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A NINJA Initiative at Children's Mercy

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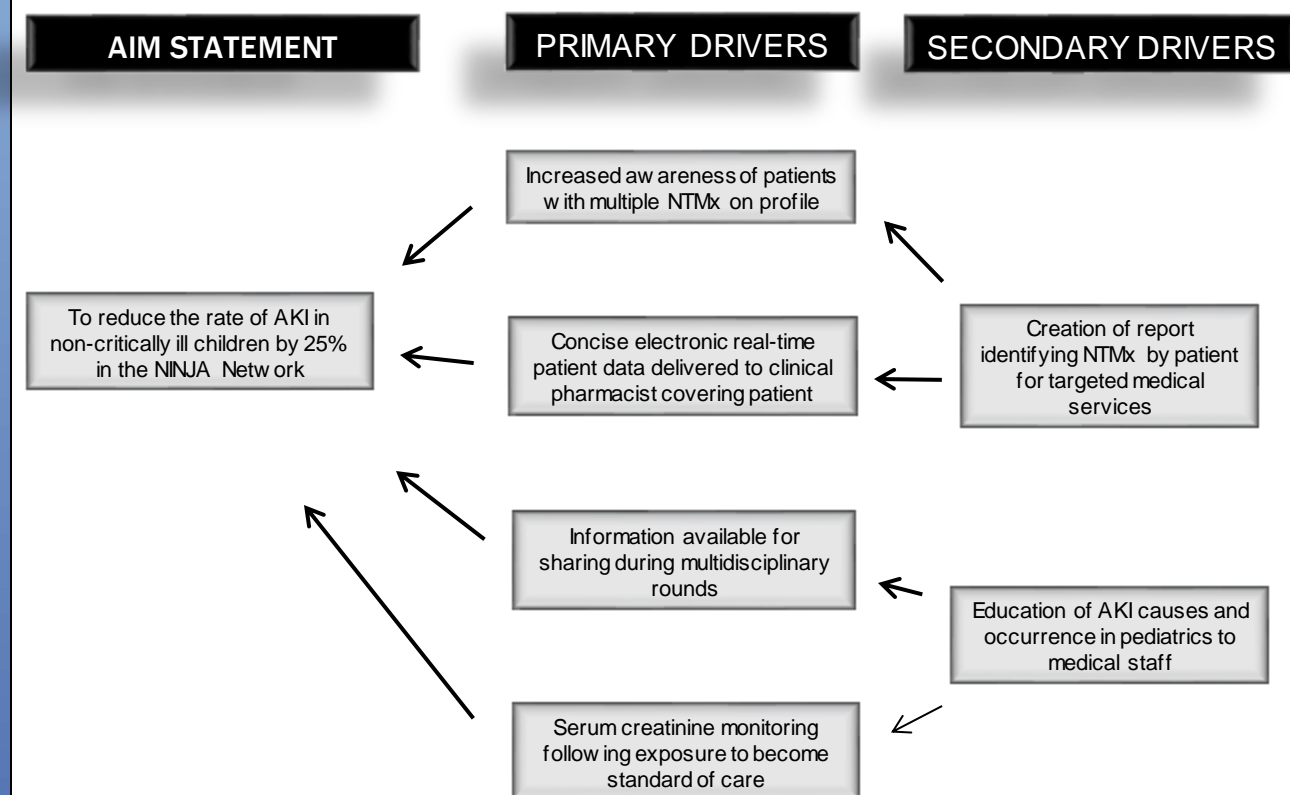
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Background

Nephrotoxic medication (NTMx) exposure is a common cause of acute kidney injury (AKI) in hospitalized children. A single center safety initiative was able to demonstrate a decrease in nephrotoxic-associated AKI by 62%. Subsequently, a multicenter pediatric institutional collaborative (NINJA; Nephrotoxic Injury Negated by Just in-time Action) was instituted at nine centers, including Children's Mercy.

Methods

A key driver diagram was developed by the CMH NINJA team members. This was added to a "NINJA Roadshow" in which each participating medical division was informed about the metrics being measured (including % patients receiving 3 or more NTMx medications or an IV aminoglycoside for more than 3 days ["exposed"], and rate of exposed patients developing AKI) on non-ICU patients. Six divisions were selected for the initial phase of implementation (Pulmonology, Cardiology, BMT, Heme/Onc, GI, Nephrology). Daily trigger reports were generated by the EMR and emailed to the clinical pharmacist on the respective medical services. The clinical pharmacist reviewed the list for NTMx exposure. If exposed, the pharmacist recommended a daily SCr and alternative, non-nephrotoxic medications, if available.



NINJA Process

Daily monitoring report generated and emailed to clinical pharmacist on selected medical service

Clinical pharmacist reviews patient list and communicates any potential exposures to multidisciplinary team

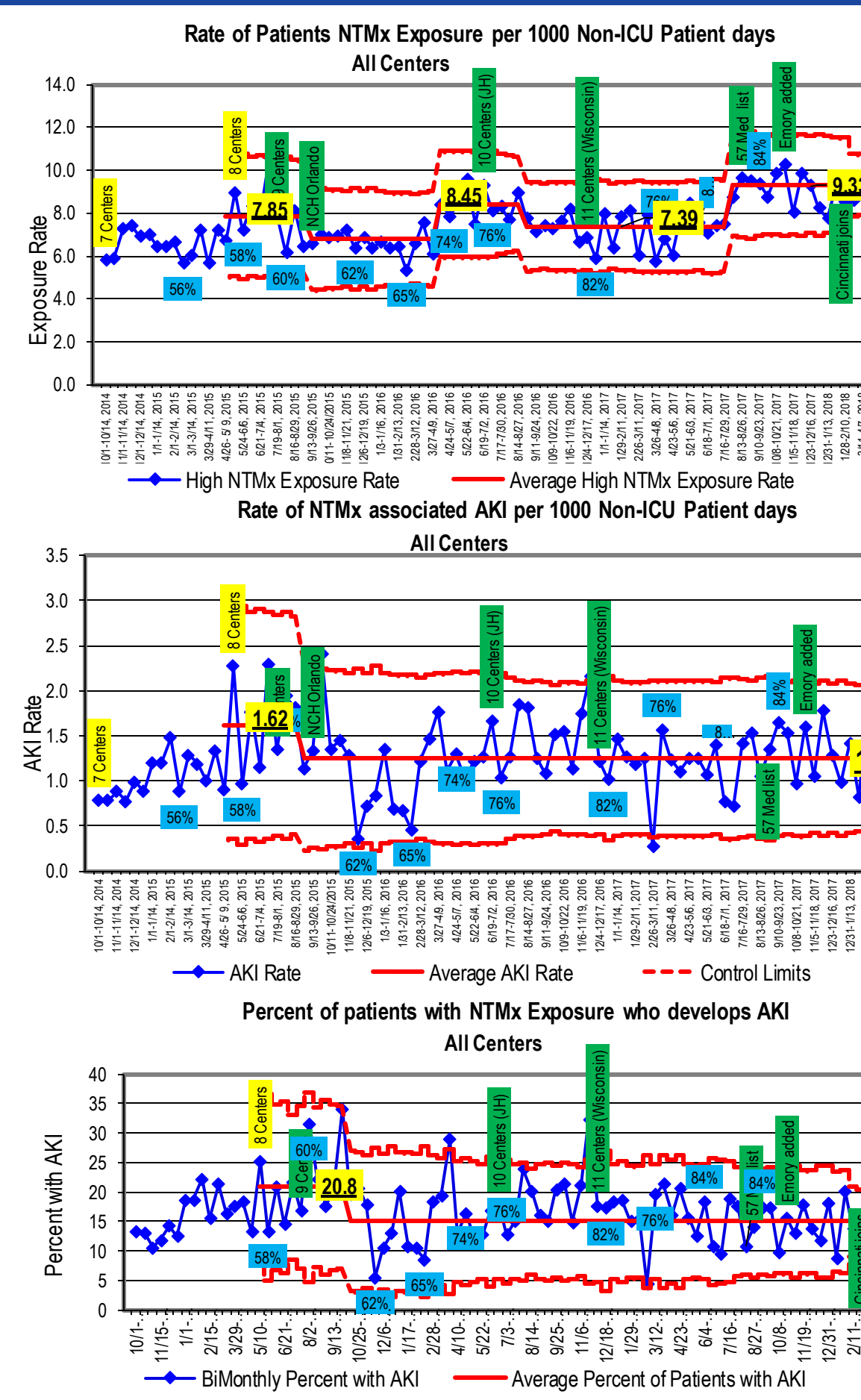
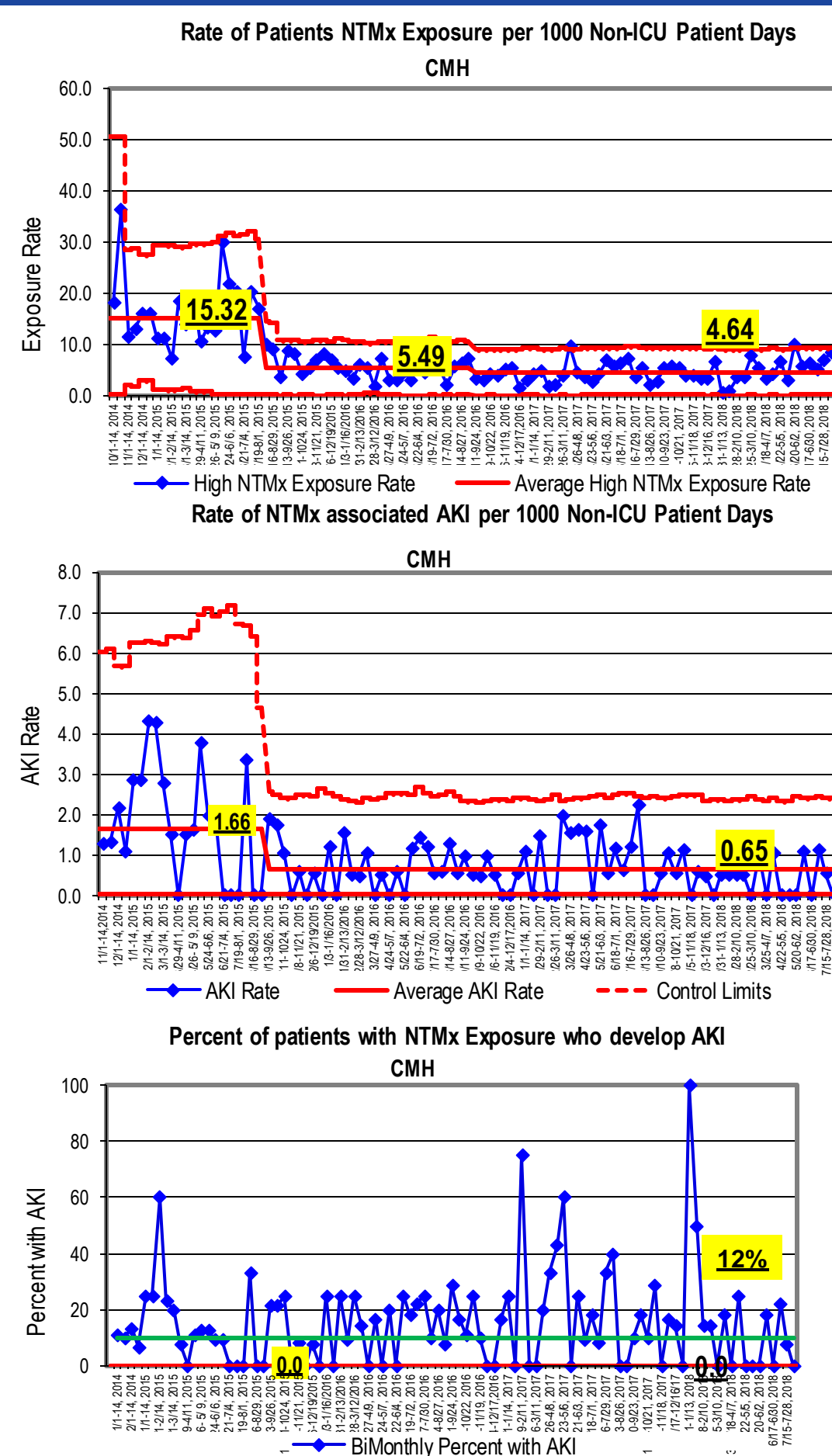
If patient has been exposed, clinical pharmacist notify providers of need for SCr and alternative, non-nephrotoxic medications, if available.

Results transferred into collaborative spreadsheet

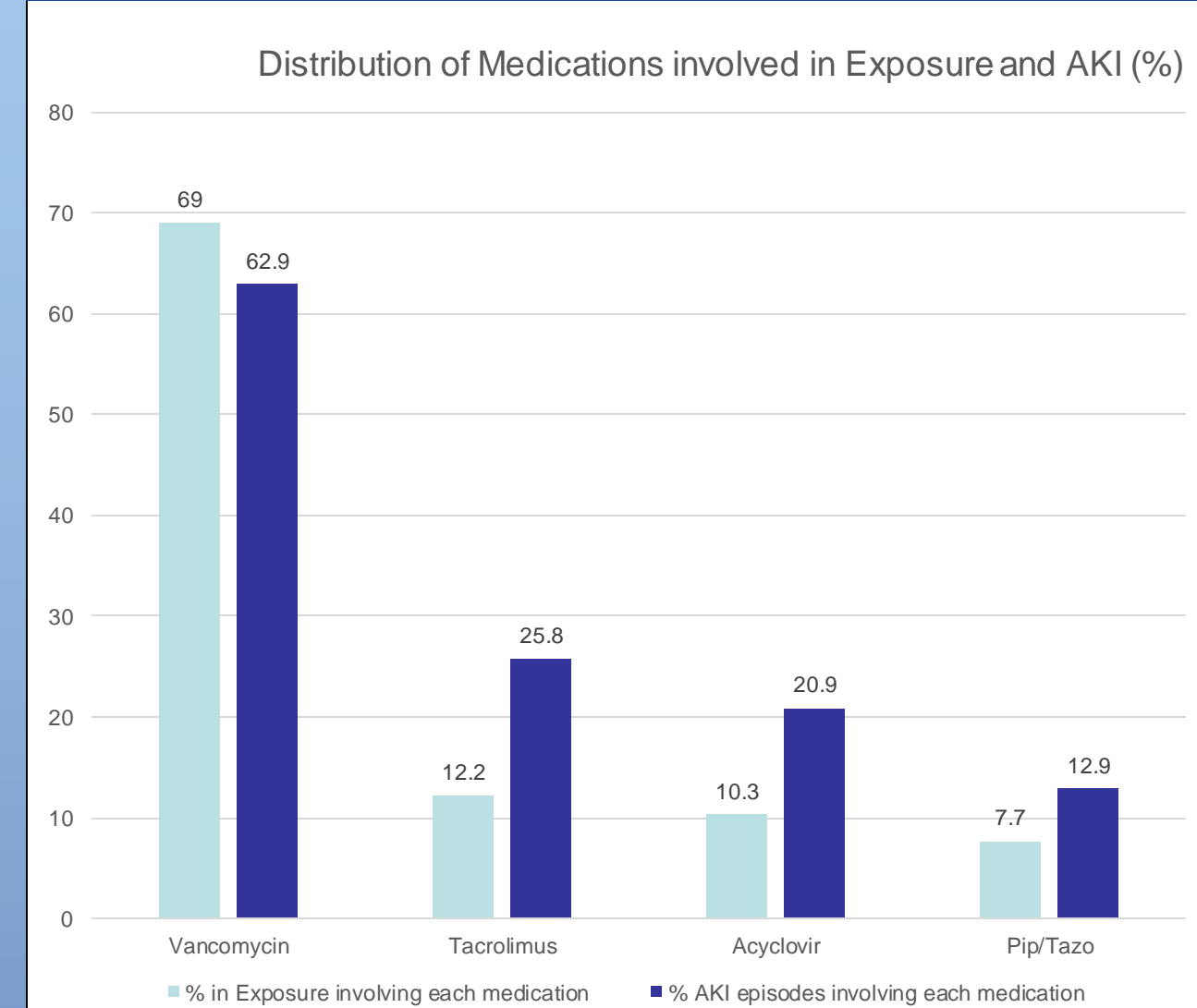
Dataset review by pharmacist for patients with exposure to monitor for AKI

Data shared with medical services

Results



Results



Results

In 4 year time frame, we were able to demonstrate a 70% decrease in nephrotoxic medication exposure and 61% decrease in the rate of AKI in all non-ICU inpatients. Of the patients who were exposed, 12.4% developed AKI. The results at CMH were more favorable than the collaborative in overall exposure rate, AKI rate, and percent of patients who developed AKI following exposure.

Conclusions

By participation in a collaborative effort of NINJA leadership, medical divisions, and clinical pharmacists focused on limiting the use of nephrotoxic medications and reducing the risk of medication related impairment of kidney function, we successfully decreased nephrotoxic medication exposure and the rate of AKI in non-ICU patients.