Revising a Hospice/Palliative Care Order Set Using Human Factor Design: A Quality Improvement Project.

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Background

- A patient on the Palliative Care Inpatient unit was ordered a high-dose opioid drip for uncontrolled pain, however the order was accidentally placed for a high-concentration infusion at a rate that was not compatible with the IV pump. This resulted in the patient's medication administration being delayed about 6 hours.
- Palliative Care Nursing noted this was not the first instance.
- Interdisciplinary UPP[t] eam formed and identified the Order Set as a target for improvement:
  - ◆ Original order set was not designed to promote efficiency or accuracy. Error-prone even for experienced providers (see Figure 4).
  - ◆ Goal became to use perspectives from the interdisciplinary team to create a safer and more effective Palliative Care Order Set.

Human Factor Design is a field of research focused on designing human-technology interfaces in order to achieve optimum efficiency, safety, and effectiveness.
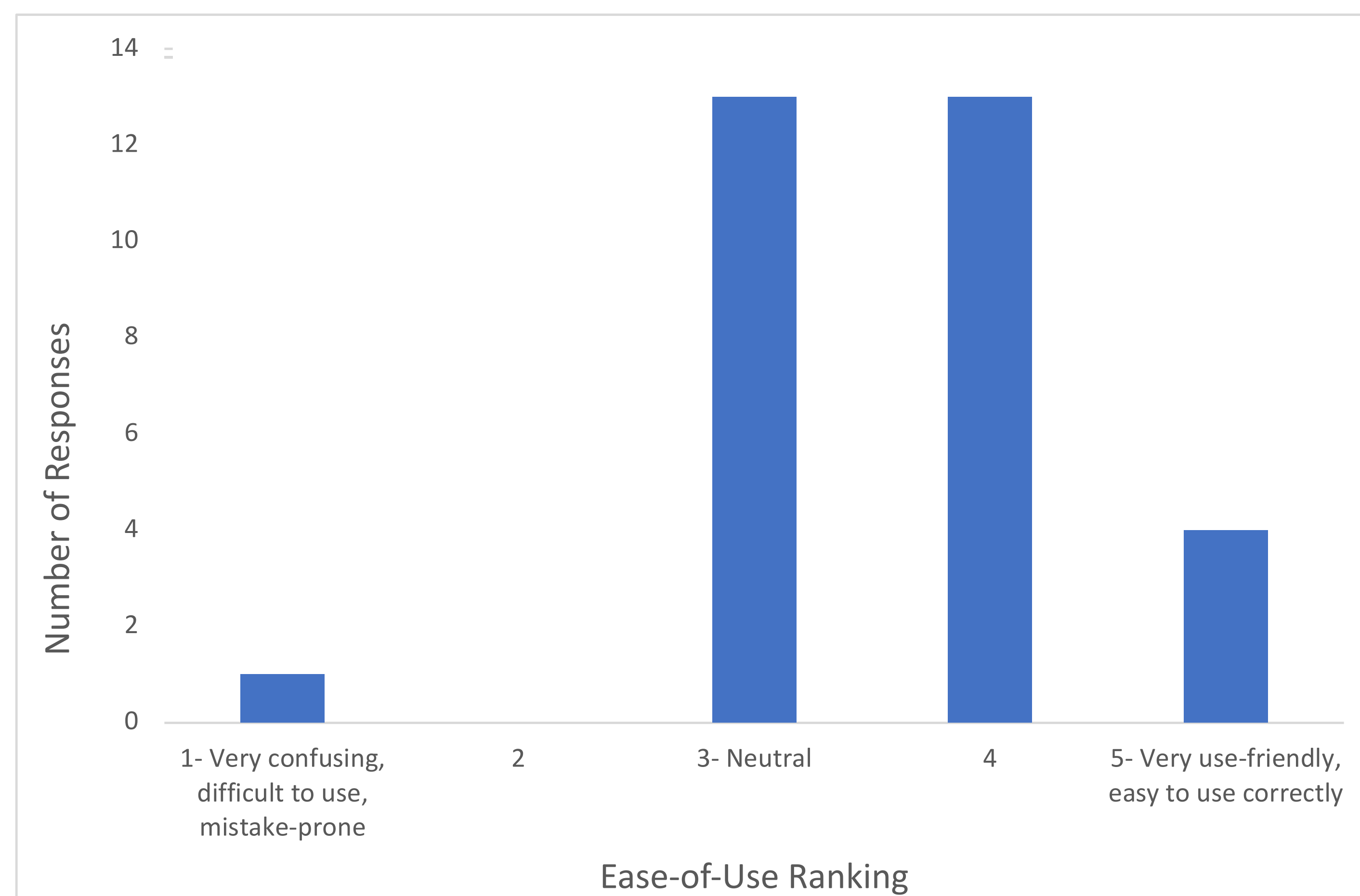

Figure 1: Results from a pre-survey sent to Internal Medicine residents and attendings asking for subjective perceptions of the previous order-set. N=31.
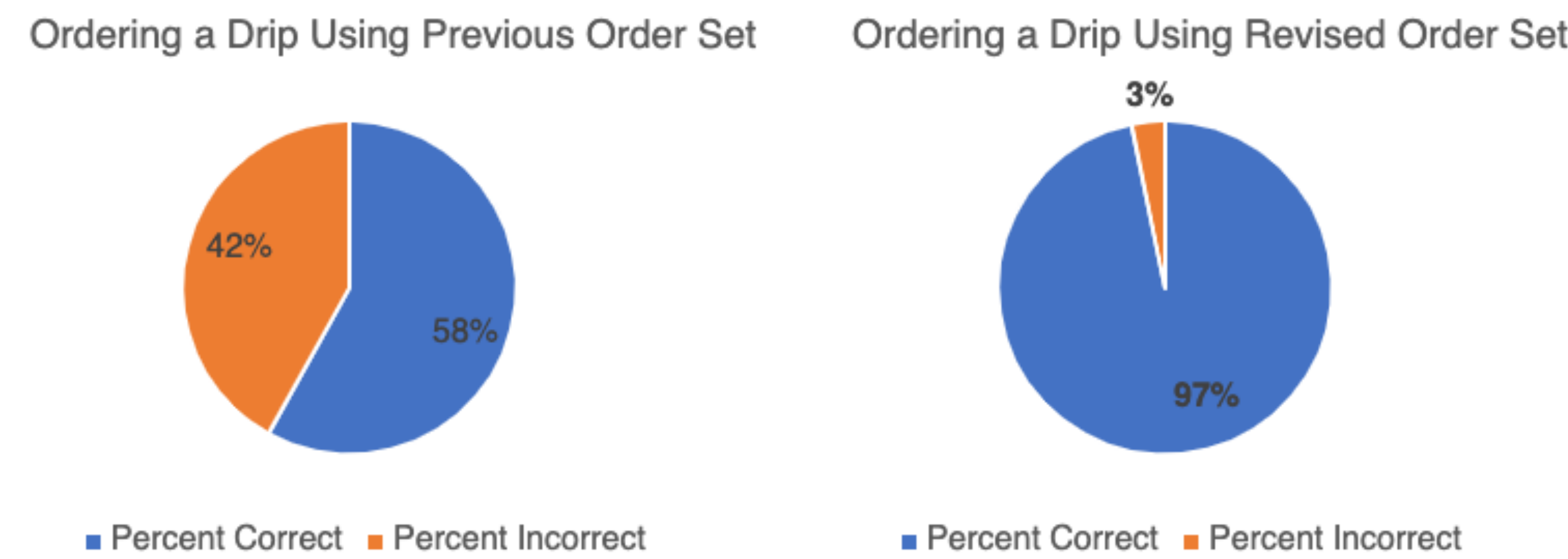
Figure 2: A hypothetical clinical scenario based on the index patient case was presented to the same residents and attendings, asking them to choose the correct opioid drip order using the previous order set, followed by the revised order set. Results on correctly-placed orders are shown above. N=31.
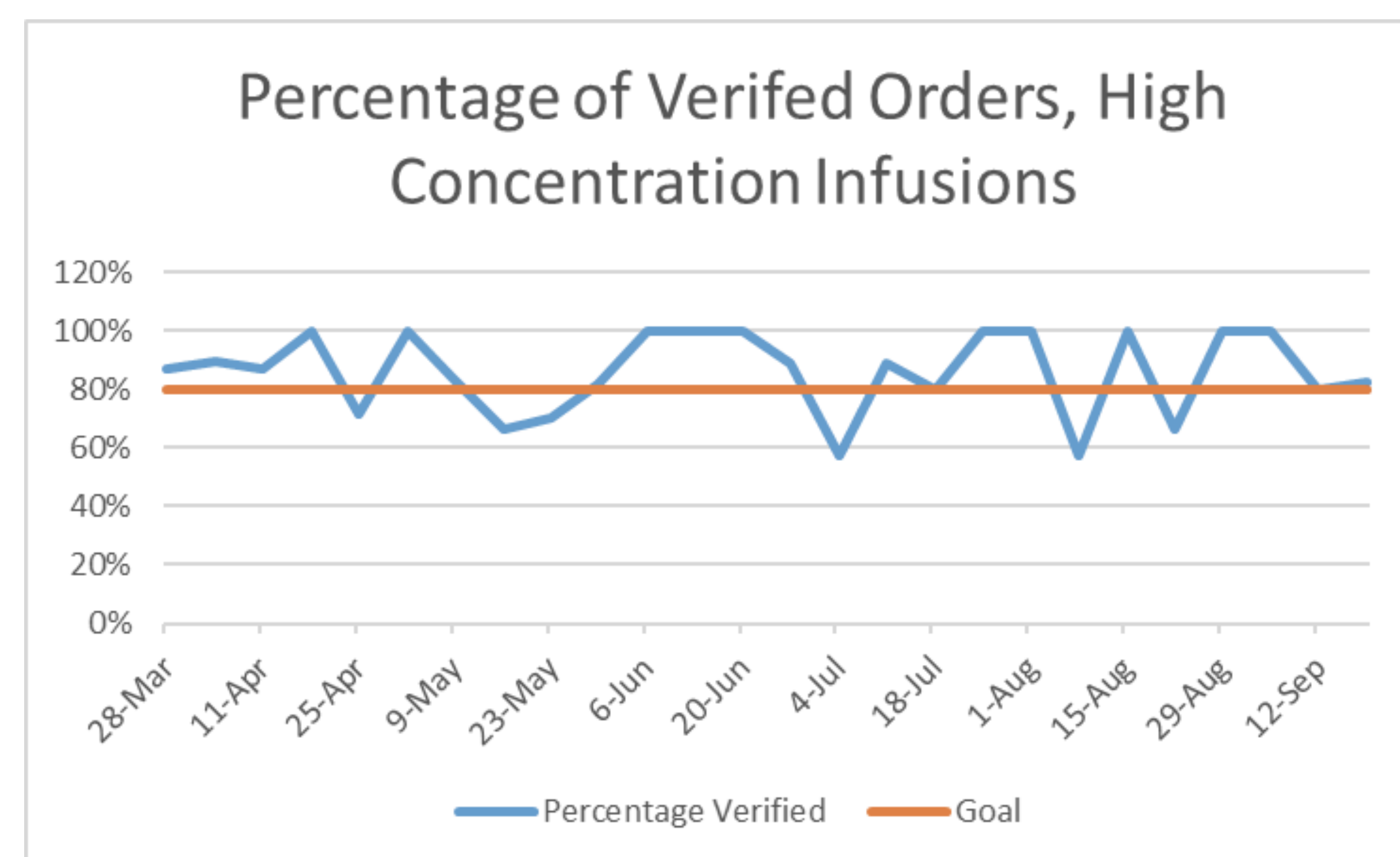
Figure 3: Percentage of high-concentration infusion orders that were verified by pharmacy. Data is presented by week for a duration of 6 months (March-September 2023). Note, the revised order set launched on August 2nd, 2023.
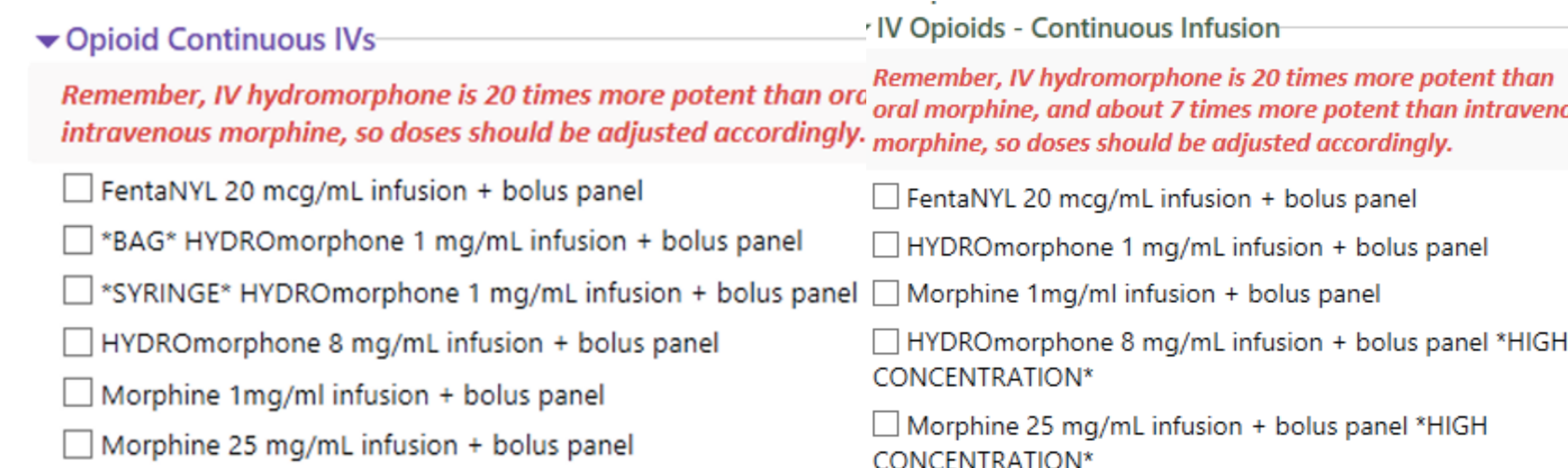
Figure 4: Expanded view of options for Continuous IV Opioid Infusions. Previous order-set (Left) vs Revised order-set (Right). Less options to choose from. High concentration orders are grouped together, clearly labeled, and are further down on the list, as they are used less often.

Aim Statement/Measures

- Aim: We will increase the percentage of correctly ordered highly concentrated infusions to above 80% by November 2nd, 2023.
- Outcome Measure: Ordering errors, identified as unverified or canceled high-dose infusion orders.

Interventions/Methods

- Interdisciplinary UPP Team to design a clear, organized, less error-prone order set (see Figure 4).
- Human Factor Design Elements:
  - ◆ Succinct labels/phrases
  - ◆ Clear organization/separated categories
  - ◆ Avoid too many choices
  - ◆ Highest priority listed first
- Education/awareness of the new order set through in-person presentation and email distribution.

Future Steps

- Determine whether there is a measurable difference in ordering errors after 3 months[t] ime using Slicer Dicer.
- Seek out feedback from nurses, pharmacists, and providers, including Palliative Care and General Medicine teams.
- Identify other areas of focus for further revisions.

References/Acknowledgments

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