

## ORIGINAL RESEARCH

Public health in Australasian emergency departments:  
Attitudes, barriers and current practicesDiana EGERTON-WARBURTON,<sup>1,2</sup> Andrew GOSBELL,<sup>3</sup> Katie MOORE<sup>3</sup> and George A JELINEK<sup>4,5</sup>

<sup>1</sup>Department of Emergency Medicine, Monash Medical Centre, Melbourne, Victoria, Australia, <sup>2</sup>School of Clinical Sciences at Monash Health, Monash University, Melbourne, Victoria, Australia, <sup>3</sup>Policy and Research, Australasian College for Emergency Medicine, Melbourne, Victoria, Australia, <sup>4</sup>Neuroepidemiology Unit, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria, Australia, and <sup>5</sup>Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Victoria, Australia

## Abstract

**Objective:** To understand the attitudes of consultant emergency medicine physicians and advanced trainees and the perceived barriers to public health interventions in Australasian EDs.

**Methods:** This was a voluntary cross-sectional, mixed-methods online survey of consultant emergency physicians and advanced trainees of the ACEM, conducted between December 2011 and March 2012.

**Results:** Eight hundred and fifty-six ACEM members responded to the survey – a response rate of 33%. A similar number of consultants (70%) and trainees (75%) believed public health initiatives should be provided in the ED. Barriers identified by a similar majority of consultants and trainees to the implementation of public health interventions in EDs included dedicated time available for staff to be involved; available public health resources; available funding; clinical staff skills and expertise in public health; and the availability of staff training.

**Conclusions:** Public health and health promotion are perceived by the majority of emergency medicine physicians as important in emergency

medicine; however, substantial barriers exist to their implementation. Development of an evidence-based approach to public health interventions, which are effective and feasible in the ED environment, will facilitate a more comprehensive approach to public health initiatives in emergency medicine.

**Key words:** barrier, emergency medicine, emergency physician, public health.

## Introduction

EDs have not conventionally been considered as a setting for the delivery of public health initiatives or health promotion. Australian public hospital EDs treated over 6.7 million presentations in 2012–2013,<sup>1</sup> whereas New Zealand EDs treated just over 1 million<sup>2</sup> with many of these patients having preventable illnesses or injuries.<sup>3</sup> For a large proportion of those who visit EDs in Australia and New Zealand, this will be the first contact they have with the healthcare system.<sup>3–6</sup> EDs are uniquely positioned to monitor population health issues and intervene to reduce risky behaviours and promote healthy lifestyles.<sup>6</sup>

## Key findings

- A broad range of public health interventions are being undertaken in Australian and New Zealand EDs.
- EM physicians support public health interventions being provided in the ED.
- Time, resources and funding are the main barriers to the provision of public health interventions in the ED.

Emergency medicine and public health interact over the following domains: surveillance of illness and injuries; delivering preventive interventions; monitoring access to health services by the general population; and advocacy and policy development in public health areas.<sup>3–5,7–9</sup> However, traditionally emergency medicine has focused on managing acutely ill and injured patients.<sup>4</sup> Whereas EDs have the potential to be important providers of health promotion and preventive interventions controversy exists over whether this should occur in EDs.<sup>5</sup>

Questions for public healthcare service delivery in EDs include: what services should be provided, based on efficacy and evidence; what are the cost benefits; who will deliver them; and are there adequate operational and financial resources to support them.<sup>3,4,7,10,11</sup> In addressing these issues, a key enabler for public health in EDs is the attitude of emergency physicians with respect to the role of public health and preventive care in emergency medicine. However, very few studies have addressed this issue. A study of US ED

Correspondence: Dr Andrew Gosbell, Policy and Research, Australasian College for Emergency Medicine, 34 Jeffcott Street, West Melbourne, VIC 3003, Australia. Email: andrew.gosbell@acem.org.au

Diana Egerton-Warburton, MBBS, FACEM, MCLinEpi, MPH, Director; Andrew Gosbell, PhD, BAppSci, Director, Deputy CEO; Katie Moore, BAppSci (Hons), BSocSci (Hons), Research Manager; George A Jelinek, MD, DipDHM, FACEM, Professor and Head, Honorary Professor.

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**TABLE 1.** Profile of study respondents compared with the ACEM membership

	Respondents, % (n)	ACEM members, % (n)	P
Level of training			
FACEM	50.5 (432)	54.4 (1424)	0.045
Advanced trainee	49.5 (424)	45.6 (1193)	0.045
Gender			
Male	55.8 (478)	64.9 (1699)	<0.001
Female	44.2 (378)	35.1 (918)	<0.001
Location			
Australia	87.3 (752)	87.9 (2285)	0.68
ACT	1.4 (11)	1.3 (37)	0.78
NSW	23.8 (200)	23.4 (624)	0.77
NT	1.3 (15)	1.8 (34)	0.33
QLD	19.8 (147)	17.2 (517)	0.10
SA	6.2 (56)	6.5 (163)	0.74
TAS	1.9 (29)	3.4 (50)	0.013
VIC	22.6 (213)	24.9 (591)	0.17
WA	10.3 (81)	9.5 (269)	0.49
New Zealand	10.2 (94)	11.0 (268)	0.54
Overseas	2.4 (10)	1.2 (64)	0.025

directors was limited in its scope and findings,<sup>8</sup> and another focused on gender differences in emergency physician attitudes.<sup>6</sup> There are no similar studies in the Australasian context and there exists a lack of knowledge of public health interventions currently occurring in EDs across Australia and New Zealand.

The aim of the present study was to examine attitudes and practices of emergency physicians and advanced trainees in regard to public health initiatives in Australian and New Zealand EDs. The study also enabled an overview of the range of public health and preventive care interventions being undertaken across Australasian EDs.

## Methods

A cross-sectional survey of Australian and New Zealand consultant emergency physicians (FACEMs) and advanced trainees of the ACEM was conducted between December 2011 and April 2012. The survey was hosted online (SurveyMonkey®, Palo Alto, CA, USA), with the survey link distributed by email to all FACEMs and advanced trainees. The survey was voluntary, with consent implied as participants agreed to commence the survey after reading the study infor-

mation page. The study was approved by the ACEM Public Health Committee for quality assurance purposes and was deemed to be low risk to participants with confidentiality and anonymity maintained.

The survey instrument was original to the present study but was influenced by the National Delphi Study report 'Public Health functions in Australia'.<sup>12</sup> Demographic information was sought along with data on public health activities and interventions occurring in EDs. Attitudes and barriers to public health in emergency medicine were assessed with a 5-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree), with free-text responses also collected. The survey was pilot tested and validated on a cohort of FACEMs and trainees from an Australian tertiary hospital.

Quantitative data were analysed using the SPSS Version 20 statistical package (SPSS Inc., Chicago, IL, USA). Data analysis involved describing proportions with 95% confidence intervals. The Likert scale responses, 'strongly agree' and 'agree', were combined to indicate agreement, and 'neutral' responses were combined with 'disagree' and 'strongly disagree' except for negatively framed ques-

tions when they were combined with 'agree' and 'strongly agree'. Free-text responses were categorised by thematic keywords.

## Results

Survey responses were received from 856 of the total 2617 (33%) ACEM members surveyed. Table 1 compares the demographics of respondents with the total ACEM membership. The predominance of state/country distributions was maintained, whereas overseas respondents, trainees and women were overrepresented in our sample.

Respondents had a positive attitude to public health in EDs (Table 2), with most agreeing that public health is important for the Australasian community (99%), and that public health initiatives should be provided in the ED (72%) (Table 2). Table 3 demonstrates respondent perceptions of the barriers to public health in emergency medicine. The majority of respondents perceived the lack of dedicated time available for staff (92%), and the availability of public health resources (84%) and funding (81%) as barriers to public health in EDs.

Trainees (88%) were more likely than FACEMs (71%) to consider that public health initiatives in their ED are made more difficult by time-based access targets. This is consistent with trainees being more likely to believe that public health services will increase the length of patient stay in the ED (55%), compared with FACEMs (47%).

Thematic analysis of respondents' free-text comments reflected these attitudes, with 61% supportive of the role of public health in emergency medicine, with more time with patients (29%) and more resources (26%) being identified for public health interventions to be effective. In this context, some responses questioned the practicalities of public health initiatives implemented in busy EDs:

This is an area that I find very frustrating – with a [time-based access] target and a busy department it is often difficult to discuss public health issues satisfactorily with patients . . . some colleagues think public health has no place in ED – that isn't our role, but at times I feel frustrated being the ambulance

**TABLE 2.** Overall, FACEM and trainee level of agreement (%) to statements relating to public health and emergency medicine

Attitudes to public health	Overall		FACEMs		Trainees	
	(strongly) agree		(strongly) agree		(strongly) agree	
	%	95% CI	%	95% CI	%	95% CI
Public health is important for the Australian/NZ community	98.6	97.6–99.2	98.1	96.3–99.0	99.2	97.7–99.7
Additional resources would be required for effective public health services in my ED	91.8	89.7–93.5	92.0	89.0–94.2	91.6	88.4–94.0
FACEMs should have access to educational resources on public health for Continuing Professional Development	82.8	80.0–85.3	80.7	76.6–84.2	85.0	81.2–88.4
Public health initiatives should be provided in the ED	72.3	69.1–75.3	69.5	65.0–73.8	75.2	70.7–79.3
It is part of my role as an EM doctor to provide public health interventions	61.4	58.0–64.8	57.8	53.0–62.4	65.4	60.5–70.1
Trainees should be provided with specific public health training	60.2	56.7–63.5	59.9	55.1–64.5	60.5	55.5–65.3
Staff other than EM doctors should be responsible for public health interventions	51.0	47.5–54.4	48.3	43.6–53.1	53.8	48.8–58.8
Public health services will increase the length of patient stay in ED	50.9	47.4–54.3	46.8	42.0–51.6	55.4	50.4–60.3

**TABLE 3.** Overall, FACEM and trainee level of agreement (%) of the barriers to public health initiatives being implemented in their ED

Barriers to public health	Overall		FACEMs		Trainees	
	(strongly) agree		(strongly) agree		(strongly) agree	
	%	95% CI	%	95% CI	%	95% CI
Dedicated time available for clinical staff to be involved	92.3	90.2–94.0	91.9	88.9–94.2	92.8	89.7–95.0
Available public health resources	83.5	80.7–86.0	81.4	77.4–84.9	85.8	81.9–89.1
Available funding	80.5	77.5–83.1	82.8	78.9–86.2	77.8	73.3–81.8
Clinical staff skills and expertise in public health	80.1	77.2–82.8	81.7	77.7–85.2	78.3	73.8–82.3
Time-based access targets (NEAT/SSED)	79.0	76.1–81.7	70.8	66.2–74.9	88.0	84.3–90.9
Availability of staff training	78.6	75.6–81.4	78.9	74.7–82.6	78.3	73.7–82.2
Clinical staff engagement	77.9	74.9–80.7	81.4	77.4–84.9	74.0	69.2–78.2
Access block	72.4	69.1–75.4	71.0	66.4–75.2	74.0	69.2–78.2
Engagement of senior clinical leadership	70.0	66.7–73.1	71.5	66.9–75.6	68.3	63.4–72.9
Support from hospital executive	68.6	65.2–71.8	69.2	64.6–73.5	67.9	62.9–72.5
Engagement with local public health clinicians	59.3	55.8–62.7	58.4	53.6–63.1	60.3	55.1–65.2
Interest of patients in receiving interventions	56.5	53.0–60.0	49.4	44.6–54.2	64.5	59.5–69.3
Evidence for efficacy and/or successful implementation of public health interventions in ED	39.4	36.0–42.9	39.5	34.9–44.3	39.2	34.3–44.4

NEAT, National Emergency Access Target; SSED, Shorter Stays in Emergency Department.

at the bottom of the cliff seeing the same alcohol related/domestic violence presentations or feeling that my asthma education/smoking cessation encouragement etc is falling on deaf ears.

[My] ED [is] currently not adequately resourced to treat acute patients – cannot do, additional stuff.

I have an MPH so obviously have an interest but have to say the volume and time pressures can reduce the

most partial public health advocate to someone who is just bailing a ship.

Respondent comments reflected the barriers identified to public health in the ED, with comments relating to staff culture (20%); lack of staff education (16%); and the lack of evidence base (13%). It was suggested that cultural issues, where ED clinicians do not consider public health as core respon-

sibility for emergency medicine, would need to be addressed through education and awareness:

... change in attitude from medical and nursing staff to regard public health interventions as routine part of care in the ED. This change in attitude should commence at the top, and be enforced by training and education. Public health interventions should be documented in the clinical notes,

**TABLE 4.** Percentage of respondents who reported that their ED has implemented each of the public health functions

Public health functions	Overall		FACEMs		Trainees	
	%	95% CI	%	95% CI	%	95% CI
Monitoring morbidity and mortality	78.2	75.0–81.1	81.8	77.6–85.3	73.9	68.9–78.4
Disease outbreak control	53.7	50.1–57.4	55.5	50.5–60.4	51.7	46.3–57.1
Injury surveillance	53.3	49.6–57.0	59.0	54.0–63.8	46.6	41.3–52.1
Immunisation provision	51.9	48.2–55.6	57.1	52.1–61.9	45.8	40.5–51.3
Disease surveillance	41.4	37.8–45.0	45.3	40.4–50.3	36.8	31.8–42.2
Screening for selected communicable diseases	34.6	31.2–38.2	33.9	29.3–38.7	35.6	30.6–40.9
Developing and advocating for legislation and regulations that protect and promote health	14.5	12.1–17.3	11.7	8.9–15.4	17.7	13.9–22.2
Monitoring the determinants of health	11.8	9.6–14.4	8.4	6.0–11.6	15.7	12.2–20.1
Providing education and training for public health	10.3	8.3–12.8	9.1	6.7–12.5	11.7	8.6–15.6
Developing and implementing quality assurance processes for public health	8.8	6.9–11.1	7.9	5.6–11.0	9.9	7.1–13.6

and should be audited as a feedback mechanism for public health training . . .

It was identified that this would need to be supported by evidence of efficacy of public health initiatives and available resources:

. . . training in those interventions best supported by evidence to provide a benefit meaningful to patients

. . . more time to engage with patients and access to resources to provide information and direct follow up

In general, comments reflected the core business and expertise of emergency physicians in acute care, but also supported the broader role of doctor involvement in public health as being holistic and extending beyond the immediate presentation:

Public health interventions carry potential for huge benefits among the population but as always, time and resources limit the amount that can be done . . . some people's visit to ED focuses their mind on health promotion but others are too distressed . . . to take these issues in at the time of their attendance. I feel that as much good, if not more, can be achieved outside the ED by Emergency Medicine doctors becoming involved in planning and policy decisions, both at organisational and government levels.

When assessing the public health (Table 4) and preventive interven-

tions (Table 5) occurring in respondent EDs, monitoring morbidity and mortality (78%) was the most commonly reported ED public health function, with disease outbreak control (54%), injury surveillance (54%) and immunisation provision (52%) reported by more than half of the respondents. Brief interventions for geriatric falls (73%) and alcohol abuse (60%) were reported by the greatest number of respondents as preventive interventions undertaken in their EDs.

Interestingly, across all of the public health functions and interventions, trainees were 3.3-fold more likely to be unaware (27%) if a function or intervention was available in their ED compared with FACEMs (8% responding 'Don't know',  $P < 0.001$ ).

## Discussion

The present study provides the first binational study of attitudes and perceived barriers to public health in emergency medicine and a snapshot of the public health functions and preventive health initiatives being undertaken in Australian and New Zealand EDs.

Virtually all emergency physicians who responded to the survey considered public health to be an integral part of healthcare in Australasia. The importance of public health functions in EDs was supported by the respondents, in terms of public health interventions provided in the ED and as part of the emergency physician role.

In terms of public health functions, EDs are ideally placed within the healthcare system to identify patterns of illness, infectious disease, injury, risky health behaviours or chronic health problems.<sup>5</sup> Surveillance and reporting systems linked to the ED are common public health functions that can inform preventive health strategy and the rational allocation of health resources.

For many respondents, the question is not whether public health has a role in emergency medicine but how much of a role<sup>7</sup> and how is this resourced. The barriers identified in our study to the implementation of public health initiatives in EDs support this and are consistent with previous studies, including available funding, time, resources and culture.<sup>9,13–16</sup> With appropriate health system planning many of these barriers could be addressed in the short or medium term. The role of emergency clinicians is demanding with increasing numbers of patients, ED overcrowding and limited resources, thus public health measures in EDs must be considered in terms of their impact on 'core business' – diagnosing and treating acute injury and disease, and resources. Promoting the evidence for initiatives that are effective in ED and a supportive culture for implementing such measures are potential enablers to increase emergency physician engagement in public health.

Greater than 12% of Australians over 15 years of age present at an ED

**TABLE 5.** Percentage of respondents who reported that their ED has implemented each of the preventive health interventions

Preventive health interventions	Overall		FACEMs		Trainees	
	%	95% CI	%	95% CI	%	95% CI
Brief interventions for geriatric falls	72.5	69.1–75.7	70.3	65.6–74.8	75.1	70.1–79.5
Brief interventions for alcohol abuse	59.9	56.3–63.5	54.1	49.2–59.1	66.8	61.5–71.7
Brief interventions for family violence	50.1	46.4–53.7	45.1	40.2–50.1	56.0	50.6–61.3
Brief interventions for substance abuse	49.2	45.6–52.9	46.6	41.7–51.6	52.3	46.9–57.7
Brief interventions for smoking	46.3	42.6–49.9	41.0	36.2–46.0	52.5	47.0–57.9
Health promotion materials	41.7	38.2–45.4	40.3	35.5–45.3	43.4	38.2–48.9
Brief interventions for depression	39.5	36.0–43.1	34.4	29.8–39.3	45.5	40.2–51.0
Brief interventions for asthma	38.4	34.8–42.0	31.2	26.7–36.0	46.9	41.4–52.2
Brief interventions for STDs and sexual health	34.1	30.7–37.6	27.5	23.3–32.2	41.8	36.6–47.3
Brief interventions for diabetes	29.9	26.6–33.4	26.6	22.5–31.3	33.9	28.9–39.2
Injury prevention and workplace safety counselling	20.5	17.7–23.7	21.0	17.3–25.4	19.9	16.0–24.6
Brief interventions for hypertension	20.2	17.4–23.3	15.1	11.9–19.1	26.2	21.7–31.2
Specific indigenous health initiatives	20.2	17.4–23.3	20.0	16.3–24.3	20.5	16.5–25.2
Influenza vaccination screening and vaccine provision	16.9	14.3–19.8	16.8	13.4–20.9	16.9	13.2–21.3
Paediatric immunisations	16.3	13.7–19.2	18.3	14.8–22.5	13.8	10.5–18.0
Brief interventions for HIV	15.7	13.2–18.5	11.2	8.4–14.8	20.9	16.9–25.7
Healthy eating and dietary counselling	14.2	11.8–16.9	12.4	9.5–16.1	16.2	12.6–20.6
Lifestyle prescription for healthy living	11.1	9.0–13.6	8.8	6.4–12.1	13.8	10.5–18.0
Pneumococcal vaccination screening and vaccine provision	9.6	7.6–11.9	10.4	7.7–13.8	8.6	6.0–12.1
Cancer screening and referral	9.1	7.2–11.5	7.8	5.5–10.9	10.7	7.8–14.5
Brief interventions for cholesterol	8.8	6.9–11.1	6.3	4.3–9.2	11.7	8.7–15.7
Specific refugee health initiatives	7.6	5.8–9.8	8.7	6.3–12.0	6.2	4.1–9.4
Pap-test	4.2	3.0–6.0	4.1	2.6–6.6	4.3	2.6–7.1

STD, sexually transmitted disease.

at least once a year.<sup>17</sup> This large population give ED intervention a high potential reach, suggesting that even interventions with low effectiveness can have a large impact. The quantity and diversity of patients presenting to EDs and the possibility of reaching cohorts that might have minimal contact with the healthcare system, provide unique opportunities for emergency physicians to engage in preventive healthcare and health promotion.<sup>6,13</sup> This is particularly relevant given that preventable injury and disease are common ED presentations.<sup>18</sup>

Presentations to EDs can potentially provide opportunities to motivate behaviour change, as patients are often in a situation of heightened emotional awareness and concern about their health, described as the ‘teachable moment’.<sup>3</sup> This might allow delivery of a powerful message if the reason for presentation can be linked to preventive health issues, reinforcing patient awareness of the impact they can have directly on health, and the need to change behaviours. Other patients

might be too distressed to coherently consider the broader preventive behavioural factors that might have contributed to their ED attendance, with further evidence required on the efficacy of the teachable moment in EDs to guide appropriate intervention methods.

This opportunity of the teachable moment is being lost due to lack of resources and time; however, screening and simple interventions might be a way forward<sup>9,14,15</sup> to highlight preventive health issues and initiate a patient response. A growing body of research into the efficacy of screening, brief interventions and referral to treatment (SBIRT) strategies in EDs exists, each with varying levels of success.<sup>10,15,19,20</sup> Further evidence is required to elucidate clinical benefit *versus* cost; identify appropriate candidates; understand the impact of resource diversion; and identify effective referral pathways for follow up. The importance of having links to a primary healthcare team to provide the continuity of care should not

be underestimated,<sup>13</sup> with sustained behavioural change associated with health improvements arguably requiring an ongoing therapeutic relationship.<sup>7,13,21</sup> This is not a service that EDs can provide and is best suited to primary healthcare where the general practitioner is able to review patient behaviour and follow-up treatment.

Who is best placed to undertake public and preventive health interventions in the ED also needs to be addressed. Although the majority of survey respondents supported public health interventions in the ED, the clinician group responsible for delivering these interventions remains contentious. Optimally, additional staff would be required to assist in delivering public health interventions, decreasing the preventive medicine workload of ED physicians.<sup>9</sup> One study successfully employed research nurses to enrol ED patients into various intervention programmes and to deliver some interventions, with ED physicians reporting no impact on their

workload.<sup>22</sup> Further studies on the efficacy of other, non-emergency practitioners delivering public health and preventive care in ED settings would assist in addressing this important resourcing issue.

Increased education and awareness of the role of public health and preventive care within the ED are also required. Despite our findings demonstrating that trainees were more likely to provide public health interventions to their patients, trainees were consistently more likely to select 'don't know' as to whether an intervention was available in their ED, compared with FACEMs. This suggests that trainees need to be better informed as to the public health services available at their hospitals. This lack of knowledge on the availability of public health services might result in some patients missing out on valuable public health interventions.

### Limitations

Limitations of the present study include the lack of validation of the survey questions and public health intervention terminology used. A small number of respondents commented that they did not understand some definitions used in the survey, consequently interpretations of some questions and interventions might vary. Despite inviting all FACEMs and trainees to participate in the survey, sample bias is also a potential issue as those with a strong interest in public health and emergency medicine might have been more likely to respond.

### Conclusions

The majority of emergency physicians and trainees believe that public health initiatives should be provided in the ED. Our study suggests that there is a willingness of ED physicians to engage in the provision of public health interventions that might benefit patient outcomes in the presence of adequate resources and funding. A broad range of public health and preventive care initiatives are occurring throughout Australasian EDs, although no consistent approach to implementation is evident. Therefore, evaluation of the evidence

base for these interventions is required, with respect to both their efficacy and cost-benefit. This will ensure a best-practice approach, sensible allocation of limited funding and appropriate direction of resources for public health interventions across the broadest range of Australasian EDs.

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### Author contributions

DEW and AG were responsible for literature search, questionnaire design, data interpretation and manuscript preparation. KM was responsible for literature search, data interpretation, data analysis and manuscript preparation. GAJ was responsible for literature search, questionnaire design and manuscript preparation.

### Competing interests

DEW is a section editor for *Emergency Medicine Australasia*.

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