

Mobile-Enabled Quality Improvement in Upper GI Surgery

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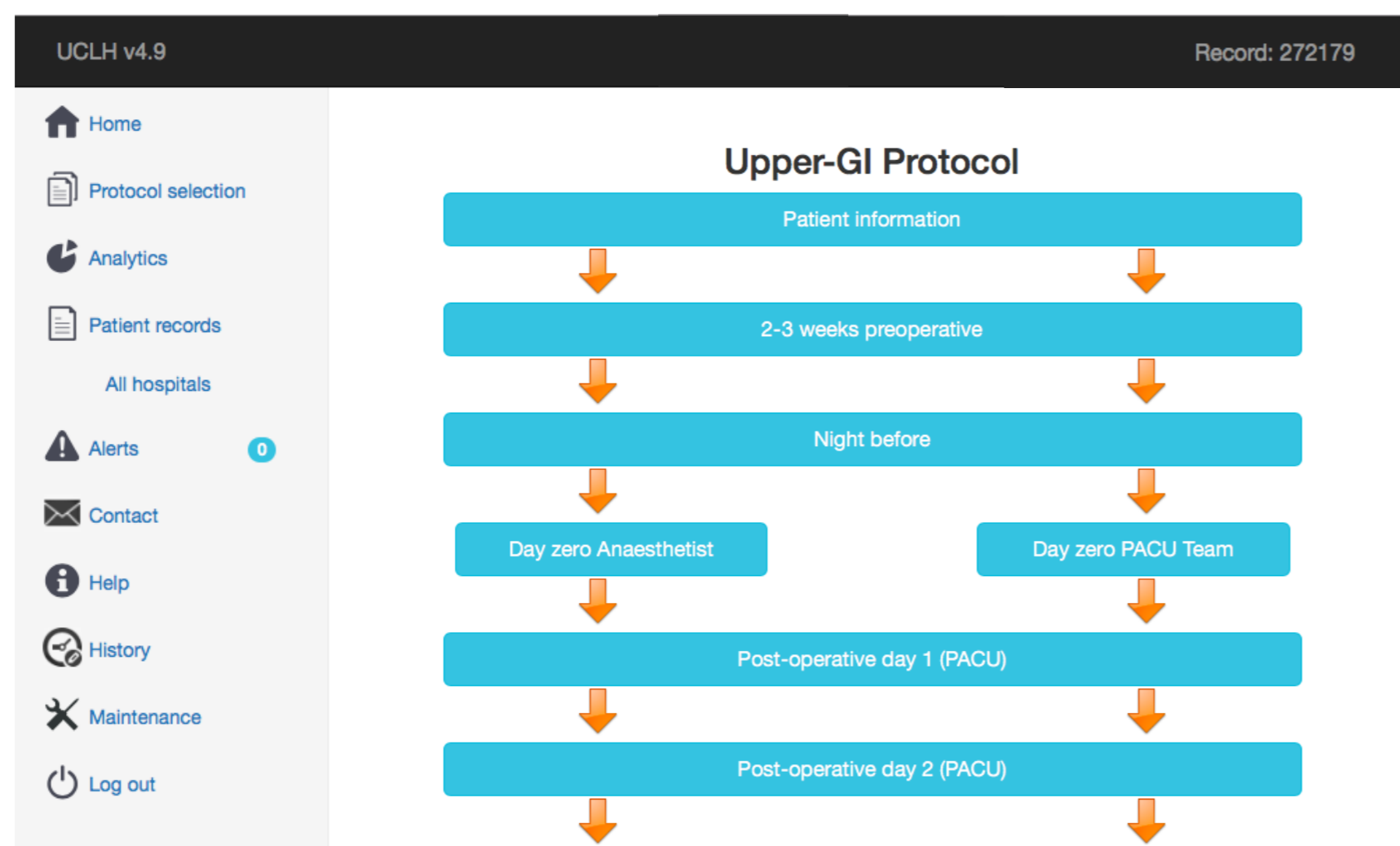
Background

- Oesophago-gastric (OG) surgery is associated with high morbidity and long inpatient stay
- By bringing consistency to peri-operative care, length of hospital and HDU stay can be shortened, and complications reduced
- Data collection for quality improvement analysis is typically retrospective and inaccurate, detracting from credibility

Aims

- To establish a structured care pathway, spanning a comprehensive multi-disciplinary approach to peri-operative care
- To track key pathway metrics prospectively, including compliance and outcomes (HDU stay, hospital stay and morbidity), using the Enhanced Recovery app (fig. 1)
- To communicate data on pathway compliance to the multi-disciplinary team (MDT), using the digital platform

Figure 1: The OG pathway on the Enhanced Recovery app



Methodology

- Fifty patients were included in this study, all undergoing OG resection for malignancy at a specialist unit (UCLH) between October 2016 and May 2017
- A peri-operative care plan, beginning at the first consultation and through to the day of discharge, was assigned to each patient
- Key metrics on adherence to these care plans were collected prospectively via mobile devices
- Data on compliance to the pathway was analysed, as well as an assessment of the primary endpoints

Results

- Key recovery milestones (e.g. days until moved from HDU) are now accurately recorded, and the reasons for non-compliance can be analysed

- Monthly compliance reports (fig. 2) are now automatically generated for each specialty in the MDT, and then reviewed in regular meetings to establish consistency in clinical practice
- Patterns have been identified as opportunities for quality improvement, including:
 - Increased post-operative pain associated with higher complication rates
 - Reduced post-operative mobility correlated with higher respiratory infection rates

Figure 2: Bar chart demonstrating physio compliance with the pathway

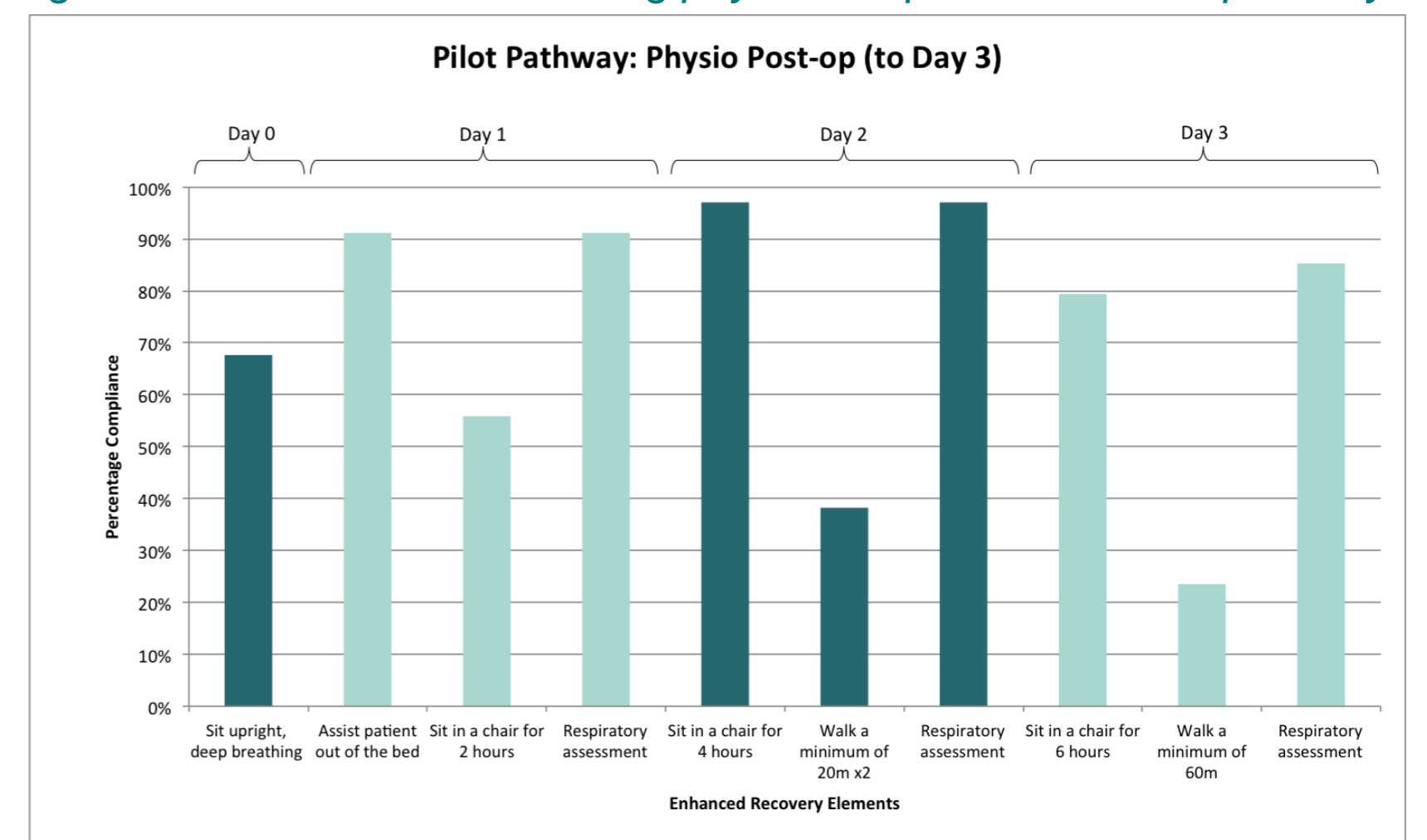
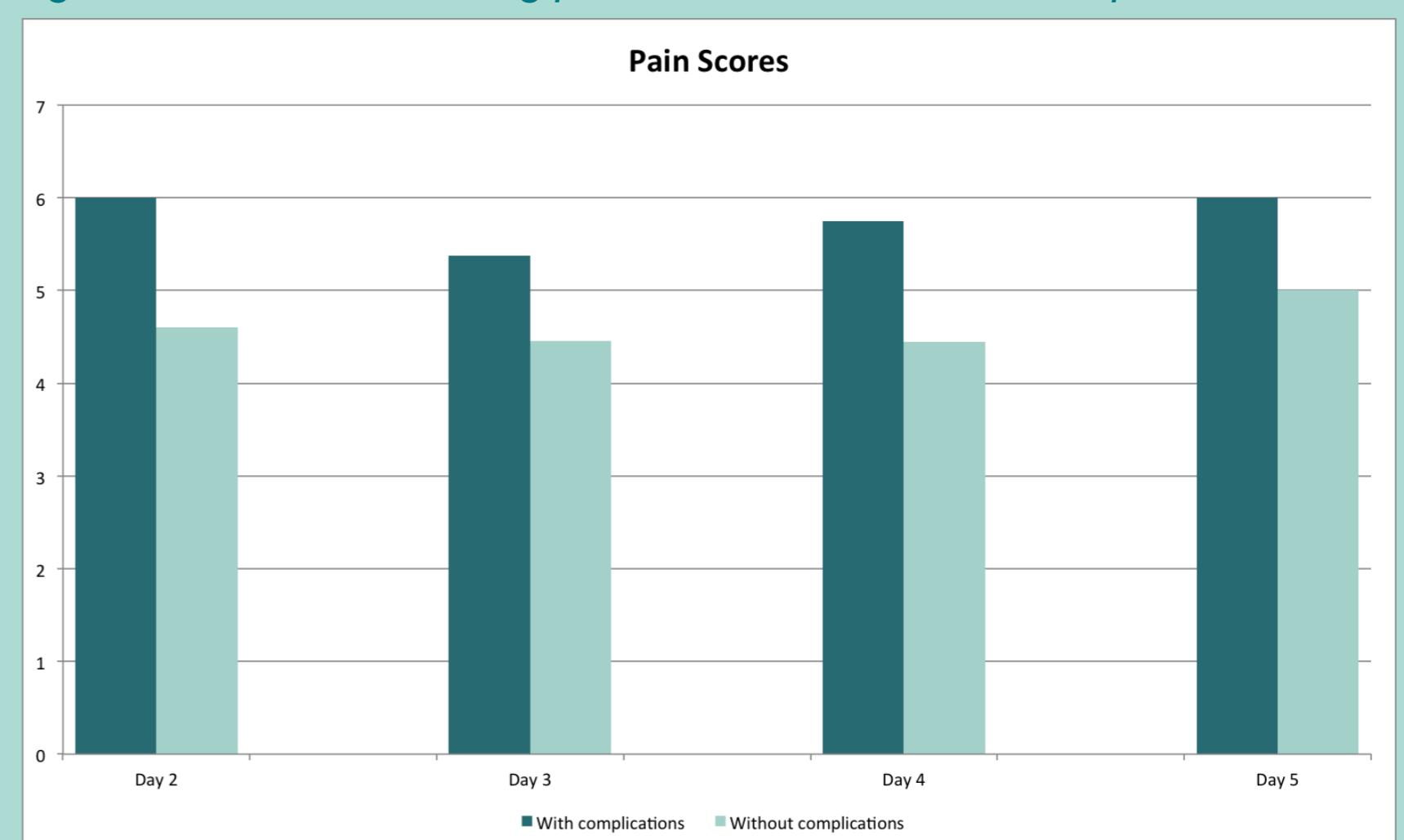


Figure 3: Bar chart showing pain scores with/without complications



Key Findings and Future Directions

- A substantial improvement in data accuracy
- The digital platform has enabled rapid feedback of key pathway compliance metrics to the MDT. Access to timely data on clinical practice is proving valuable in improving the consistency of peri-operative care
- The pathway data set presents numerous targets for quality improvement. We aim to foster a culture of outcome-driven continuous improvement based on this data, as a means to sustain improvements
- Expansion of patient numbers to assess changes to compliance, impact on complications, and effects on long-term outcomes