

Pre-hospital critical care is an appropriate
use of resource -not

Colin Ferguson

SODIT 2015, Saunton Sands

What is pre-hospital critical care?

PHEM in disguise- pre-hospital emergency medicine

PHEM was approved by the GMC as a medical sub-specialty of the existing specialties of Emergency Medicine and Anaesthetics on 20 July 2011.

1.4.1 PHEM encompasses the underpinning knowledge, technical skills and non-technical (behavioural) skills required to provide safe pre-hospital critical care and safe transfer.



Intercollegiate Board for Training in
Pre-hospital Emergency Medicine

- The Royal College of Surgeons of Edinburgh (Faculty of Pre-Hospital Care)
- The College of Emergency Medicine
- The Royal College of Anaesthetists
- The Royal College of General Practitioners

On scene and transfer care provided by doctor

Doctor provision of on scene and transfer care is an inappropriate use of resource

An unjustified and profligate waste of public funds with no patient benefit

A doctor led conspiracy against the public

All professions are a conspiracy against the laity , medicine the original and best

How to decide appropriateness in public bodies?

+

-

Uses sound
business
judgement

- Considers best use of resources and ways of reducing costs to improve efficiency;
- Embraces and identifies ways to diversify income and improve revenue;
- Makes evidence-informed decisions in a transparent manner;
- Makes decisions in a way which is accountable to self, the University and to our students.

- Reluctance in delivering efficiencies and managing budgets more effectively;
- Decisions and judgements are made without wider considerations;
- Lack of understanding of the strategy or operating outside the strategy/vision;
- Approach is too internally focussed;
- Emphasis on the here and now;
- Showing a lack of awareness of resource use/waste.

Plymouth University Behaviours,
PDR Year Brochure,2015

Evidence-informed decisions

Ways of reducing costs to improve efficiency

Consider best use of resources

Resources

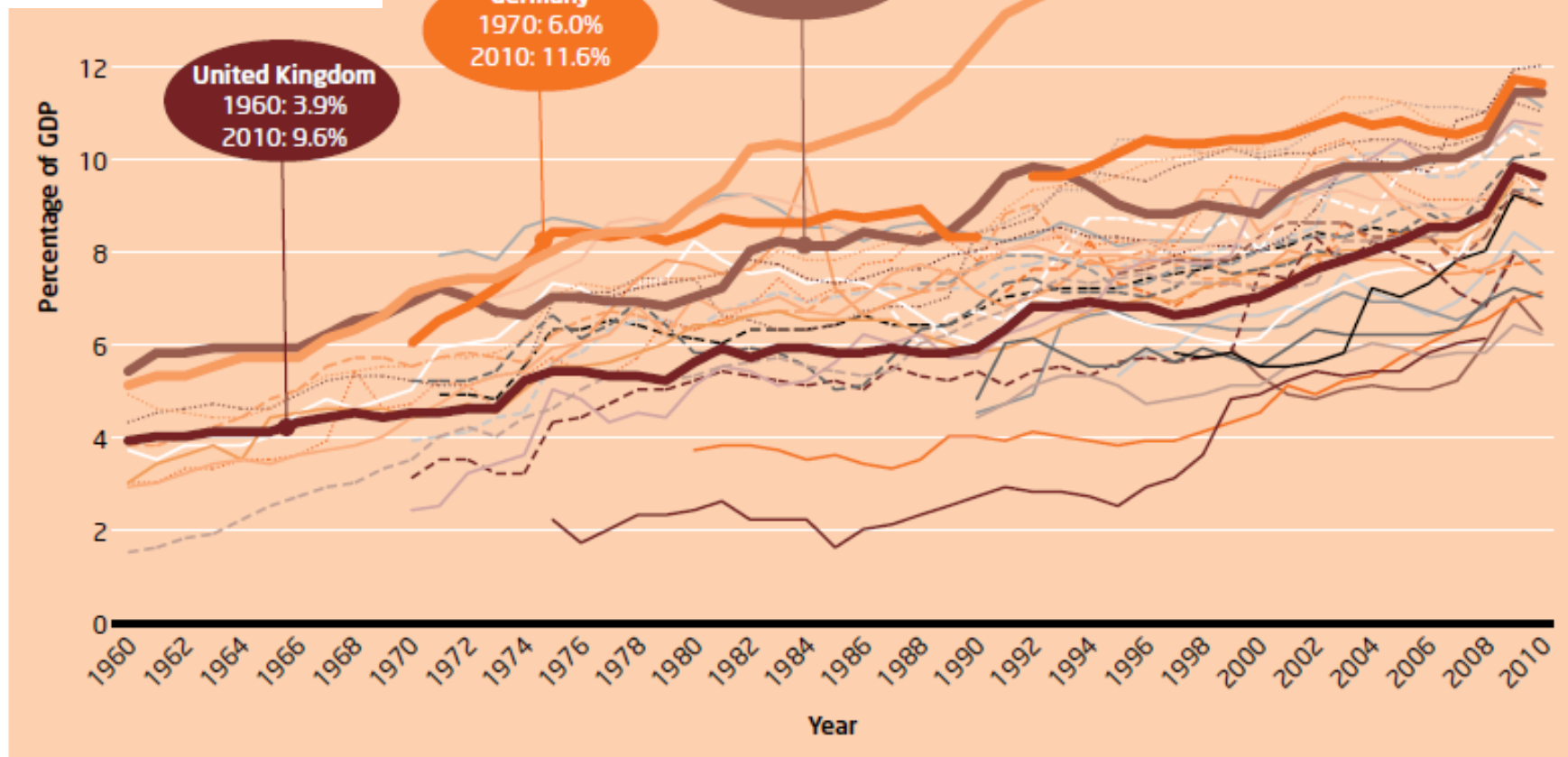
Money
People

Figure 4 Total (public + private) health spending as a percentage of GDP, 1960–2010, all OECD countries

Spending on health and social care over the next 50 years

Why think long term?

Author
John Appleby

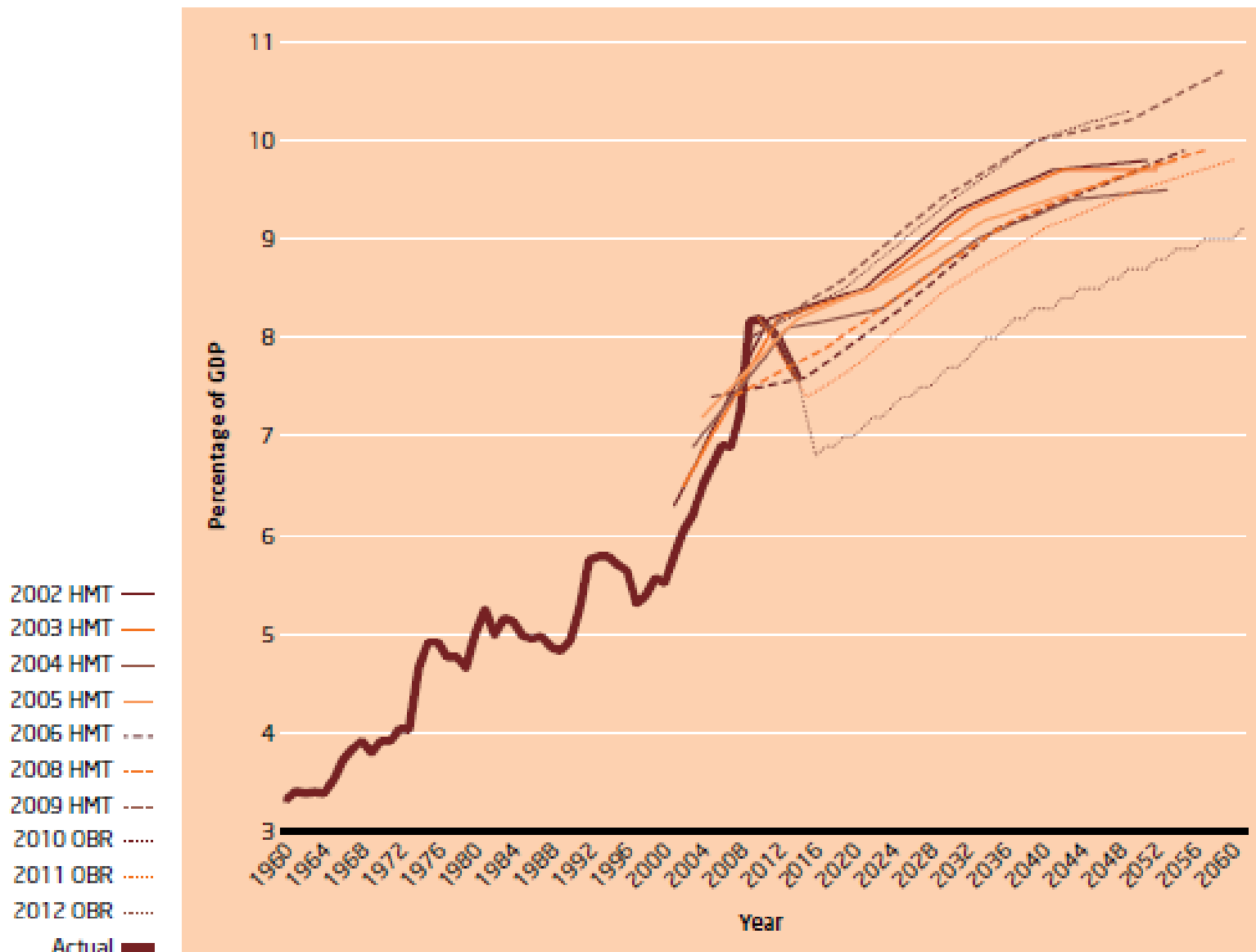


Note: GDP, gross domestic product

Source: Organisation for Economic Co-operation and Development (2012)

© The King's Fund 2013

Figure 24 Long-term UK health care spending projections: reports by the Treasury and the OBR, 2002–12



Notes: HMT, Her Majesty's Treasury; OBR, Office for Budget Responsibility

Source: Various fiscal sustainability reports produced by Her Majesty's Treasury and the Office for Budget Responsibility between 2002 and 2012

Avoid waste

CHOOSING WISELY PROGRAMME -

overmedicalisation

**ACADEMY OF
MEDICAL ROYAL
COLLEGES** _____

helping patients choose care that is:

- *Supported by evidence*
- *Not duplicative of other tests or procedures already received*
- *Free from harm*
- *Truly necessary”*

staff

Global Supply of Health Professionals

Nigel Crisp, M.A., and Lincoln Chen, M.D.

Shortage and maldistribution of doctors-world wide

USA 4% world population
 8% of worlds doctors
 25% of them come from abroad
 17% of worlds nurses

Shortfall of 15% of total population of doctors/nurses worldwide

Table 1. Workforce of Doctors and Nurses According to Country or Region in 2010.*

Country or Region	Population <i>in millions</i>	Doctors <i>in thousands</i>	Nurses	Doctors and Nurses/ 1000 Population	Nurse-to-Doctor Ratio
Country					
China	1338	1915	1,864	2.8	0.97
India	1225	768	1,179	1.6	1.54
United States	309	756	3,064	12.3	4.05
Brazil	195	338	1,278	8.3	3.78
United Kingdom	62	166	626	12.7	3.77
South Africa	50	37	198	4.7	5.30

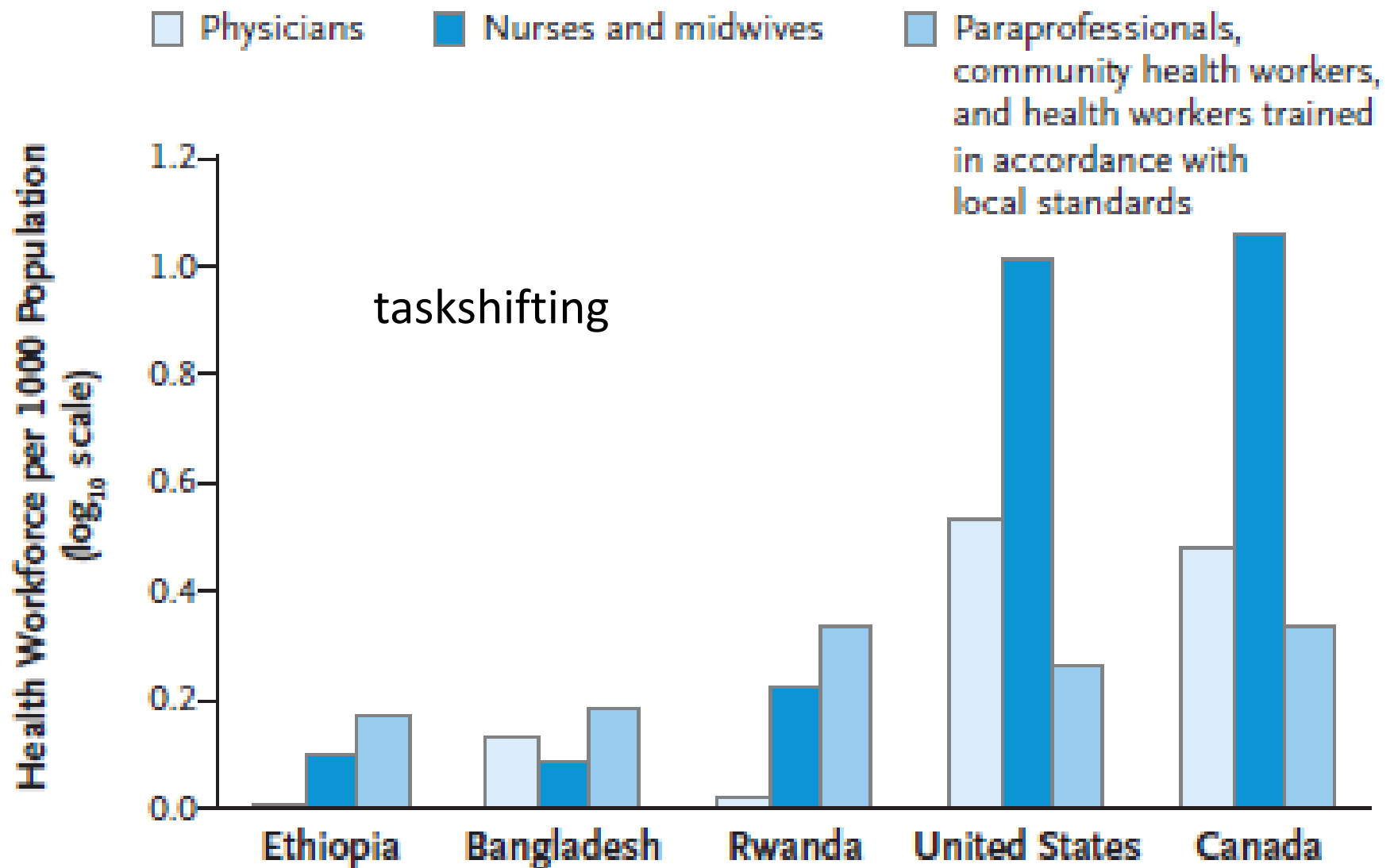


Figure 3. Health Workforce in Five Countries, According to Type of Health Worker, 2011.

What is wrong with the patients needing pre hospital care?

Medical- cardiac arrest
severe respiratory difficulties
chest pain
stroke
other

Trauma-
Other surgical
Psychiatric
Gynaecological/obstetric
other

Pre-hospital critical care by anaesthesiologist-staffed pre-hospital services in Scandinavia: a prospective population-based study

Acta Anaesthesiol Scand 2013; 57: 1175–1185

Intubation- does it make a difference?

REVIEW ARTICLE

Does Pre-hospital Endotracheal Intubation Improve Survival in Adults with Non-traumatic Out-of-hospital Cardiac Arrest?

A Systematic Review

Western Journal of Emergency Medicine

Volume XV, NO. 7 : November 2014

Ling Tiah, MBBS, MPH*
Kentaro Kajino, MD, PhD†
Omer Alsakaf, MD‡
Dianne Carrol Tan Bautista, PhD§
Marcus Eng Hock Ong, MBBS, MPH¶
Desiree Lie, MD, MS.ED#
Ghulam Yasin Naroo, MBBS**
Nausheen Edwin Doctor, MBBS||
Michael YC Chia, MBBS††
Han Nee Gan, MBBS*

Comparison of ET tube and supraglottic airway effects on survival and neurological outcome

5 studies involving 303,348 patients

Conclusion-current evidence does not conclusively support the superiority of ETI over SGA for multiple outcomes among adults with OHCA

Intubation in TBI

Pre-hospital tracheal intubation in patients with traumatic brain injury: systematic review of current evidence

E. von Elm^{1 2*}, P. Schoettker³, I. Henzi⁴, J. Osterwalder⁵ and B. Walder⁴

Br J Anaesth 2009; 103: 371–86

17 studies 15335 patients

Odds ratio for mortality varied from 0.17 to 2.43

Functional outcome estimates were equivocal

Three studies showed higher risk of pneumonia with pre hospital intubation

Overall the available evidence did not support any benefit from pre hospital intubation and mechanical ventilation

Intubation – are doctors better at it?

Patient safety in pre-hospital emergency tracheal intubation: a comprehensive meta-analysis of the intubation success rates of EMS providers

Hans Morten Lossius^{1,2*}, Jo Røislien^{1,3} and David J Lockety^{4,5}

Lossius *et al.* *Critical Care* 2012, **16**:R24

<http://ccforum.com/content/16/1/R24>

58 studies

During RSI physicians success rate 99.1%

non-physicians 95.5%

Consider techniques other than RSI in absence of physicians

No outcome data

Intubation –doctors do it more often

Propensity for performing interventions in pre-hospital trauma management – a comparison between physicians and non-physicians

Mathias C Blom^{1*}, Ludwig Aspelin² and Kjell Ivarsson³

Blom et al. *Journal of Trauma Management & Outcomes* 2014, **8**:3

Physicians 16.3%

Non physicians 6.9%

Intubation- can be done by non-medics

4,871 Emergency Airway Encounters by Air Medical Providers: A Report of the Air Transport Emergency Airway Management (NEAR VI: “A-TEAM”) Project

A National Emergency Airway Registry Study

Calvin A. Brown III, MD*
Kelly Cox, MD†
Shelley Hurwitz, PhD‡
Ron M. Walls, MD*

Western Journal of Emergency Medicine

Volume XV, NO. 2 : March 2014

air medical company ,85 bases,26,000 flights per year

Transfers 60% ,on-scene calls 40%

Paramedics and nurses with airway management training

Quarterly sim sessions- 4 intubations

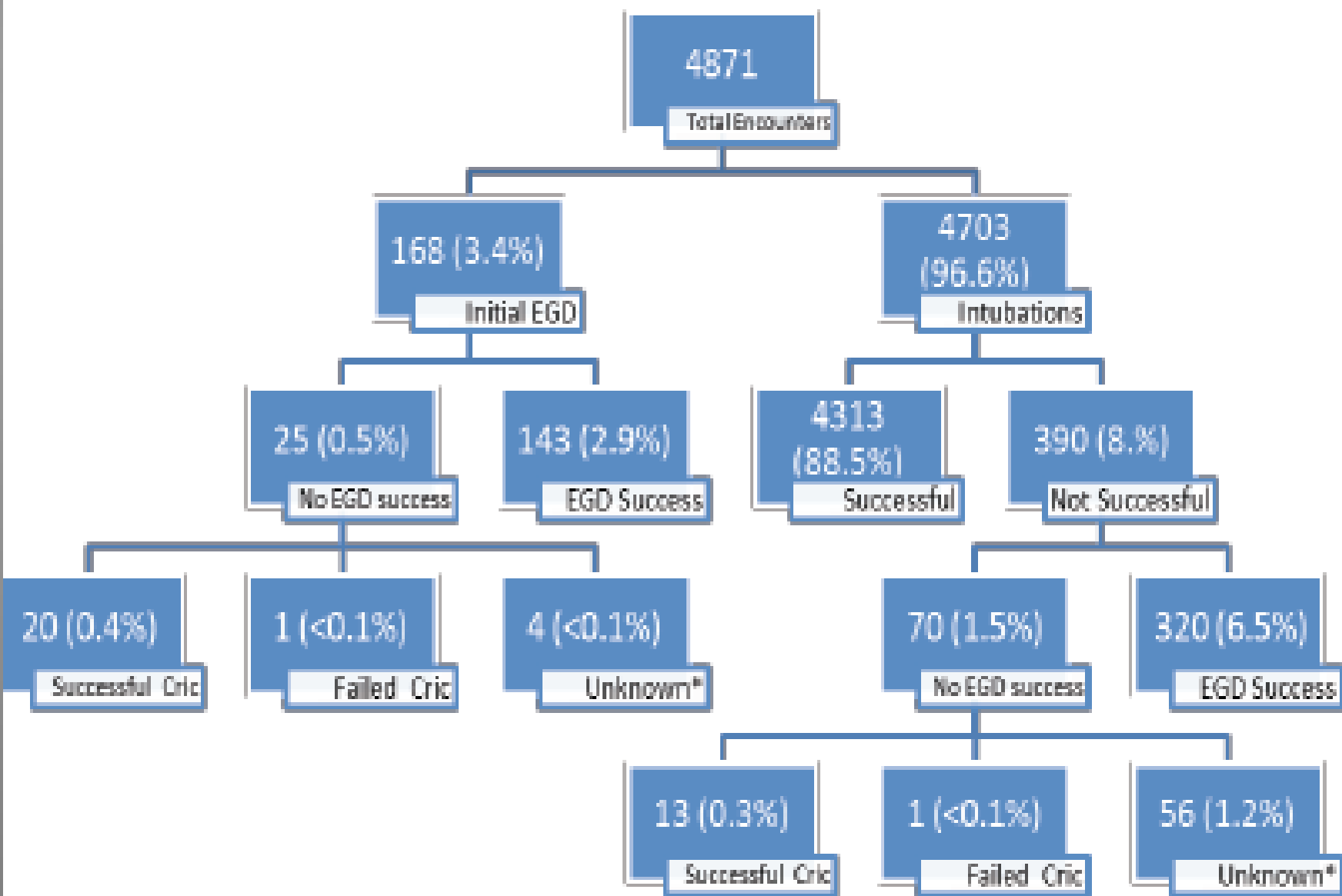
Practitioners logged 25 intubations a year (inc sim)

Standard airway protocols



Figure 1. Coverage map for Air Evac EMS, Inc (2010).

Airway encounters in 36 months



Critical care paramedics

Delivering enhanced pre-hospital trauma and resuscitation care: a cost-effective approach



South East Coast Ambulance Service

2011

Introduce CCPs

Aims-

Meet needs of high risk patients (5-8% of calls)

Save lives

Treat more conditions

In cost effective manner

MICA paramedics in Melbourne ,Australia

Figure 2. A cost-benefit analysis of using critical care paramedics and doctors at SECAMB

Strategic options	Potential lives saved	Improvement in preventable deaths	Total clinical cost at SECAMB per year	Value of life saved
Current CCP model (CCP teams in four PCTs)	4	2.2%	£136,237	£34,059
Developing CCP model (CCP teams in all eight PCTs)	8	4.3%	£272,475	£34,059
Fully developed CCP model (CCP teams in all eight PCTs with clinical and medical oversight)	10	5.4%	£471,703	£47,170
One doctor team 24/7 in the strategic health authority (two teams)	1.5	1.6%	£453,512	£302,341
One doctor team 24/7 in each PCT (eight teams)	12	6.5%	£3,030,412	£252,543

Technology/telemedicine

Article

Pre-Hospital ECG E-Transmission for Patients with Suspected Myocardial Infarction in the Highlands of Scotland

Gordon F. Rushworth¹, Charlie Bloie², H. Lesley Diack³, Rachel Reilly³, Calum Murray³, Derek Stewart³ and Stephen J. Leslie^{2,4,*}

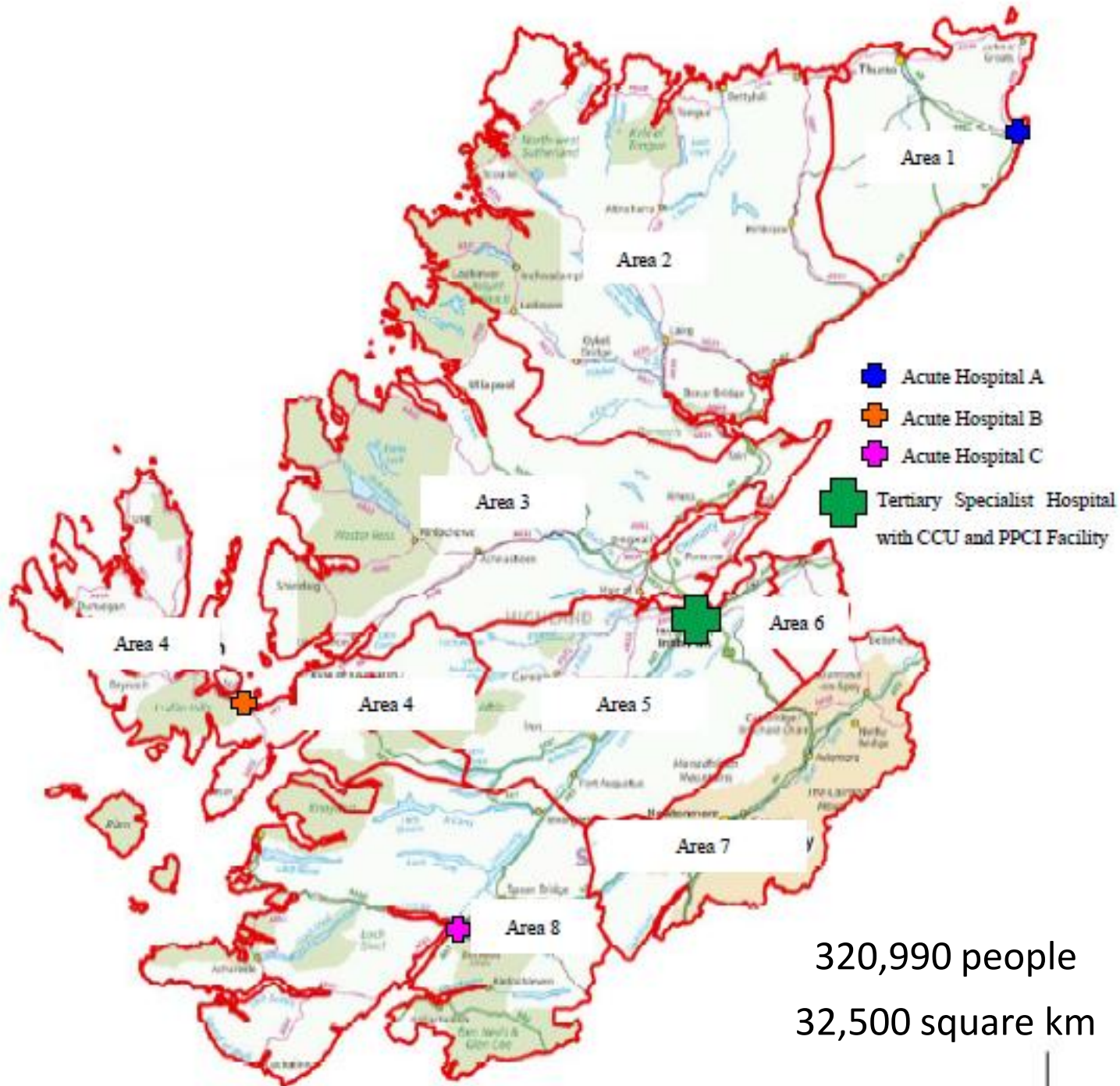
Int. J. Environ. Res. Public Health **2014**, *11*, 2346-2360;

Best treatment for STEMI is PPCI

Don't have it

Next best is immediate pre-hospital thrombolysis

Some reluctance to administer among responders



GP or ambulance attends

Defib sends ecg to phone by bluetooth

Phone sends it to transfer centre

Transfer centre sends PDF to e mail address manned by CCU staff

They respond

Thrombolysis given if appropriate

120 patients per year have STEMI in Highlands

Do the patients get what they need?

Table 3. Proximity to hospital at time of event vs. location and administrator of thrombolysis (n = 84).

Travel Time to Hospital (mins)	Thrombolysis Administration % (n) [±]			Total % (n)
	Pre-hospital Thrombolysis		Hospital Thrombolysis	
	Paramedic	GP	Hospital Staff	
<30	76.5 (39)	5.9 (3)	17.6 (9)	26.2 (51)
31–60	88.2 (15)	11.8 (2)	0 (0)	20.2 (17)
61–90	100 (7)	0 (0)	0 (0)	8.3 (7)
>90	11.1 (1)	66.7 (6)	22.2 (2)	10.7 (9)
Sub-total	73.8 (62)	13.1 (11)	13.1 (11)	100 (84)

Note: * Details on who administered thrombolysis in relation to proximity to hospital only available for 84 out of 123 due to missing data.

Non doctors give effective pre hospital care aided by expert

Physician provided pre hospital care is an inappropriate use of resource

No more effective

Much more expensive

Non doctors (paramedics, physician associates, ACCPs) can do the needful

Supported from afar

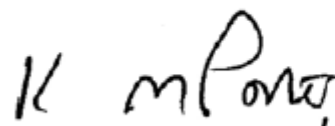
Doctors are needed else where

Medical input required is supervision, training, audit governance and research

"Our patients did not choose us. We chose them. We could have chosen another profession, but we did not. We have accepted responsibility for patient care in some of the worst situations: when we are tired or cold; when it is rainy and dark; when we cannot predict what conditions we will encounter. We must either embrace this responsibility or surrender it. We must give to our patients the very best care that we can - not while we are daydreaming, not with unchecked equipment, not with incomplete supplies and not with yesterday's knowledge"¹

Professor Sir Keith Porter

Chairman, Faculty of Pre-hospital Care, Royal College of Surgeons of Edinburgh and Intercollegiate Board



Self indulgent clap trap

Vote no

Thank you for your attention

Colinferguson@nhs.net