

A Pharmacokinetic (PK) Tool App: Using a Standardized Communication Document for Nursing in Clinical Trials to Improve Patient Care

Ashley Yang; Amy Shi; Michelle Pilloff; Anna Borrell; Jodie Pindulic; Chelsey Motzkin; Chanda Delgado; Hector Pacheco; Michael Buckley; Lisa Klempner; Jeanie Kim-Chang; Renata Panchal; Joseph Lengfellner; Nicholas Cimaglia; Stephanie Terzulli; Alexander Drilon, MD; Paul Sabbatini MD

Background

Memorial Sloan Kettering (MSK) is a high-volume National Cancer Institute (NCI) designated center with about 2000 active protocols. To ensure a timely and accurate collection of trial-specific data that must be collected at certain timepoints during the patient visit, nurses rely on a communication document known as Pharmacokinetic (PK) sheets.

Prior to 2023, the clinical research team at MSK manually created these documents, using Microsoft Word (MS). This resulted in inconsistent formatting, varying language, and is error prone. PK-sheet issues can lead to delay in data collection and patient care and can cause a deviation from the protocol. When PK-sheet issues occur, nurses report them in MSK's Reporting to Improve Safety and Quality (RISQ) System. In 2022, there were 55 incidents reported by nursing related to PK sheets.

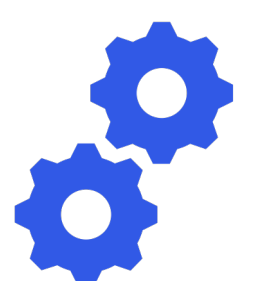
Goals



Reduce the number of PK-sheet related RISQ reported by nursing.



Standardize the PK sheet format to improve clarity and readability for nursing staff across all MSK locations.

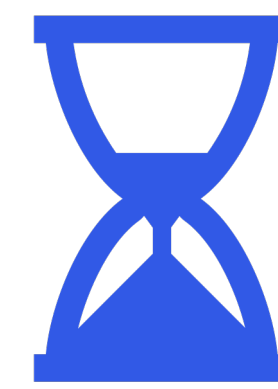


Integrate it with an existing internal system at MSK, which already contained relevant collection data, to reduce staff time and effort in creating the PK sheets.

Results

The PK Tool application users were surveyed to assess time savings and user preferences, with a 37% response rate (68 out of 183).

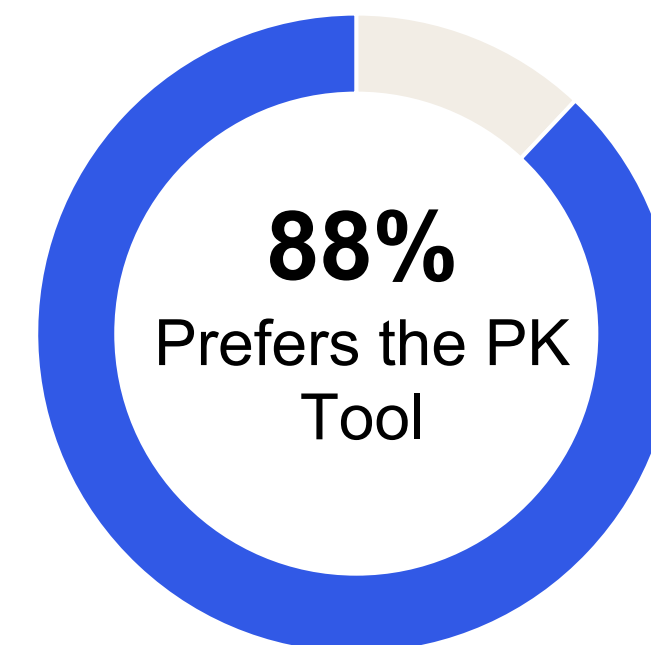
Time Saved Using PK Tool Application



12 mins

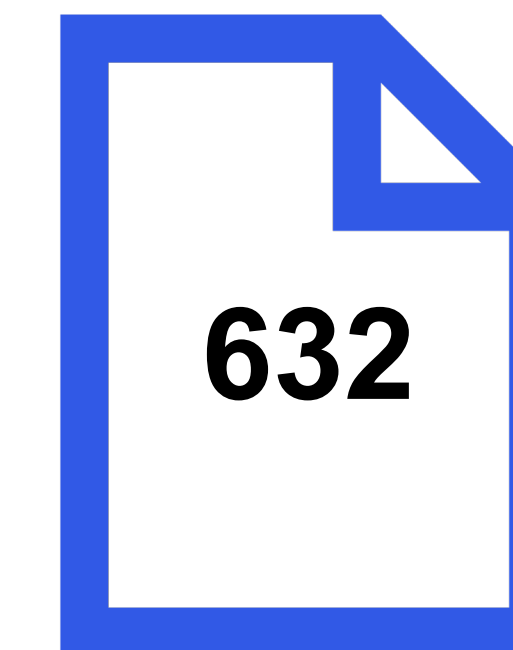
saved per PK sheet created

User Preference



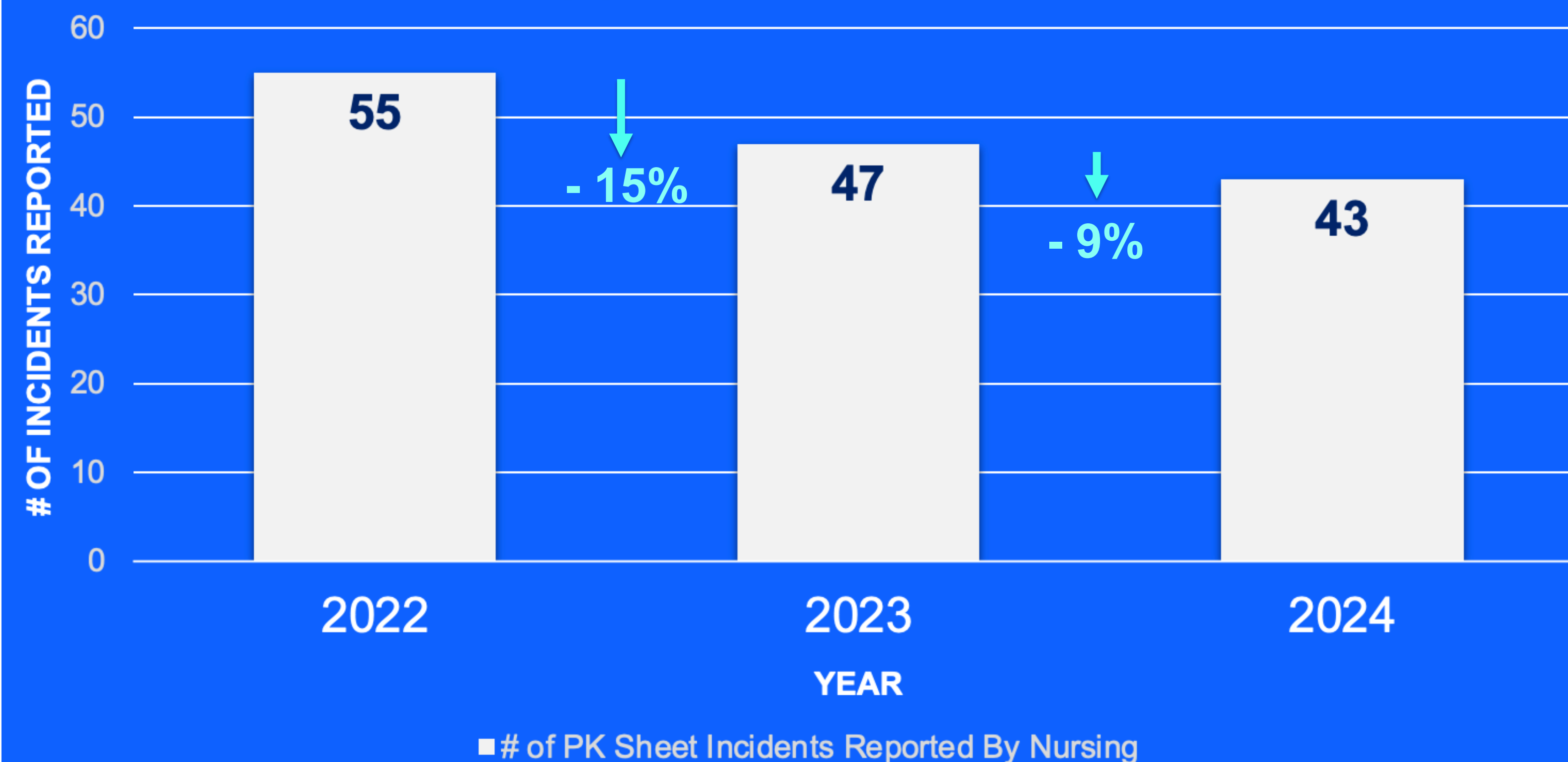
■ MS Word ■ PK Tool

of Protocols managed in the PK Tool



We analyzed the number of PK sheets incidents reported from 2022 to 2024. There was a 15% decrease in incidents from 2022 to 2023, followed by an additional 9% decrease from 2023 to 2024. This suggests a positive trend in incident reduction following the rollout of the PK Tool application in 2023.

Trends in Incident Reports (2022–2024): Decreases in Reported Incidents Following Application Rollout



Methods

The PK Tool Application was rolled out at MSK in 2023. To assess the effectiveness of the application, the number of PK sheet RISQ reported from 2022 to 2024, were analyzed. Additionally, clinical research staff who used the PK Tool were surveyed about their satisfaction and the time and effort required to create PK sheets compared to the previous MS method.

Lessons Learned & Future Directions



User training and education is key, because an application is only as effective as its users are prepared to use it.



Learn from other NCI institutions to understand how they ensure the timely and accurate collection of trial-specific data.



Evaluate if we can utilize the Epic Beacon Treatment Plan or integrate Epic into our application to further reduce manual data entry and improve data quality.