

# Bringing the Data to Life

## Annual Workshop 2014

### The third report: epidemiology

Dr Leona Wilson, Chair



POMRC

Perioperative Mortality  
Review Committee



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# Acknowledgements

- **Committee**

- Cathy Ferguson Deputy Chair, ENT surgeon
- Phil Hider Epidemiologist
- Michal Kluger Anaesthetist /pain medicine
- Jonathan Koea GI Surgeon
- Digby Ngan Kee O&G
- Rosaleen Robertson CQO SX
- Teena Robinson Perioperative nurse
- Jean-Claude Theis Orthopaedic surgeon
- Tony Williams Intensivist

- **HQSC**

- Board:
  - Chair, Alan Merry
  - Chair, Mortality Review Committees, Dale Bramley
- Mortality team: Shelley Hanifan, Deon York, Dez McCormack
- University of Otago (epidemiological analyses)
- Patients, families and clinicians



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# Definition: perioperative mortality

- A death that occurred:
  - Within 30 days or before discharge (whichever is longer)
  - Operative procedure is one requiring anaesthesia (L/R/G)
    - Also termed invasive
  - Procedure includes:
    - Gastroscopies, colonoscopies, cardiac, vascular angiography
    - In designated endoscopy or radiological rooms
- *Under care of a surgeon without operation*
  - *Surgeon – vocational registration in surgery*



# Epidemiology of perioperative deaths

- Uses data from NMDS and NMC
  - Patient not procedure based
- Limitations on data:
  - Not all operations (only publicly funded and some privately funded, not <24 hour facilities)
    - *Means most acute but not all elective*
    - *Probably more healthy group missing*
    - *But missing from both numerator and denominator*
    - *Currently working on delineating this better*
  - Coding accuracy
  - Cause of death underlying not proximate
    - #NOF – underlying = fall
    - #NOF – proximate = PE
  - Patient inclusions may change over time (e.g. more private patients in later analyses) – important in comparing rates between periods



## Colorectal resection: 30 day all-cause mortality / %

	Acute	Elective
45-64 years	2.6	0.2
65-79 years	8.8	1.7
80+ years	16.0	4.0
ASA 1+2	2.6	0.8
ASA 3	8.7	3.6
ASA 4	23.2	7.4
ASA 5	35.6	S



# Cholecystectomy: 30 day all-cause mortality / %

	Acute	Elective
45-64 years	0.6	0.1
65-79 years	1.9	0.3
80+ years	5.4	1.2
ASA 1+2	0.2	0.1
ASA 3	2.3	0.6
ASA 4	12.2	s
ASA 5	43.8	s



# General anaesthesia: day 0+1 all-cause mortality / %

	Acute	Elective
45-64 years	0.4	0
65-79 years	1.2	0.1
80+ years	1.5	0.2
ASA 1+2	0	0
ASA 3	0.5	0.1
ASA 4	3.7	0.7
ASA 5	30.0	s



# Elective ASA 1+2: 30 day all-cause mortality / %

	operation	All NZ (male)	All NZ (Female)
(0-1 years)		0.049	0.036
1-24 years		0.004	0.002
0-24 years	0.01		
25-44 years	0.02	0.009	0.006
45-64 years	0.05	0.042	0.029
65-79 years	0.15	0.213	0.142
80+ years	0.71	1.144	0.980





## Pulmonary embolus-associated: 30 day all-cause mortality / %

45-64 years	0.02	ASA 1+2	0.01	
65-79 years	0.06	ASA 3	0.08	
80+ years	0.14	ASA 4	0.31	
		ASA 5	0.40	
All - elective	0.01			
All – semi-acute	0.01			
All - acute	0.06			



# Perioperative mortality rate (POMR)

- **Proposal to WHO (general assembly 2015) that POMR is collected**
  - Day of operation death rate
  - Prior to discharge death rate
  - Rates for common operations (in data-rich countries)
- Needs to be feasible in LMIC
- Difficulties identifying ‘all operations’
  - Surgical patients
  - All receiving anaesthesia
- Common operations:
  - Needs list relevant to LMIC as well
- Currently working on definitions with Metrics Group of the Lancet Commission Group for Global Surgery



# Why measure POMR?

- Focus on safety of anaesthesia and surgery
  - Use of MMR helped with safety of maternity care
- Allows comparisons:
  - Between years
  - Between countries with similar health care
  - *(less valuable between hospitals within countries)*



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# Recommendations: epidemiology

- ASA to be collected and communicated to all staff for all patients
- Continuing focus on VTE and its prevention
- Incorporate proposed WHO measures into POMRC reporting
- Investigate standardised mortality rates



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# Summary

- POMRC Overview
- How national mortality is measured
- Limitations of data
- Selected results
- Recommendations



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