

## Problem Definition

- Postoperative pneumonia increases morbidity, mortality, length of stay, and hospital costs up to \$12,000-\$40,000 per patient
- TJUH Center City ranked in the top 3<sup>rd</sup> - 4<sup>th</sup> quartile of pulmonary complications on the 2020 National Surgical Quality Improvement Program perioperative review
- ICOUGH protocol: widely accepted, **standardized** set of post-operative interventions to reduce pneumonia incidence
  - Incentive spirometry (IS)
  - Coughing and deep breathing
  - Oral care (twice daily)
  - Understanding (patient and family education)
  - Getting out of bed frequently (at least 3x daily)
  - Head-of-bed elevation
- *Survey design:* measure ICOUGH compliance before and after implementation of resident note checklist in EPIC
  - Patients on the general surgery service were surveyed on post-op days 1-2 at TJUH

## Aims For Improvement

- To increase ICOUGH compliance metrics by 10-20%

## Intervention

- *Standardized resident physician checklist implemented in EPIC*
- *Scan QR code on bottom right for checklist templates implemented*

### References:

Cassidy, M. R., Rosenkranz, P., Macht, R. D., Talutis, S., & McAneny, D. (2020). The I COUGH multidisciplinary perioperative pulmonary care program: one decade of experience. *Joint Commission Journal on Quality and Patient Safety / Joint Commission Resources*, 46(5), 241-249.

## Results

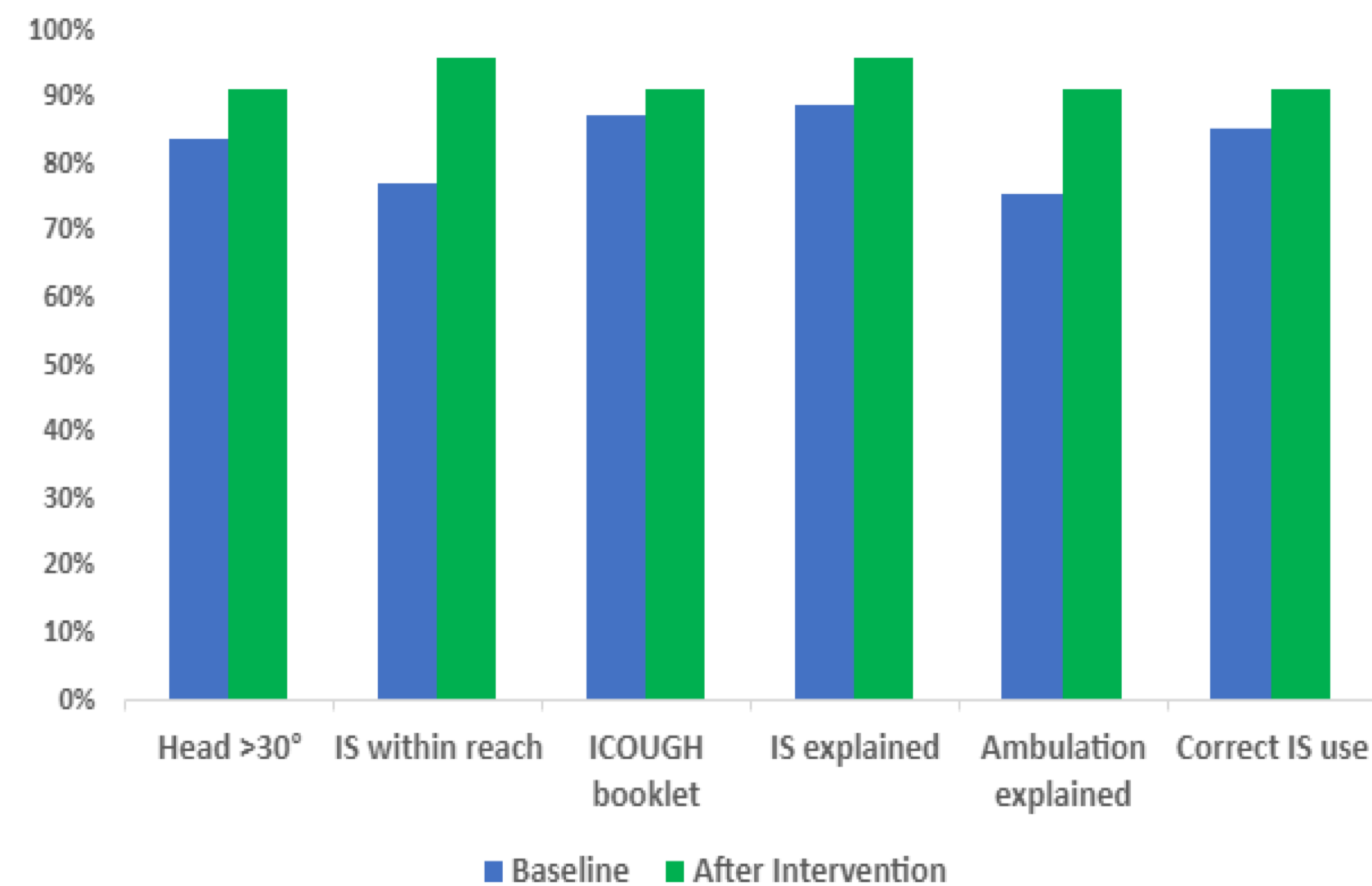


Fig 1: Baseline and post-intervention high compliance metrics

- Baseline data (n=61) and post intervention data (n=22) show an improvement in many ICOUGH metrics
- High compliance baseline metrics were defined as baseline compliance level > 70%; low compliance were <70%

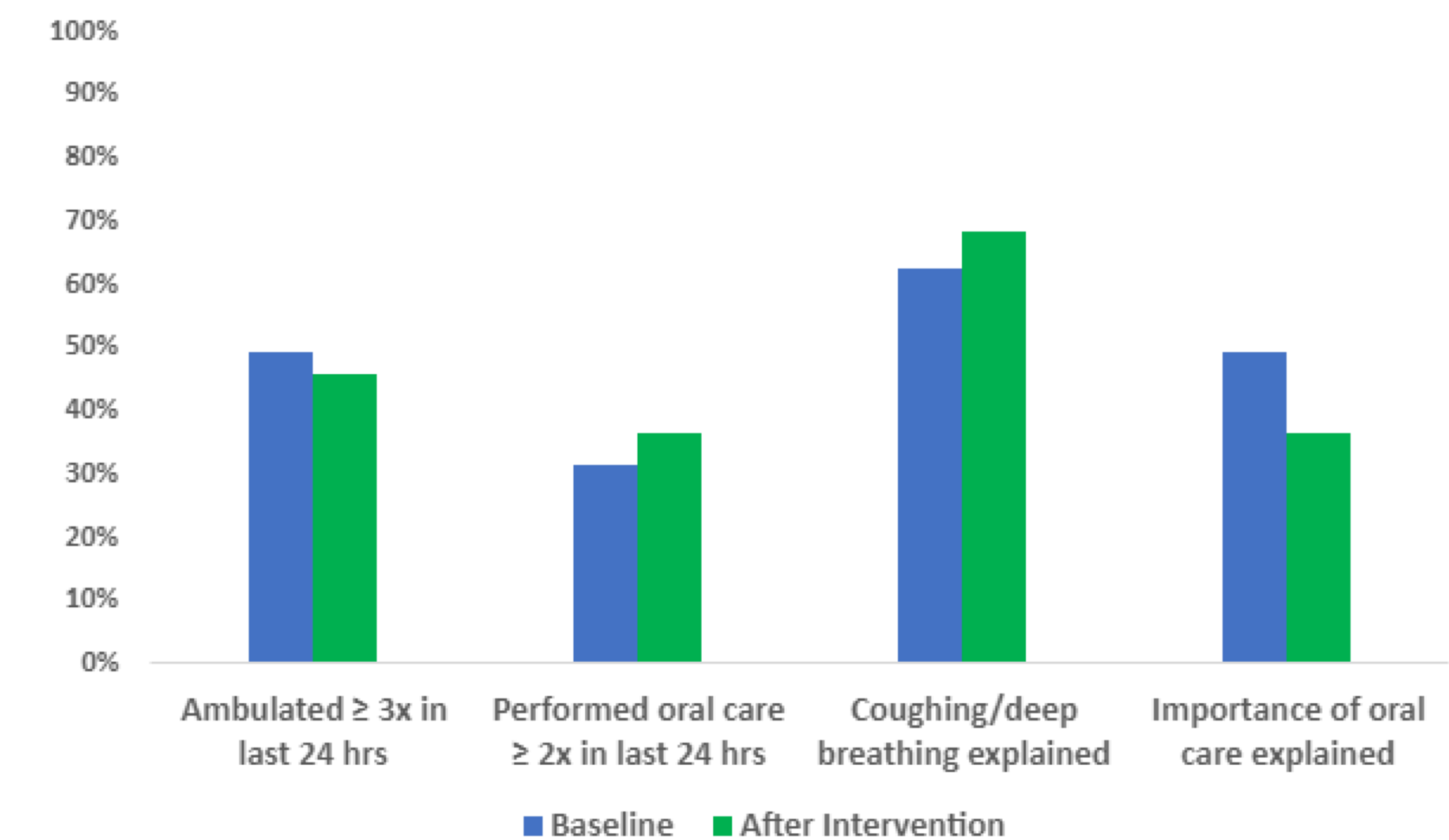


Fig 2: Baseline and post-intervention in low compliance metrics

- Data showed the following changes after checklist implementation:
  - IS within reach increased 18%
  - Ambulation explained increased 15%
  - ICOUGH explained increased 7%
  - Head >30° increased 7%
  - Performed oral care >2x increased 5%

## Lessons Learned

- Improvements were made, but we hope to continue the mission with implementation of the following additional interventions:
  - EMR generated high-risk pneumonia scores
  - Bedside swallow evaluations
  - Bed signage for high-risk patients
  - Monitored feeding for high-risk patients
- *Limitations:*
  - Small sample size
  - Differences in post-op day 1 and 2
  - Effects of COVID-19 on baseline compliance
- Possible effect of active monitoring: future studies should determine the duration that outcomes remain changed from baseline



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