

# Capacities, practices and perceptions of evidence-based public health in Europe

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Evidence-based methodologies are used to synthesise systematic high-quality evidence and were first applied in clinical practice. Evidence-based public health, however, is still in its early stages. The European Centre for Disease Prevention and Control sought the insight of European organisations working and providing services in the field of public health on current practices, capacities, perceptions and predictions of evidence-based public health. A survey was sent to 76 organisations. A response rate of 36% was achieved, representing 27 organisations from 16 countries. Systematic reviews were the most commonly offered service, followed by health technology assessments and rapid assessments. Of 25 respondents, 13 believed that evidence-based methodologies were poorly integrated into public health. The main perceived barriers to the further development of evidence-based public health included ‘lack of formalised structure or system’, ‘resource constraints’ ‘lack of understanding of evidence-based methodologies by policy makers’ and ‘lack of data’. Nevertheless, 22 of 27 respondents believed that evidence-based methodologies will play an increasingly important role in public health in future. However, several barriers need to be overcome. Consistent frameworks and consensus on best practices were identified as the most pressing requirements. Steps should be taken to address these barriers and facilitate integration and ultimately public health policies.

## Introduction

‘Evidence-based’ refers to the identification and application of the best available evidence to the topic or field in question [1-3]. The concept of evidence-based practice was initially conceived for clinical medicine, i.e. evidence-based medicine (EBM). Its successes paved the way for integration of the basic principles of evidence-based practice into public health. By employing particular evidence-based methodologies, evidence-based public health (EBPH) seeks to base decision making and policy on a combination of “best available evidence with the knowledge and considered

judgements from stakeholders and experts to benefit the needs of a population” [2].

Despite a strong rationale for evidence-based practice and its application and success in EBM, EBPH is generally considered to be a developing field of public health [2,4]. In 2009, the European Centre for Disease Prevention and Control (ECDC) launched the *Flu Technical Report* [5] which contained an assessment of the quality of the evidence base for 27 influenza-related interventions. The results showed that 48% of interventions were based on the lowest grade of evidence (i.e. case reports, small poorly controlled observational studies, poorly substantiated larger studies) while only 7%, the vaccination-based interventions, achieved the highest grade of evidence (i.e. systematic reviews of diverse primary studies rather than primarily modelling, well-designed epidemiologic studies, or randomised control trials).

Methodologies for evidence-based public health are of crucial importance in achieving its mandate of identifying, assessing and communicating current and emerging health threats through searching for, collecting, collating, evaluating and disseminating relevant scientific and technical data [6]. Owing to the importance of evidence-based public health and the perceived value in facilitating its wider application, ECDC launched a survey in 2012 to investigate:

- the capacities and practices of evidence-based methodologies in a selected panel of public health institutes,
- perceptions of the current and future extent of integration of evidence-based methodologies into European public health,
- and perceived barriers to wider assimilation of evidence-based methodologies into European public health.

**TABLE 1**

List of participating organisations, survey on evidence-based public health, 2012 (n=27)

Organisation	Country	Organisation	Country
Federal Ministry of Health	Austria	The Agency for Regional Health Services - Piedmont <sup>a</sup>	Italy
Health Austria GmbH <sup>a</sup>	Austria	Catholic University of Rome	Italy
The Main Association of Austrian Social Security Institutions <sup>a</sup>	Austria	State Health Care Accreditation Agency, Ministry of Health	Lithuania
Belgian Healthcare Knowledge Centre	Belgium	Slovak Agency for Health Technology Assessment	Slovakia
Agency for Quality and Accreditation in Health Care and Social Welfare, Department for Development, Research and Health Technology Assessment	Croatia	Andalusian Agency for Health Technology Assessment	Spain
Ministry of Health	Czech Republic	Department of Health, Basque Government	Spain
Health Technology Assessment and Health Services Research from Public Health and Quality Improvement, Central Region	Denmark	Aragon Institute of Health Sciences <sup>a</sup>	Spain
Statens Serum Institut, National Institute for Health Data and Disease Control	Denmark	Institute of Health Carlos III <sup>a</sup>	Spain
Finnish Office for Health Technology	Finland	National Board of Health and Welfare	Sweden
French National Authority for Health	France	Swedish Council on Technology Assessment in Health	Sweden
German Agency for Quality in Medicine	Germany	Scottish Intercollegiate Guidelines Network	United Kingdom
Federal Joint Committee	Germany	Health Protection Scotland	United Kingdom
Directorate of Health	Iceland	Veterinary College, University of Nottingham	United Kingdom
The National Agency for Regional Health Services <sup>a</sup>	Italy		

<sup>a</sup> Translation provided by the author.

## Methods

Eligible participant organisations were selected from lists of associates and partners of the European network for Health Technology Assessment (EUnetHTA) as well as member lists of the Guidelines International Network (GIN). These networks were selected because they keep extensive lists of organisations working on guidelines relevant to public health and of their activities in the field of EBM.

We identified 120 individual organisations based in the in the European Union (EU) and its accession countries or in the European Economic Area (EEA). Owing to ECDC's mandate, organisations not active in the field of communicable diseases were excluded. Many institutes or organisations, however, are active in both communicable and non-communicable disease evidence generation, and 76 organisations were selected for inclusion in the study.

A survey, composed of thirteen core questions (the list of questions can be obtained from the authors on

request), was developed using a commercially available online software. The survey was distributed to switchboard email addresses for the selected participant organisations. Respondents were given one week to complete the questionnaire. A follow-up email was sent to those who had not responded by the deadline. Text responses were grouped according to major themes.







## Results

An initial response rate of 15% was attained, which rose to 36% (27 of 76) upon completion of the follow-up. We received 28 responses from 27 organisations in 16 countries: 15 EU/EEA Member States and one EU Accession State (Table 1). Responses were collected from a variety of organisations, including federal (national or regional) (n=23), academic (n=2) and private (n=2) institutions.

Of the 28 institutions that responded, 26 offered evidence-based methodology services. Systematic reviews were the most commonly offered evidence-based

**TABLE 2**

Evidence-based methodology services offered by respondent organisations, survey on evidence-based public health, 2012 (n=28)




Answer	Responses
Systematic reviews	 21
Health technology assessments	 20
Rapid assessments	 20
Guidelines	 14
Other 1	 7
Do not employ EBM	 2

EBM: evidence-based medicine.

1 Audits and standards, evidence-based practice reviews, education for practice, scientific notes, summaries of health technology assessments, and decision analysis models.



**TABLE 3**

Evidence-based methodology services offered by respondent organisations, survey on evidence-based public health, 2012 (n=25)

Answer	Responses
Poorly integrated	 13
Sufficiently integrated	 9
Overly integrated	 3

**TABLE 4**

Perceived level of future integration of evidence-based methodologies into European public health, survey on evidence-based public health, 2012 (n=27)

Answer	Responses
Less important	0
Same level of importance	 5
More important	 22

methodology, followed by health technology assessments and rapid assessments (Table 2). Recent examples include *Hepatitis C: Screening and Prevention*, an HTA from the Belgian Healthcare Knowledge Centre [7] and *Effectiveness of prehospital care: a systematic review* from the Finnish Office for Health Technology [8]. Much work was also available in the area of non-infectious diseases. Recent examples include an HTA entitled *Mammography* by the Lithuanian State Health Care Accreditation Agency [9], and a report on *Genetic testing for cardiac transplant rejection* by the Andalusian Agency for Health Technology Assessment [10]. Three organisations reported offering a single service, while nine offered four or more services. Six organisations responded that they had other services in addition to the listed answers. Health Protection Scotland, for example, develop audits and standards and provide education for practice through evidence-based practice reviews, while the German Federal Joint Committee offered summaries of health technology assessments. Other services included scientific notes, and decision analysis models.

While 13 respondents indicated that evidence-based methodologies were currently poorly integrated into public health, nine believed they were sufficiently integrated, and a further three believed that evidence-based methodologies were overly integrated (Table 3).

Responses to the open question about major barriers preventing the use of evidence-based methodologies in public health were grouped and analysed. Six main barriers were identified. 'Lack of a formalised structure or system' (n=8) was the most frequently noted one, followed by 'lack of data' (n=6), 'resource constraints' (financial and human) (n=6), and 'lack of understanding of evidence-based methodologies by policy makers' (n=6). The answers 'too time consuming' (n=4) and 'lack of experience in evidence-based methodologies' (n=3) were also noted.

Despite the number and variety of perceived barriers, the majority of respondents (22) believed that evidence-based methodologies will be used more prominently in public health decision making processes in the future (Table 4).

## Discussion

This survey aimed to assess capacities and practices surrounding evidence-based methodologies in European public health. Specifically, it sought insight into perceptions concerning current and future integration, and associated barriers to wider assimilation of such methods.

Of 27 respondent organisations, 26 offered evidence-based methodology services. That these organisations were distributed through 16 EU/EEA countries is a sign that EBPH is widely practiced in Europe, across several of private, public and academic institutions. Many organisations were active in evidence generation

for communicable as well as non-communicable diseases. The majority of respondents (13 of 25) believed that evidence-based methodologies were insufficiently integrated into public health. These findings reflect those in the available literature [2] and point to a need to foster the growth of EBPH in the area of infectious and non-infectious diseases.

All respondents indicated that barriers exist that prevent greater assimilation of evidence-based methodologies into public health. The most frequently quoted barrier was 'a lack of formalised structure or system' which was quoted by eight of the respondents. This criticism refers to different elements of structural deficiency and conflicting advice about best practices, from a lack of agreed grading systems and adaptation to different situations, to poorly defined communication channels. Efforts are being made to address these issues through harmonising evidence-based practices and advice at international and national level. Internationally, the European Network for Health Technology Assessments (EUnetHTA), for example, aims to stimulate and improve health technology assessment processes predominantly for non-communicable diseases. The Guidelines International Network (GIN) is a global network that intends to improve the development, adjustment, distribution and implementation of evidence-based guidelines. Finally, ECDC has released a technical report on *Evidence-based methodologies for public health* [2], exploring how methods of evidence-based medicine can be applied in public health in the field of infectious diseases. At a national level, many national bodies such as the Health Protection Agency in the United Kingdom produce evidence-based guidance documents. Recent examples include the *Health Care Associated Infection Operational Guidance and Standards for Health Protection Units* [11], and an international workshop on procedures for the development of evidence-based recommendations for vaccinations, organised by the Robert Koch-Institute in Germany. Nevertheless, the majority of respondents still indicate the lack of a formal system coordinating EBPH as the single largest barrier to its proliferation. These findings support those of a working group on evidence-based methodology organised by ECDC in 2011 [2], as well as published results [12,13].

'Resource constraints', 'lack of understanding of evidence-based methodologies by policy makers' and 'lack of data' were the next most frequently mentioned barriers, quoted by six respondents each. Indeed, adhering to the standards set by EBPH can be resource-intensive, in terms of human as well as financial resources. The current trend towards fiscal austerity in some European governments may further increase this problem: Budget cuts to publically funded agencies are likely to affect negatively an already resource-constrained sector, and unlike EBM, in which the majority of large randomised control trials are industry-funded, EBPH is likely to remain funded predominantly by the public sector. Conversely, however, fiscal austerity

could also promote evidence-based public health by encouraging data production on topics of efficiency and cost effectiveness. In addition, well-constructed evidence has international benefits. Sharing of public health evidence could prevent redundant (and cost-intensive) work, and should be further promoted.

For an online survey, the study obtained a reasonable response rate of 36%. We believe the results are of general relevance owing to the number and range of European countries and organisations represented. Bias has been identified with regard to the type of institutes responding to the questionnaire, with public organisations disproportionately represented. Governmental and public organisations accounted for 85% of responses but represented 68% of the organisations originally contacted. Academic institutions were well represented, whereas commercial organisations were underrepresented. Owing to, among other things, differences in funding and the perceptions of regulations, public and commercial organisations may have differing perspectives on EBPH. The findings may therefore not fully reflect the interests of commercial organisations working in EBPH.

The findings of this study add to a growing body of literature concerning the importance of EBPH [4,14-16]. They reiterate the widely held view that EBPH is still underdeveloped [4], but will play an increasingly integral role in public health decision making processes for both communicable and non-communicable disease in the future. Limited frameworks and limited consensus on best practices, lack of understanding of evidence-based methodologies by policy makers, lack of data, and resource constraints were identified as major barriers to a greater integration of evidence-based methodologies into public health as perceived by the participants. Systematically addressing these barriers and facilitating rapid integration of evidence-based methodologies into public health should remain a priority. Evidence-based research can allow policy makers to prioritise resources towards cost-effective policies and should therefore be incorporated into every decision-making process [2,4,17]. Cultivating such an approach through promoting the integration of evidence-based methodologies is likely to improve the targeting of resources to the major health concerns of today [18].

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