



CHASM: Can we bridge the divide?

Professor Cliff Hughes
Bringing the Data to Life
Wellington NZ
18 June 2014



Mortality Audits

Statutory expert committees empowered with special privileged information:

- Special Committee Investigating Deaths Under Anaesthesia (SCIDUA)
- Collaborating Hospitals' Audit of Surgical Mortality (CHASM)

Goals of SCIDUA

- To review all patient deaths in NSW which occur under, prior to complete recovery from anaesthesia or sedation, or which arise from any incident occurring during anaesthesia or sedation.
- Identify correctable factors

Membership of SCIDUA

Representatives from:

- Australian & New Zealand College of Anaesthetists
- Australian Society of Anaesthetists
- University departments of anaesthesia

SCIDUA Audit Processes

- Notification of death
- Triage: Did patient recover from anaesthesia?
Was there an obvious non-anaesthetic cause?
- Questionnaire sent to Anaesthetist
- Distribution de-identified case material to Committee members
- Meeting and Classification
- Letter to Anaesthetist
- Analysis of data
- Reports , publications and presentations

SCIDUA Publications

- Annual reports to the Minister
- Contributes to triennial national reporting on safety of anaesthesia
- Published papers on:
 - Prevention of aspiration deaths
 - Encouraged the use of vasopressors to treat hypotension rather than continued fluid loading in hip fracture surgery
 - Highlighted fatal cardiovascular collapse with propofol in high risk patients

Estimated Anaesthetic Mortality Per Administration

	NSW	National
1960	1:5,500 – 1:8,000	
1970	1:10,250	
1984-1990	1:20,000	
1991-1993	1:55,000	1:68,000
1997-1999	1:38,000	1:79,500
2006-2010	1:32,600	

These figures should be interpreted cautiously due to the different methodologies used in estimating the total number of anaesthetics administered. More accurate data on anaesthesia administration were reported by the Australian Institute of Health and Welfare in recent years.

Safety of Anaesthesia

	1960-68	2004-12
Maternal deaths	22 (7%)	0
Patients under 40 years	93 (33%)	17 (5%)
Patients who were "fit and well"	50 (17%)	18 (6%)
Orthopaedic deaths	0	155 (48%)

"Fit and well" refers to patients who were assessed to have an ASA Grade of 1 or 2.

CHASM

- More than 20 years of experience in reviewing surgical mortality
- Formerly known as the NSW Special Committee Investigating Deaths Associated With Surgery
- Renamed as the Collaborating Hospitals' Audit of Surgical Mortality (CHASM) in November 2007
- Adopted the audit methodology developed by the Scottish surgeons for SASM

Purpose of CHASM

- Confidential peer review of deaths which occur under the care of a surgeon
- Facilitate reflective learning for surgeons
- Identify potentially preventable deficiencies of care
- Provide data to inform quality and safety initiatives
- National audit (ANZASM)

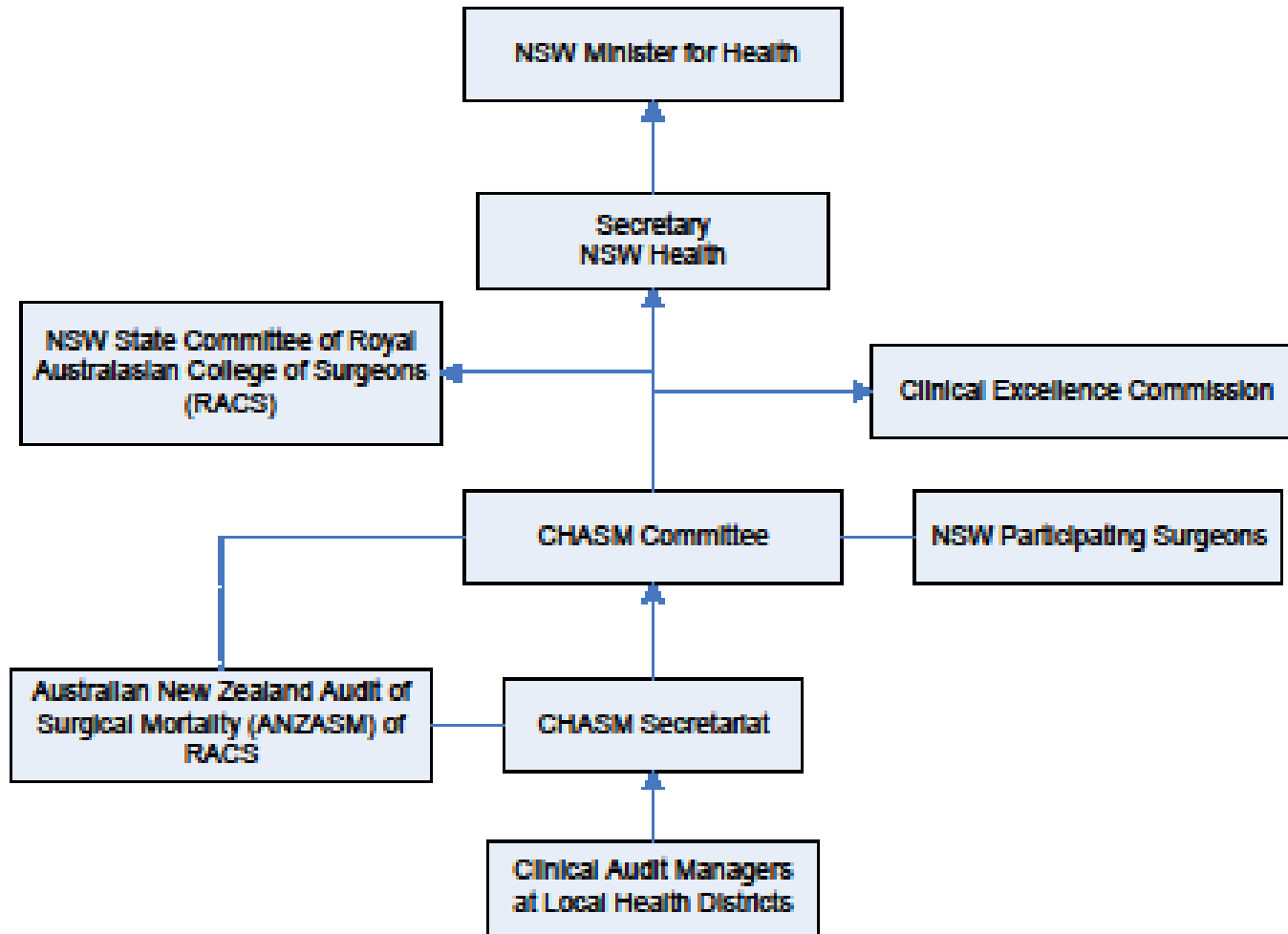
CHASM & RACS

- Audit participation is mandatory to satisfy the RACS CPD program
- NSW RACS State Committee Chair is Deputy Chair of CHASM
- CHASM provides annual de-identified audit data to ANZASM (administered by RACS) for national reporting of surgical mortality

CHASM & RACS

- Audit participation is mandatory to satisfy the RACS CPD program
- NSW RACS State Committee Chair is Deputy Chair of CHASM
- CHASM provides annual de-identified audit data to ANZASM (administered by RACS) for national reporting of surgical mortality

Governance of CHASM



CHASM Methodology

- Notification of deaths from local health districts
 - Patient was under the care of a surgeon or had significant input to care
 - Patient died within 30 days of an operation or during the last hospital admission +/- an operation
- Surgical Case Form completed by the surgeon
- First line assessment
 - Secretariat removes all patient, hospital and surgeon identifiers
 - Peer assessor is selected from the same surgical specialty, but from a different LHD
- Second line assessment (case notes review)
 - Approx 15%
 - Indications:
 - In cases where there is insufficient detail
 - Potential deficiency of care has been identified
 - Anonymity is no longer possible

Potential Deficiency of Care: ACON

- Area for consideration

where the clinician believes care could have been improved or been different, but recognises that there may be debate.

- Area of concern

where the clinician believes that care should have been better

- Adverse event

an unintended 'injury' caused by medical management, rather than by the disease process, and is sufficiently serious to:

- lead to prolonged hospitalisation
- lead to temporary or permanent impairment or disability of the patient at the time of discharge
- contribute to or cause death.

CHASM Feedback & Reports

- Confidential feedback to reporting surgeon(s) on each audited death
- Confidential individualised annual summary report to surgeons
 - with comparison to peer specialty group and all NSW participating surgeons
- Case book with a key theme on:
 - aspiration pneumonitis
 - venous thromboembolism
 - recognition and management of deteriorating patients
 - clinical leadership
 - recognition of postoperative abdominal complications
- Annual report
 - Data reported by surgical speciality, LHD & NSW
 - Individual Reports to LHDs
 - De-identified aggregated data for surgical indicators.
 - Specialties are not identified



CHASM Outputs

	2014	2013	1 Jan 2008 to 28 April 2014
No. of recorded deaths	714	1916	12715
No. (%) of deaths with completed surgical case forms	324 (45.4%)	1369 (71.5%)	8435 (66.3%)
No. (%) of deaths with outstanding surgical case forms	301 (42.1%)	17 (0.9%)	319 (2.5%)
No. (%) of deaths with non-participating surgeons*	89 (12.5%)	530 (27.6%)	3961 (31.1%)
No. (%) of deaths classified as terminal care	83 (25.6%**)	362 (26.4%**)	1963 (23.3%**)
No. (%) of deaths that have completed the audit at FLA	127 (39.2%**)	850 (62.1%**)	5491 (65.1%**)
No. (%) of deaths that have completed the audit at SLA	2 (0.6%**)	85 (6.2%**)	776 (9.2%**)
No. (%) of deaths that have completed the audit	212 (65.4%**)	1297 (94.7%**)	8230 (97.6%**)

* Non-participating surgeons are those who have advised verbally or in writing that they do not wish to participate in CHASM. CHASM does not send a surgical case form to these surgeons. Non-participating surgeons also refer to those who do not return the surgical case form after three reminder letters.

** The denominator used for calculation of percentage is the number of deaths with completed surgical case forms.

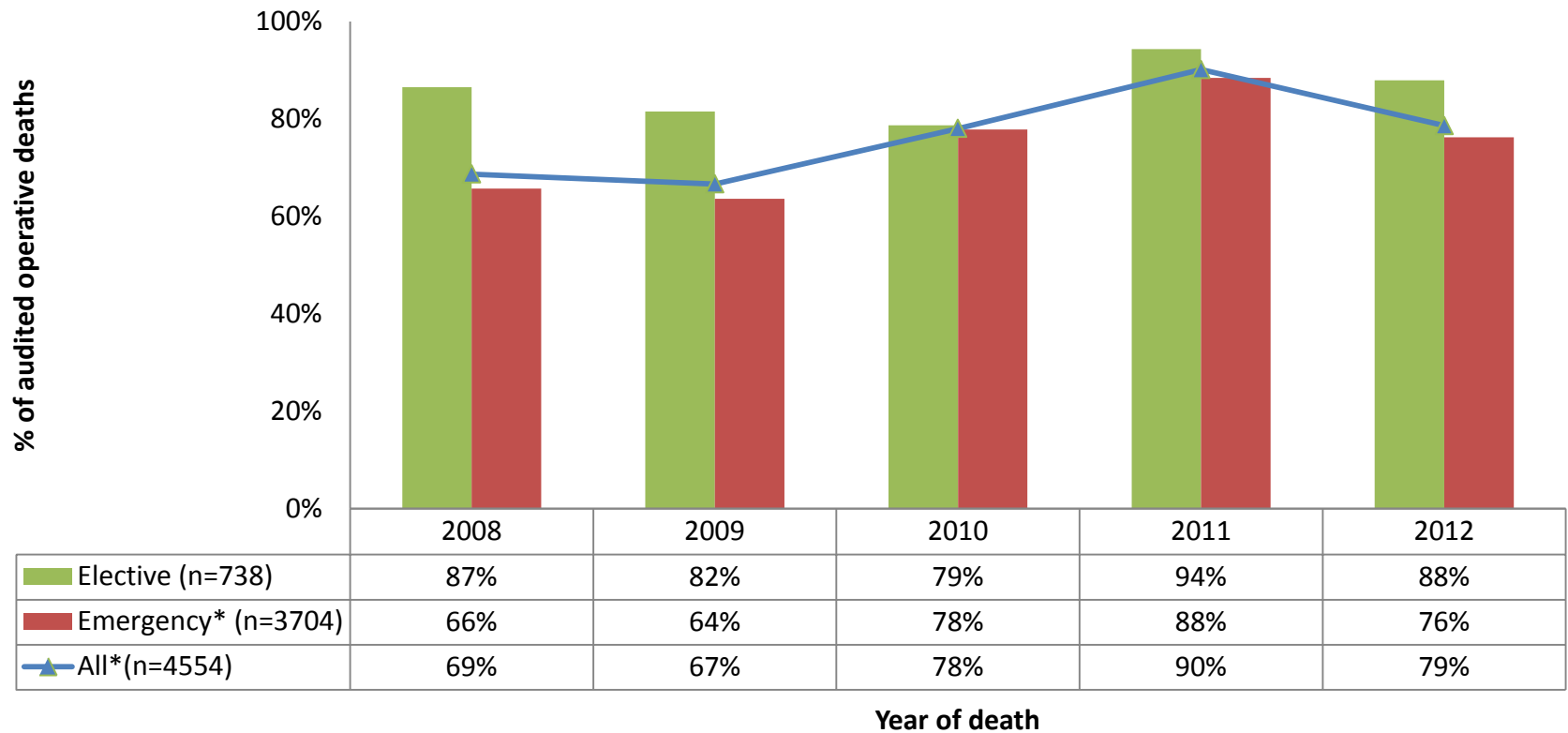
CHASM Quality & Safety Indicators

Tracks 13 surgical indicators:

- Pre-operative delay or error in confirmation of surgical diagnosis
- Delay and/or problems with pre-operative transfer
- Would have benefited from care at ICU or HDU
- Appropriate use/non-use of prophylaxis against VTE
- Elective surgery performed as planned
- Consultant surgeon in theatre
- Definable post-operative complications
- Unplanned return to theatre
- Unplanned admission to ICU
- Unplanned hospital re-admission within 30 days of surgery
- Issues with fluid balance
- Surgical site infection
- Potentially preventable deficiency of care identified by assessors

Reported changes in surgical management of patients

Proportion of audited deaths with consultant surgeon in theatre (operating, assisting or supervising)



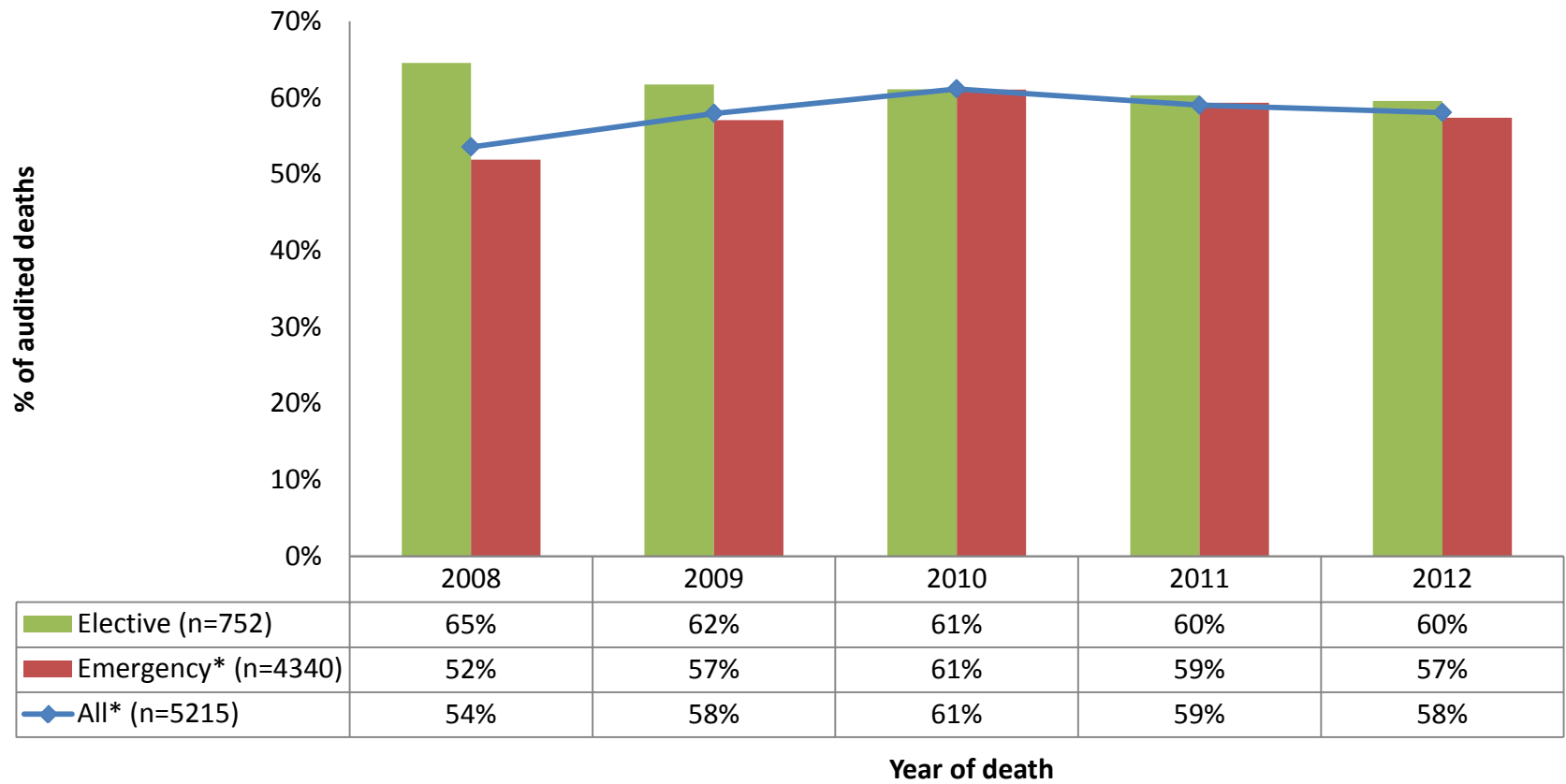
* Statistically significant linear trend.

χ^2 for linear trend (1, N=4554)=7.51, $p<0.01$ for all admissions.

χ^2 for linear trend (1, N=3704)=7.22, $p<0.01$ for emergency admissions.

Reported changes in surgical management of patients

Proportion of audited deaths with ICU care

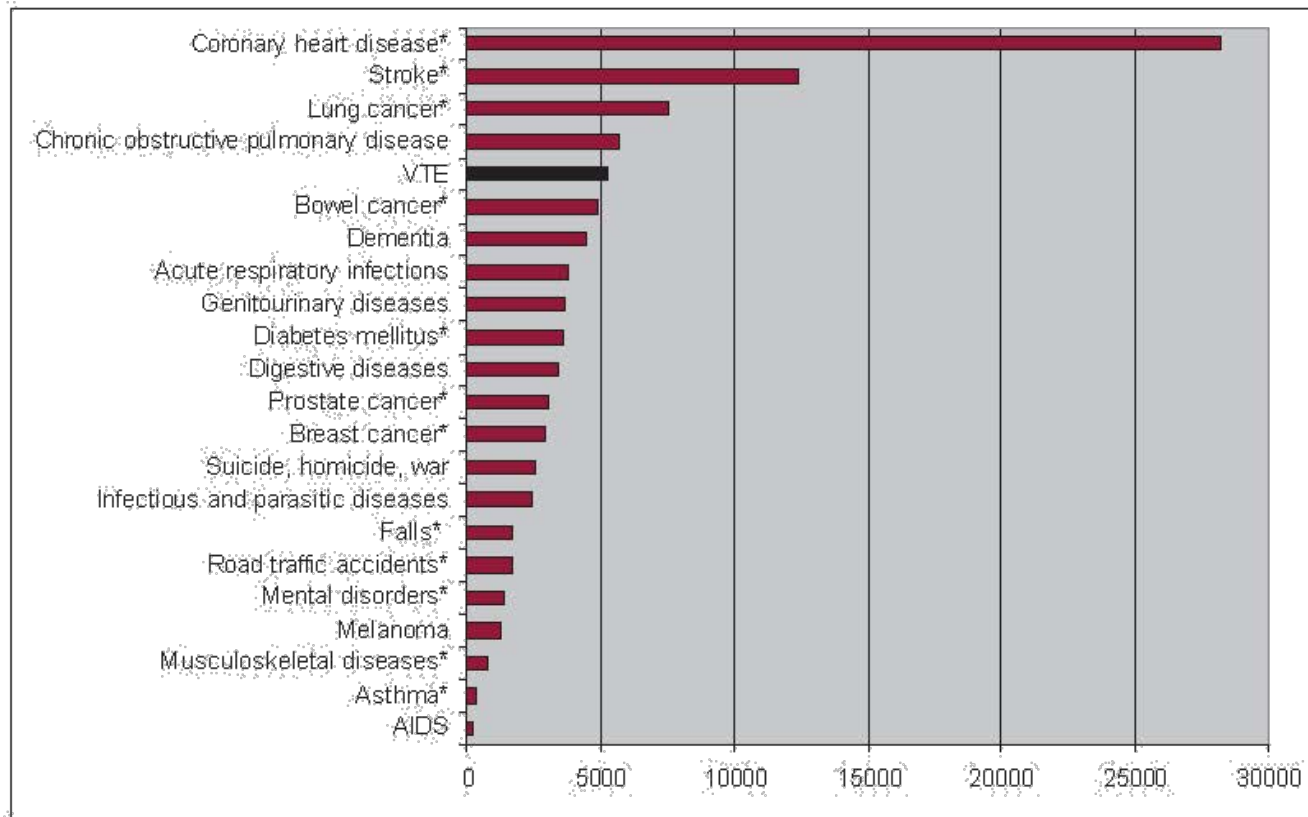


* Statistically significant linear trend.

χ^2 for linear trend (1, N=5215)=3.97, $p < 0.05$ for all admissions.

χ^2 for linear trend (1, N=4340)=5.85, $p = 0.02$ for emergency admissions.

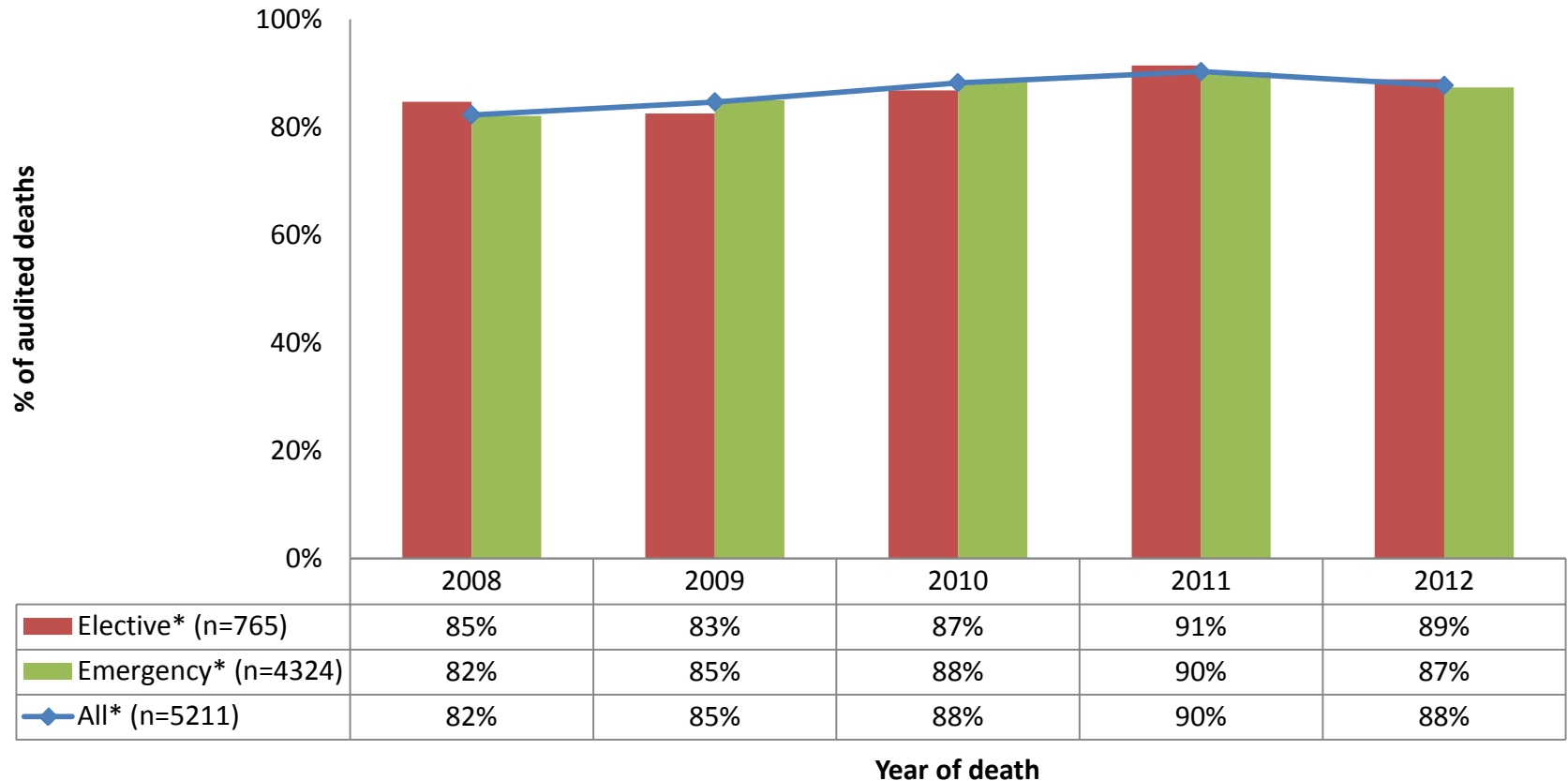
COMPARISON OF DEATHS BY SELECTED CAUSES, 2003



Source: Begg et al (2007) except for VTE (this report) for 2008. *=NHPAs.

Reported changes in surgical management of patients

Proportion of audited deaths with appropriate use or non-use of VTE prophylaxis



* Statistically significant linear trend.

χ^2 for linear trend (1, N=5211)=25.92, $p < 0.001$ for all admissions.

χ^2 for linear trend (1, N=765)=4.03, $p = 0.04$ for elective admissions.

χ^2 for linear trend (1, N=4324)=19.96, $p < 0.001$ for emergency admissions.

The **total cost of absenteeism due to VTE was estimated as \$8.8 million in 2008**, of which \$7.4 million was estimated to be borne by the employer and \$1.4 million by the employee.

Around \$464 million in lost potential tax revenue was estimated to be incurred in 2008, \$460 million due to the lost productivity of people with VTE and \$4 million from the reduced productivity of their informal carer.

Thank you

Questions

For further information:

programemail@cec.health.nsw.gov.au

www.cec.health.nsw.gov.au