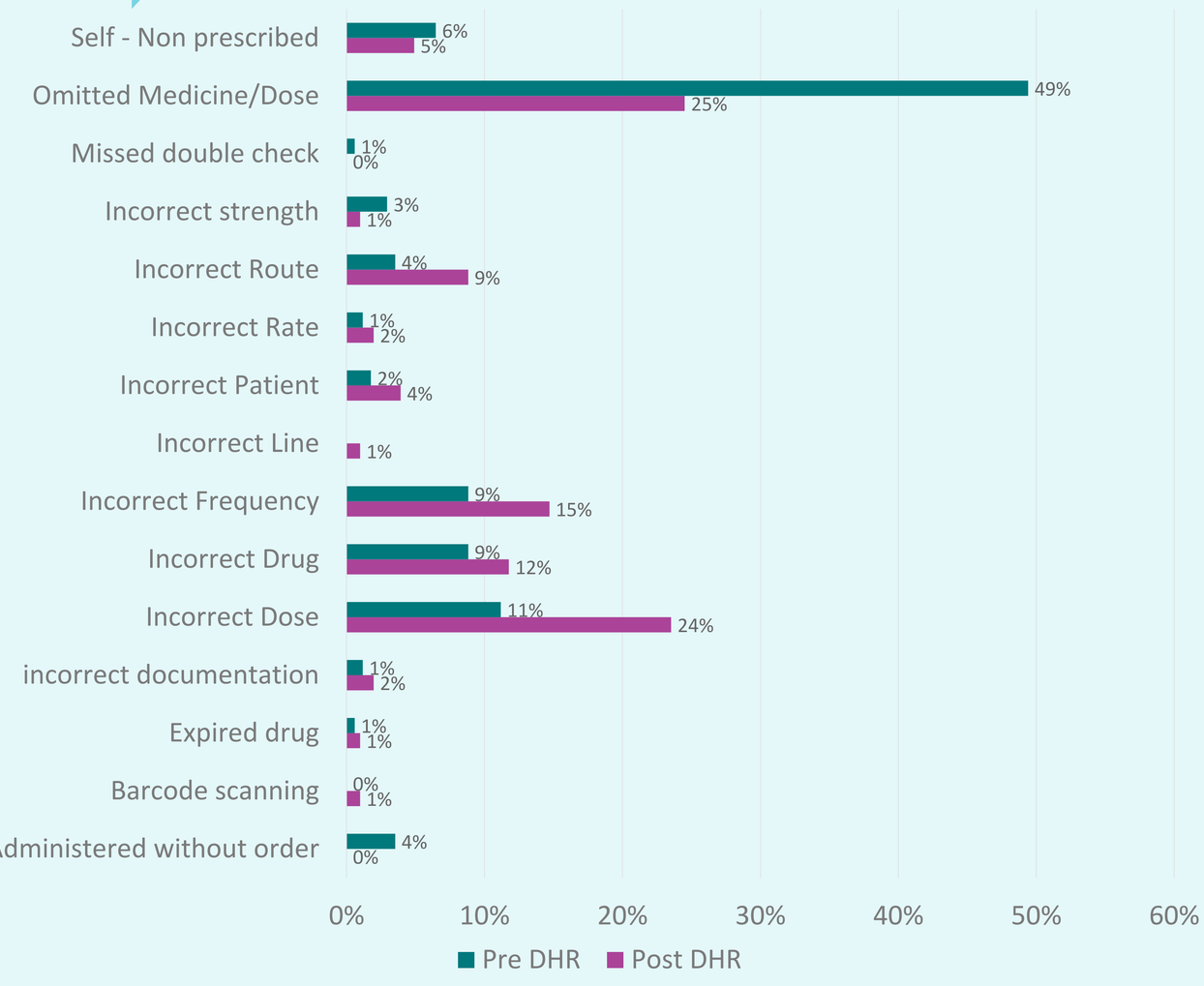


Figure 5 – Types of 'Administration of drug' incidents reported



Results

Pre DHR implementation, 308 incidents were reported, compared to 147 in the post-DHR period (Figure 1). The incident severity was similar in both periods, with the majority being classified as 'no harm' (harm score 4) or 'minor harm' (harm score 3) incidents (Figure 2). A percentage of incidents from each group (18% in the pre-DHR, and 32% in the post-DHR data) did not have their harm score confirmed, therefore appear an 'none entered'. The proportion reported from the Emergency Department was lower pre-DHR (20% vs 36%) whereas the proportion from medical wards was higher pre-DHR (35% vs 16%) (Figure 3). The classification of incidents (administration, dispensing and prescribing) was similar, however, there was a slightly higher proportion of prescribing related incidents reported pre-DHR (23% vs 14%) (Figure 4). Half the reported incidents in each group were related to administration of medicines. Further analysis indicated a larger proportion of 'Omitted dose' incidents reported in the pre-DHR data set (49% vs 25%), and a higher proportion of 'incorrect drug, dose and frequency' incidents reported in the post-DHR data set (Figure 5).

Discussion

Medication incident data is self reported, with a wide range of incentives and barriers impacting the number and type of incidents reported. Less incidents were reported in the post-DHR period, which may be due to changed workflows and workloads, and confusion between 'incident' reporting processes and reporting DHR 'issues' with the digital support team. The types of incidents reported were different in each group, particularly those relating to administration. The DHR actively alerts clinicians about overdue doses, which may explain the reduction in omitted doses in the post-DHR period. The increase in medication incidents related to 'incorrect frequency, dose and drug' is potentially due to gaps in clinician knowledge and understanding regarding how the DHR applies dose and frequency limits, particularly for 'PRN' orders. The use of handheld devices is also thought to contribute to these administration errors as information regarding previous doses administered is less visible to inexperienced clinicians. Further analysis is underway to understand the full impact of clinician understanding and knowledge of the DHR system and how this impacts medication incidents. Themes and trends in the post-DHR incident data will inform strategies to prevent medication related harm into the future.