Quality Improvement: Handover in Trauma Surgery

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May 23 2017

Aim Statement

- To establish that a formal handover is performed for 80% of patients being transferred from the step-down ICU to the Trauma Service at Sunnybrook Health Sciences Centre by May, 2017

Summary

- Problem
  - lack of handover for patients transferred from step-down ICU (B5) to the trauma wards (C5 & C6)
- Primary Endpoint
  - % of transferred patients with completed verbal handover
- Intervention
  - implementation of formal verbal handover
- Change concept
  - verbal reminders, posters, stickers placed in transfer order sheets
- Outcome
  - change in median rate of handover from 0% to 92% overall

Introduction

- There is a body of evidence that effective handover allows for more effective treatment, diagnosis and that it is essential to continuity of care and patient safety.
- When a patient is discharged from one specialty to another, this is a high risk event and poor handover can lead to preventable errors and adverse events.
- ICU patients are at an increased risk due to the complexity of their care
- Thus, having an effective handover tool can be instrumental in improving the quality of care for patients.

Methodology

- Establishing baseline:
  - March 8-14, 2017
    - Eight patients were transferred with zero handover
- Intervention implemented: **March 24, 2017**
  - Trauma resident paged for transfer orders
  - They return the page and ask for ICU fellow's phone
  - Verbal handover is completed between resident and fellow
  - Resident documents on transfer orders that verbal handover was completed

Methodology

- Coordinated with Dr. Avery Nathens, Trauma Director at Sunnybrook for data collection
- A research assistant screened charts of all trauma patients transferred between step-down ICU and the trauma wards for compliance with documented handover
- These results were compared against our baseline rate of handover and analyzed

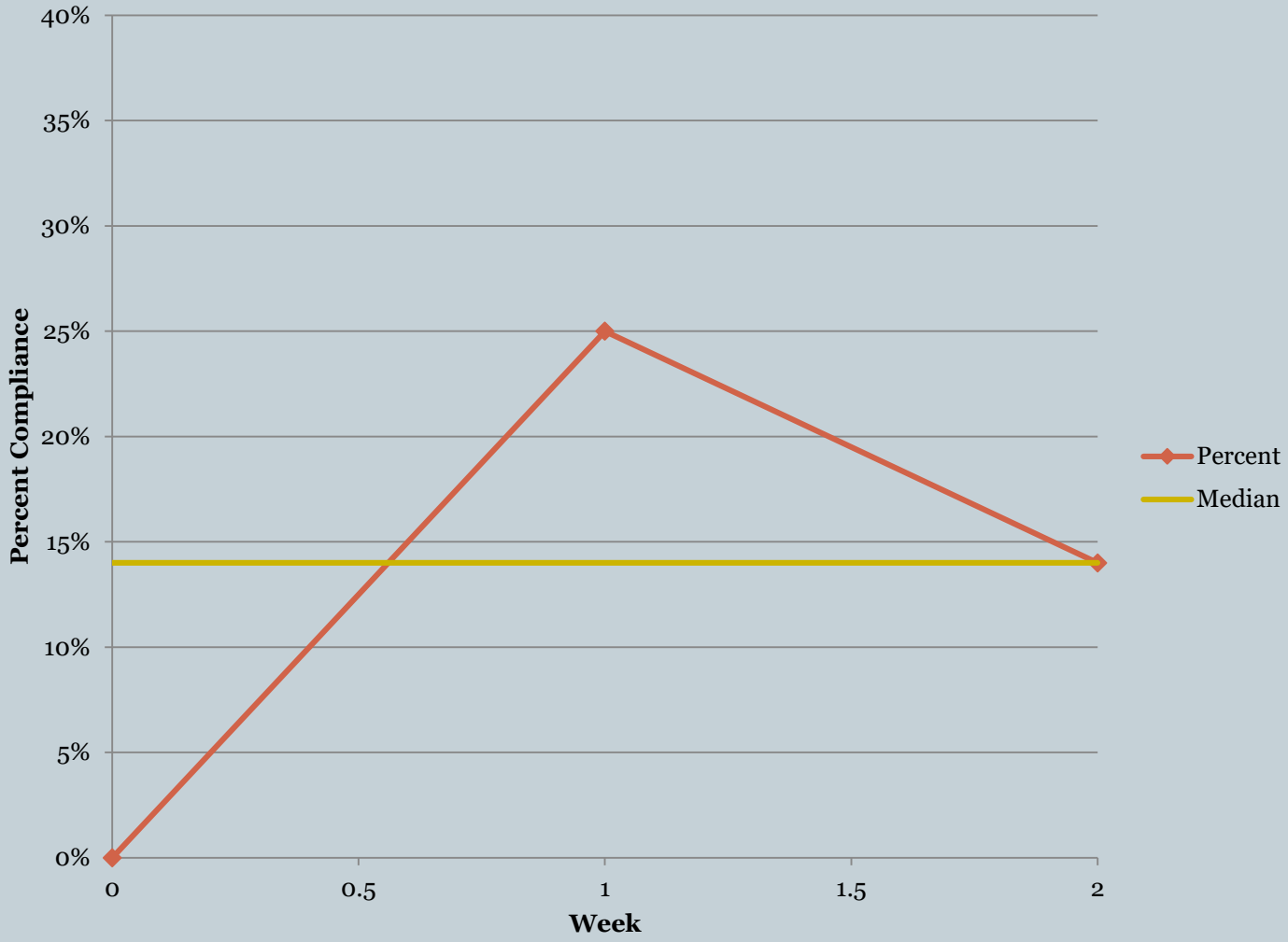

Figure 1: Handover Compliance between March 24 - April 7, 2017.

First Change Cycle

- After first change cycle, change in median handover rate from 0% to 14%
- Barriers identified
  - Residents forgot to call fellow for handover
  - Difficult to find fellow's phone number
  - Fellows were new to service and could not provide handover
  - Off service residents were less aware of QI project
- Forgetting to call for handover identified as main issue
- **Change idea:** stickers added to transfer order sets

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PATIENT CARE ORDERS

Critical Care to Ward Transfer Orders

DATE: _____ TIME (h): _____ PATIENT IDENTIFICATION

YES	NO		Provider Must Check Off Appropriate Orders	SIGNATURE OF NURSE
			Medications	
		38	Preferred route of enteral medications: ☐ Feeding tube: Nasogastric/orogastric/Percutaneous Endoscopic Gastrostomy ☐ po (**choose ☑ one option**): ☐ swallowed whole ☐ crushed in puree	
			Analgesia	
✓		39	**Choose ☑ one option below:** ☐ Patient is being followed by APS. Continue all APS orders. ☐ Patient is NOT being followed by APS. Administer analgesics as ordered below.	
		40	acetaminophen 1000 mg po/feeding tube q6h prn for pain **(TOTAL DOSE NOT TO EXCEED 4 g IN 24h)**	
		41	celecoxib ..... mg po/feeding tube q12h x ..... days	
		42	**opioid:** ☐ HYDROmorphone ..... mg po/feeding tube q2h prn for pain *Available tablet strengths 1 mg, 2 mg, 4 mg, 8 mg* ☐ HYDROmorphone CR (HydromorphCONTIN®) ..... mg po q8h x ..... doses (Do not give via feeding tube. Can sprinkle contents onto food or fluids). *Available capsule strengths 3 mg, 6 mg, 12 mg, 18 mg, 24 mg, 30 mg*	
		43	Other (specify):	
		44	Other (specify):	
		45	**Maintenance Bowel Routine: PROVIDER TO COMPLETE AND SIGN SEPARATE ORDER FORM**	
			Other Orders	
		46		
		47		
		48		
		49		
		50		
		51		

Handover received from:

_____

Data

- Baseline:
  - 8 patients transferred from ICU to ward with zero handover (March 8-14, 2017)
- Intervention (verbal handover) :
  - Total of 33 ICU to ward transfers from start to end of intervention (March 24 – May 13, 2017)
- After sticker implementation (change idea) April 11 – May 13, 2017:
  - 22 patients were transferred with 91% documented handover and 86% compliance to use of sticker.

Results

- Run chart interpretation
  - Shift
    - Six or more consecutive data points either all above or below the median
  - Trend
    - Five or more consecutive points all going up or down
  - Runs
    - A non random-pattern signaled by too few or too many crossings of the median line
  - Astronomical Point
    - Detecting unusually large or small numbers

Examples

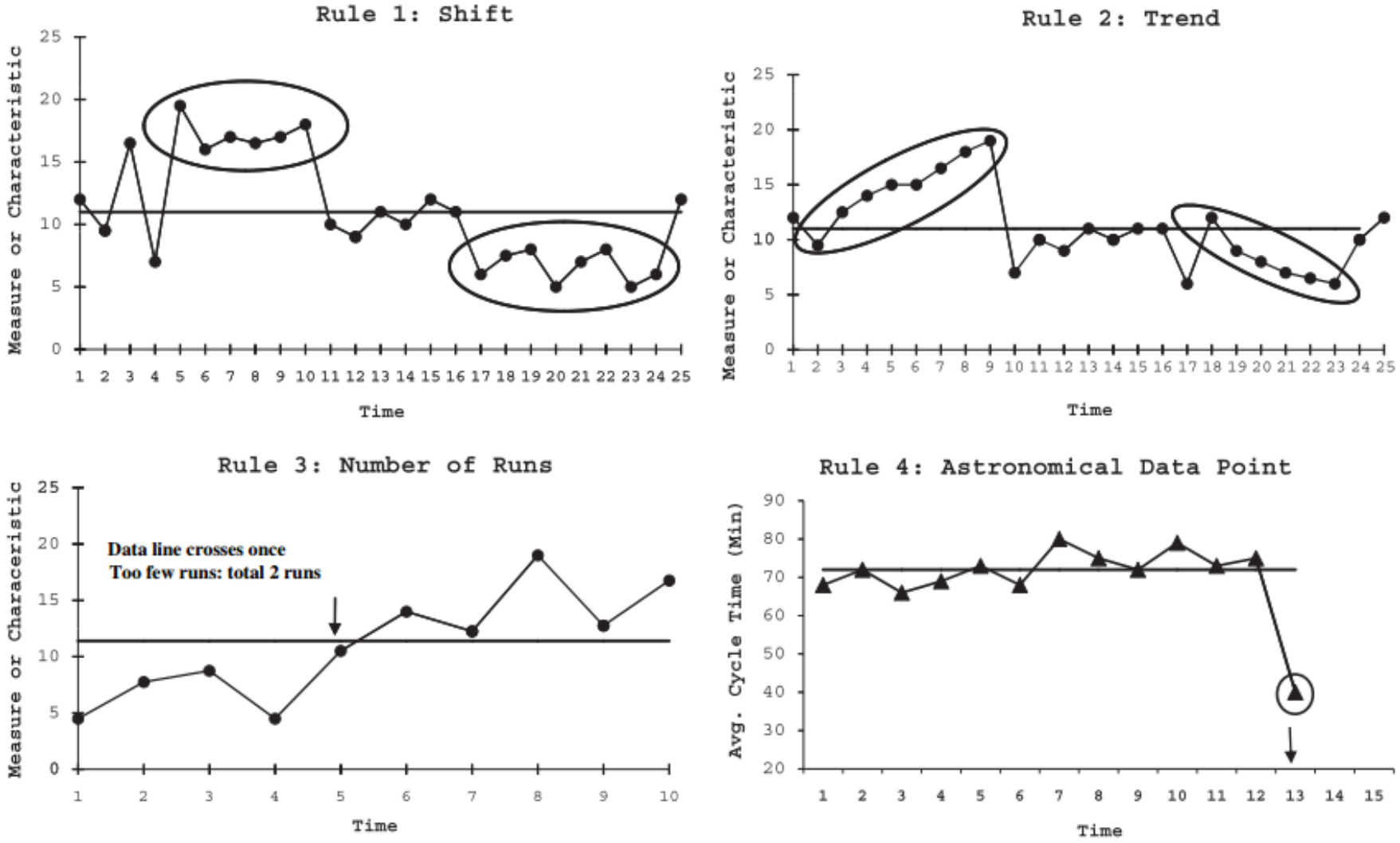

Figure 3 Rules for identifying non-random signals with run charts.

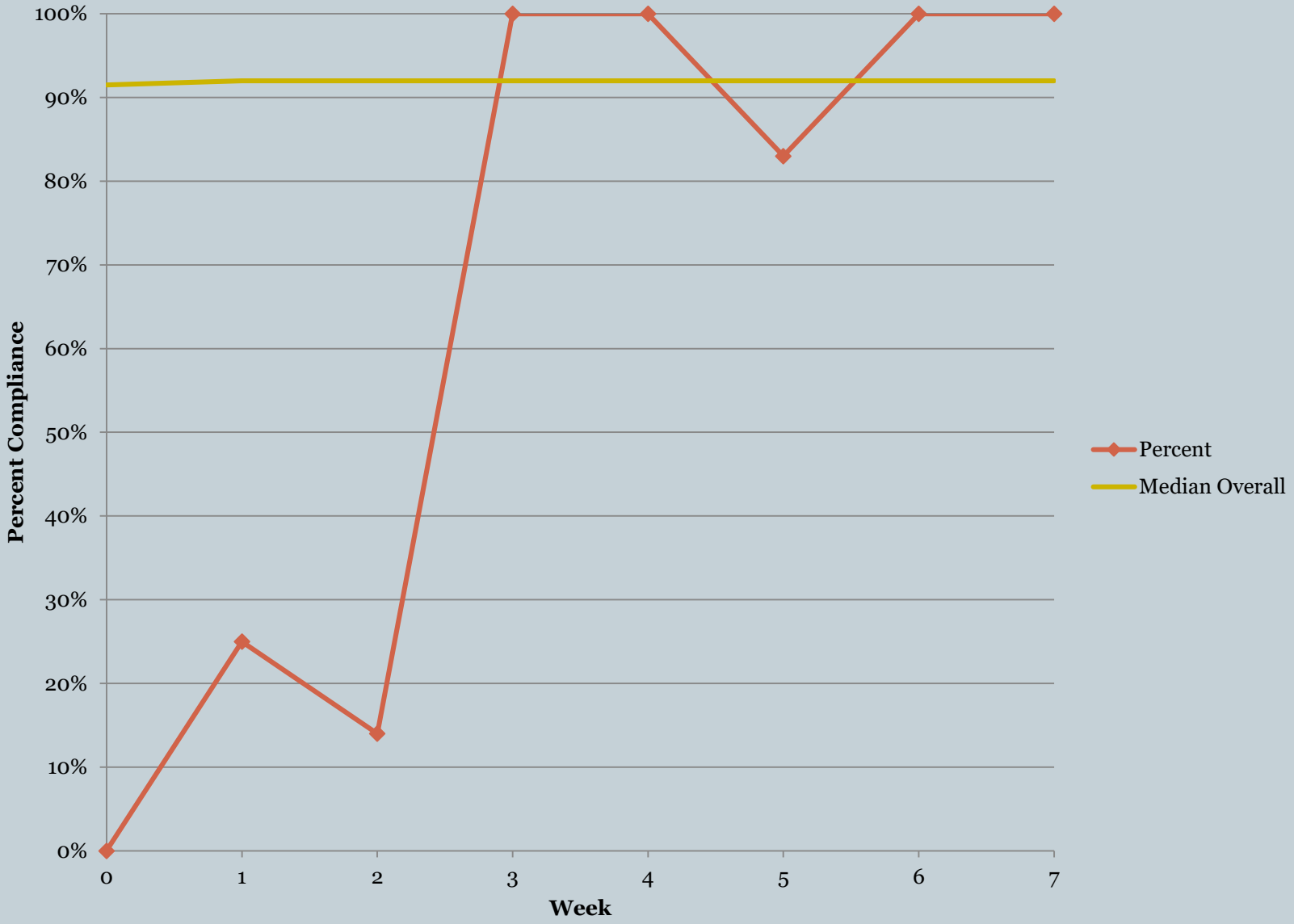

Figure 2: Verbal Handover Compliance Between March 24-May 13, 2017. After week 2, handover sticker implemented.

Results

- Overall, limited by small data set
  - Shift and trend unable to be assessed as <10 data points
- Run
  - Evident after our intervention
- Astronomical point
  - Evident in week 3 after implementation of the sticker
- We believe our change had a true impact on the percentage of completed handovers
- After our first change cycle we met our goal of 80% (median 92%)

Next steps/criticisms

- To improve statistics we would need more longitudinal data
- We measured completion of handover, not quality
  - DRAW handover tool was not used
- Future PDSA cycle ideas
  - Changing transfer orders to incorporate handover more fluidly
  - MD feedback on quality of handover
  - Integrating nurses into handover process
  - Measuring changes in outcomes

References

- Perla RJ, Provost LP, Murray SK. The run chart: a simple analytical tool for learning from variation in healthcare processes. *Quality and Safety in Health Care* 2011;**20:**46-51.