

## [NM-285] Reduction in Use of Single Dose Vials Across Multiple Patients

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### Introduction:

The use of a single dose vial across multiple patients presents a sterility risk and has been implicated in disease transmission. In fact, current CDC guidelines limit the use of single dose vials, including narcotics, to a single patient. These guidelines are particularly difficult in pediatric institutions, where patients receive small doses from a much larger vial, generating excessive waste with each patient.

We initiated a quality improvement project to reduce the intraoperative use of single dose vials across multiple patients at Cincinnati Children's Hospital (CCHMC), while at the same time minimizing increased burden to anesthesia providers and pharmacy from excessive waste.

### Objectives:

Our specific aim for this project was to reduce the percentage of patients receiving an IV Fentanyl administration, from a vial previously used for another patient, in one operating room (high turnover ENT) at CCHMC from 50% to 25 % by January 23rd, 2014. Subsequent projects are planned to spread the change to additional narcotics and operating rooms. This is part of a larger hospital global aim to eliminate sources of infection in the perioperative environment.

### Methods:

The number of patients each week receiving an IV dose of fentanyl, from a vial previously used on another patient was tracked in one ENT operating room (figure 1)

Key drivers for reducing failures were determined and are listed in figure 2. Interventions were developed to target these key drivers. Small tests of change, or Plan Do Study Act Cycles (PDSAs), included provider education, increasing the number of vials, alternate wasting processes, and introduction of single use fentanyl syringes of various sizes.

The amount of fentanyl wasted each day was tracked as a balancing measure. Additionally, subjective feedback was acquired after each PDSA.

### Results:

Baseline data showed an average failure rate, defined as percentage of patients receiving a dose of fentanyl from a previously used vial, of just over 50%.

Interventions such as education and increased vials reduced the number of failures, but increased waste and created a process that was burdensome and confusing to providers.

Preliminary feedback on single use fentanyl syringes, of optimized quantity and size, shows promise in maintaining compliance while minimizing the burden on providers and pharmacy.

### Conclusion:

While our data is preliminary, preparation of single use fentanyl syringes, combined with provider education, may reduce

the intraoperative use of single dose vials across multiple patients. Optimized quantity and size of syringes may reduce excessive waste and minimize burden on providers and pharmacy.

### Percentage of patients receiving an IV Fentanyl administration, from a vial previously used for another patient in OR 14

