

Benefits Measurement

Automated Anaesthetics Record Keeping



Queensland
Government

Introducing

- Mary Galvin ~ Queensland Health
AARK Project Director
Dip.Prog.Technology; BA(Maths/Econ.Stats); BA(Hum);
B.A.Hons.(Classics); PhD
- Sue McLellan ~ Communio
Senior Consultant
MBA, B.Bus (HA), RN

Background ~ literature, history, studies

- Potential benefits

Greater accuracy	Ferrari 1989; Kalli, Partanen & Hermunen 2002
Increased legibility	Gravenstein 1989
Greater consistency	Ream 1989
Reduced record keeping times	Weinger, Herndon & Gaba 1997
Improved quality assurance and risk management	Edsall 1991; Petry 1998
An aid for medico-legal defence	Gibbs 1989
Provision of data for research	Stanley 1991

- Potential drawbacks

User acceptance of technology in the perioperative environment	Block 1989; Block, Reynolds & McDonald 1998; Minic, Block & McDonald 1989
Time consumed by the anaesthetist-machine interface	Allard et al. 1995

Objectives

- QH Objectives

Time: 2:09:05 PM

Calc. Details
Height: 156
Weight: 88
BMI: 36.16
LBM: 56.06

Protocol

Edit

Help

Confirm

Home

Dermatome Chart

Left

Right

Colour: Pale, Warmth: Warm, Movement: Low, Sensitivity: Pins, Perfusion: Avg, Pulses: Palp, Conscious Level: Drows

Block Level (left): , Block Level (right):

Confirm this Assessment
Colour(Pale-Norm), Warmth(Warm-Warm), Movement(Low-Norm), Sensitivity(Pins-Norm), Conscious(Drows), O2 Flow(33) at the current time

Complication / Event Type

Time: 1:56:15 PM

Calc. Details
Height: 156
Weight: 88
BMI: 36.16
LBM: 56.06

Protocol

Mims

Edit

Help

Confirm

Home

Regional Block Type
Epidural - Lumbar

Regional Drug 1: Bupivac, Route: , Conc. (%): 0.5, Dose (mg): 40, Volume (mL): 8

Regional Drug 2: , Route: , Conc. (%): , Dose (mg): , Volume (mL):

Associate Drug: Fentanyl, Dose (ug): 20

Confirm this Block?
Bupivac. 40 (mg), Fentanyl 20 (ug), Block(Epidural - Lumbar) at the current time

Complication / Event Type

- Study Objectives

Methodology

- Design
- Conduct
- Team



Design

- Measurement indicators
- Checklist for
-OR
-PACU
- Survey



Checklist for OR/PACU

Sequence of:

- Patient arrival
- Patient induction
- Commencement of surgery
- Completion of surgery
- Awakening
- Leaving the OR
- Arrive/Depart PACU



Conduct

2 Phases:

- Before implementation of AARK
- After implementation of AARK
 - minimum 6 months



Team

- Same Measurement Team- both clinicians with experience in OR/PACU
- Joint observations for standardisation on Day 1 in each hospital
- Cross correlation twice daily
- Same day analysis of results



Analysis of observations/measurements

Case Sampling

- Short duration
- Medium duration
- Long duration



Results – Short cases

<u>Pre-implementation (Hospital 1)</u>	<u>Post-implementation (Hospitals 1 & 2)</u>	
<i>Data Entry Duration Summary (Minutes):</i>	<i>Data Entry Duration Summary (Minutes):</i>	
Hospital 1: Pre-implementation	Hospital 1:Post 6 months	Hospital 2-:Post 8 years
Longest Duration = 15	Longest duration = 5.20	Longest duration = .19
Shortest duration = 4.0	Shortest duration = 1.30	Shortest duration = .15
Average duration = 9.5	Average Duration = 2.43 (74.22% reduction data entry)	Average Duration = .16 (93.3% reduction data entry)

Results – Medium Cases

<u>Pre-implementation (Hospital 1)</u>	<u>Post-implementation (Hospital 1)</u>
<i>Data Entry Duration Summary (Minutes):</i>	<i>Data Entry Duration Summary (Minutes):</i>
Longest Duration = 12.5	Longest duration = 8.30
Shortest duration = 8.0	Shortest duration = .58
Average duration = 10.5	Average Duration = 4.33 (58.76% reduction in data entry)

Results – Long Cases

<u>Pre-implementation (Hospital 1)</u>	<u>Post-implementation (Hospital 1)</u>
<i>Data Entry Duration Summary (Minutes):</i>	<i>Data Entry Duration Summary (Minutes):</i>
Longest Duration = 21.0	Longest duration = 10.30
Shortest duration = 9.5	Shortest duration = 5.49
Average duration = 14	Average Duration = 7.27 (48.07% reduction in data entry)

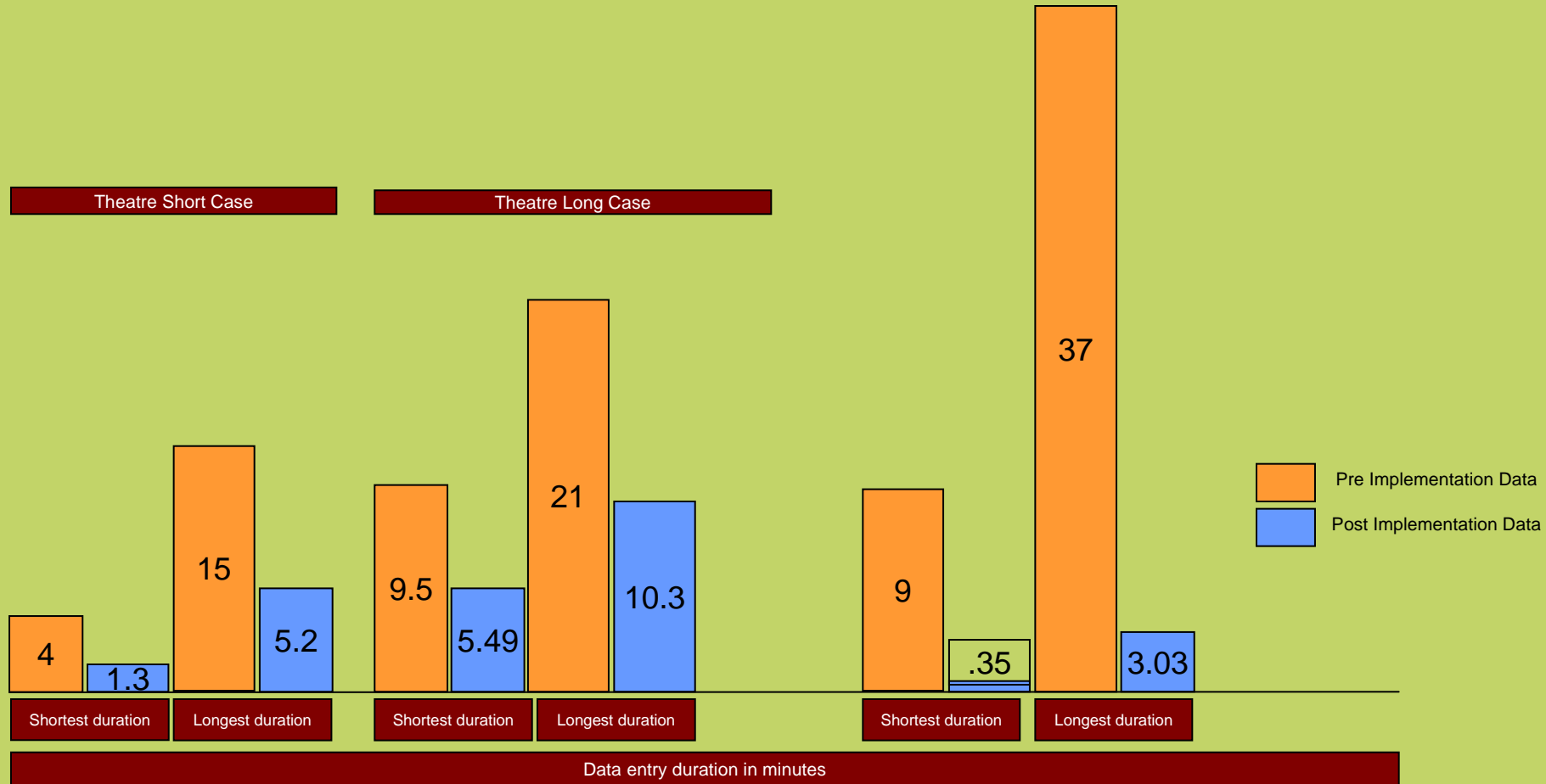
Results Summary

Theatre Data Entry Time

PACU Data Entry Time

Theatre Short Case

Theatre Long Case



Implications

- Time savings for anaesthetists



- Time savings for nursing staff

- Greater benefits for manual sites > early automation

What Next?

- Now
 - Baseline measurement - three more hospitals
- Imminent
 - Ongoing rollout
- Future
 - Further analysis of results
 - Time
 - Quality, legibility, completeness
 - Other realisable benefits?

Conclusion

- Acknowledgements for support and facilitation of the study:
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 - Associate Professor Dr John Archdeacon (CBH)
- Contacts
 - Ms Sue McLellan ~ Communio ~ sue.mclellan@communio.com.au
 - Dr Mary Galvin ~ Qld Health ~ mary_galvin@health.qld.gov.au

