Models for schools of public health: A scoping review and synthesis of existing evidence.

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Acknowledgement

Glossary

SsPH –   Schools of Public Health (Plural)

SPH –   School of Public Health (Singular)

PH –   Public Health

APH –   Academic Public Health

Contents

Introduction

To date, existing evidence regarding models (organisational, structural, managerial, administrational) for Schools of Public Health (SsPH) has not been systematically collected or synthesised (Evans, 2009, Sadana et al, 2007).   This study aims to begin to fill that gap by using a combination of rapid review and scoping review techniques to retrieve and assess existing literature to identify potential and existing models, themes and issues and where possible highlight strengths and weaknesses.

Background

Workforce development, based upon high quality education and research, is key to tackling local, national and global public health challenges. The current economic climate in conjunction with imminent changes to the organisation of public health in the UK bring challenges and opportunities for improving the organisation and provision of education and training (Evans 2009).

Central to UK public health workforce development are schools of public health. The schools play a central role in promoting consistent information, skills and guidance across public health training and education (Evans 2009, School of Public Health North East 2010). Globally the lack of evidence or evaluation regarding the strengths, weaknesses and effectiveness of schools of public health stems from a lack of data or processes for comparing quality or impact (Sadana et al 2007). While some schools of public health in the USA, China, Africa and the former Yugoslavia have been described in terms of structure (Fee and Bu 2007, Evans 2009) and some historical case studies are available (Fee 2008, 2003, 1987), little seems to be known about the effectiveness of different models for organising and providing education and training via a school of public health (Evans 2009, Sadana et al 2007).

Given the changing socio-political, economic and international context, it is imperative that the profession has a model for schools of public health, that are effective, efficient and fit for purpose. Existing evidence regarding education for public health practitioners and models for schools of public health has not been systematically collected or synthesised (Evans 2009, Sadana et al 2007). Thus an accessible evidence base to inform future decisions regarding the development of effective schools of public health is lacking. The study reported contributes to closing that gap by providing a rapid synthesis of existing evidence in order to facilitate future, local, decision-making on effective models of educating public health practitioners.

By reviewing available evidence and providing an accessible synthesis, the findings of this study may :

1. Inform future decisions regarding the development of effective schools of public health,
2. Provide the basis for the development of appropriate evaluation strategies for new or changing models,
3. Contribute to the development of a robust knowledge base regarding models for schools of public health,
4. Identify areas for further research.

Brief historical background to the development of schools of public health

Public health developed in England in the 19th century, and was historically led by medicine. The development of multidisciplinary practice arose around the time of the new labour government in 1999, in order to benefit from a wider range of expertise. There were also pressures from the World Health Organisation to provide education that could supply a common language to the new public health, where students from backgrounds other than medicine could be involved. Furthermore, the development of this new public health facilitated the implementation of multidisciplinary public health practice, and the putting in place of the necessary training system (Williamson et al 2004). Despite the existence of some diversity in training content and methods, the importance of multi-agency health promotion coalitions and a strong academic base in public health has been central to the development of public health practice. One of the main issues that remained unresolved related to the regulation of the non medical workforce. As Evans argues (2003) 'two separate but unequal projects have been established: one centres on the continued role of public health medicine, the other the creation of a new multidisciplinary public health professional grouping' (p965).

In 2003 the United Kingdom Voluntary Register was established for non-medical specialists. These specialists have complementary roles in improving population health. However some of the wider workforce has not traditionally been viewed as part of the public health workforce. In 2007 the NHS increased the promotion of multidisciplinary practice and senior posts open both to medical and non medical qualified public health specialists. At the same time, the 'Faculty of Public Health' created common training requirements for all public health specialists. Sim et al (2007) describe the fact that three major categories of public health workforce have been identified: specialist, practitioner and wider workforce, and how training has to be tailored to the needs of these three groups. Further benefits in developing training and implementing the new public health come from a synergy between

training programmes and employment, as well as engagement of academic departments and the third sector.

In the USA schools of public health (SsPH) independent of medical schools were promoted by the Rockefeller foundation with the fist emerging at John Hopkins University around 1916. These were a combination of research institute (as in the German model of the time) and a practice orientated academic and service public health system (of UK). Today in the USA, accredited public health schools generally offer five core disciplines, according to the 'American Association of Public Health Schools', the umbrella organization: biostatistics, epidemiology, health services administration, health education/behavioural science and environmental health (Braine et al, 2007)

Today there are schools, in developing countries such as China, Benin, Brazil, the Democratic Republic of the Congo, Ghana, India, Kazakhstan and Thailand, to name but a few, covering international public health issues and local concerns (see research reports published by the Bulletin of the World Health Organisation e.g. Sim et al, 2007; Fee and Bu, 2007; Braine et al, 2007). Each programme differs on different aspects e.g. length of time, type of degree awarded , disciplines studied, instruction methods (see papers for more details on different schools), prerequisites. Many SPH in developing countries have established collaborations with others in developed nations in order to have an international qualified Public Health workforce. The emphasis now is on the importance of an international public health workforce and collaboration between countries. However, it is recognised that different models of Schools of Public Health respond to different local needs, each emphasizing different aspects of PH e.g. research, community health stations offering both preventive and curative health services, importance to raise the level of health knowledge to rural population etc.

In Eastern Europe the collapse of the former Soviet Union has acted as a driver for the development of new SsPH. Tulchinsky (1999) describes former and existing models of SsPH in the eastern block and outlines aspirations for new schools to assist in developing much needed public health systems in those countries. Previously the predominant model was that of separate departments of social hygiene and public health within universities of medicine, with a few SsPH health linked to ministries of health. Public health systems and SsPH have been emerging and developing in these countries with support by western public health organizations and institutions.

This section has very briefly outlined some of the history of schools of public health, but is in no way comprehensive. For a more detailed history see: Evans (2009), Tulchinsky (1999) and Fee and Acheson (eds) (1991).

Methodology

Aim

This project proposes a literature review to gather and synthesise accessible published literature regarding the evolution and operation of diverse models of schools of public health.

Objectives

- To describe existing models and where possible their development/evolution and operation,
- To identify where possible the challenges and facilitators faced in the development of each model,
- To identify where possible the key components and strengths and weaknesses of existing models.

Rapid Evidence Assessment

The research team consulted an analysis of 14 literature review types and associated methodologies (Grant and Booth, 2009) and a summary of six main types of review reported in the GSR Rapid Evidence Assessment Toolkit (Civil Service, 2009) to determine the most suitable type of literature review for the topic area.

Both the rapid review and the scoping review were applicable. The rapid review assesses what is already known whereas the scoping review provides an assessment of potential size and scope of the literature. The rapid review incorporates appraisal and a narrative synthesis whereas the scoping review includes no formal quality assessment and typically includes a tabular synthesis. Both are time limited and feature an analysis concerned with the quality and quantity of the literature and areas for future research. Both run the risk of introducing bias by limiting the search time frame and scope. Given the short timescale in which to produce the literature review, this risk was deemed to be acceptable.

The research team consulted the GSR Rapid Evidence Assessment Toolkit (Civil Service, 2009) produced by the UK Government's Social Research Service, to provide the guiding structure for developing the topic for, and undertaking , the literature search.

A sample of websites of a range of easily accessible Schools of Public Health in the UK and worldwide were scanned for mission or philosophy statements and any information regarding structure (Appendix 8 page 48). The research team used this information to assist in 'unpacking' the topic of the literature review,

What models of Schools of Public Health are available to inform decision-makers regarding the future development of Schools of Public Health in the UK?

This process identified variation in the ways role and function are described and a lack of consistency regarding aims, objectives and emphasis. In addition there was limited information or clarity regarding organisational or structural models. This enabled the team to specify areas of focus (see Table 1) and adopt a flexible, iterative approach in the literature review.

Table 1 Parameters of literature search

Nature of study area or publication	In some way pertaining to organisational, structural or administrative models of Schools of Public Health
Setting	UK public health education settings and international.
Populations	Decision-makers, senior managers, commissioners, practitioners, educationalists
Date of research	Initially to ensure rapidity the information specialist focussed on recent literature. Due to the small number of articles retrieved this was extended to include research since 1980.
Publication types	Research reports, Commentaries, Editorials, Descriptive reports
Methodologies	Qualitative and quantitative
Language	English language only to ensure rapidity

Literature search

The literature searching was undertaken in January and February 2011. Electronic resources were used to locate relevant literature. These included peer-reviewed, subscription resources available via the University of Northumbria's e Library and free and open-access electronic resources. Appendix 1 on page 23 gives full details of: search terms, strategy and limits, and results.

Screening and selecting studies from titles and abstracts

The research team held screening meetings to jointly review the titles and abstracts in order to determine suitability for inclusion. Attention was given to the 'relevance' of the items and the research team considered an abstract relevant if it indicated that the article may,

- describe a model or models (or development) of schools of public health
- identify aspects, facets or characteristics of schools of public health
- focus on structural, organisational or administrational aspects of SsPH
- identify or describe: strengths, weaknesses, challenges, barriers or facilitating factors, in the development, structure and organisation of SsPH

As anticipated, relevant articles were small in number, varied in type and quality, and included: studies, commentaries, editorials and discussion papers.

References of each article were checked to identify further relevant items and, where applicable, a cited reference search and an author search were undertaken in Web of Knowledge. This additional searching resulted in a small number of additional items, some outside the original date range but deemed relevant when screened for inclusion as above.

Ranking of the full text articles
Full-text articles of references deemed relevant were obtained. The researchers then ranked the full text articles using a checklist (Appendix 6) and ranking protocol (see Table 2). The checklist was developed from the original project proposal, exploration of the websites (Appendix 8) and information gathered during the screening process. This was used in conjunction with the ranking protocol to assist the first reading of the full text articles and to rank the items. Given the diversity of items retrieved, and the mix of rapid and scoping review approach being used, quality was not formally assessed.

Table 2: Ranking protocol

1. Essential	Talks specifically about models for schools of public health, including roles, structures, organisation and functions.
2. Useful	Mentions or discusses SPH but is not specifically focused on models for SPH (be they organisational, or structural/functional). May contain some explicit information regarding one or more of the following: the philosophy or missions of SPH, their roles, functions and structures.
3. Informative	Mentions schools of Public health but without detail. Much of the information regarding models, structure, function, organisation and scope of SPH is implicit. May contain historical, political and or cultural contextual information about the development of Schools of Public Health or educational and political trends related to public health which may have influenced the development of SPH.
4. Out of scope	About other PH issues with only fleeting mention of SPH, for example mentions or discusses SPH but is predominantly focused on specific educational courses.

Data extraction
Data extraction and synthesis was undertaken iteratively on all items ranked: 1. Essential, 2. Useful and 3. Informative. Items ranked as 4 'out of scope' were excluded. A data extraction proforma listing the main topics or issues of relevance was developed drawing on: the original project proposal, the checklist and topics emerging from the screening and ranking processes. The proforma was flexible allowing the researchers to tailor categories as

appropriate to specific articles while attempting to maintain a certain level of consistency. Given the variation in items retrieved and reviewed summaries of pertinent points from the articles were also developed and are provided in Appendix 7 page 34 .

Synthesis

Pertinent points were compared and thematically analysed independently by each of the two researchers in order to identify and describe:

- the models of schools of public health described across the literature
- main themes issues, characteristics or topic areas
- any strengths, weaknesses, challenges, barriers or facilitating factors, in the development, structure and organisation of schools of public health.

The researchers then came together to compare findings and revisit areas of uncertainty, the findings from the synthesis are presented in the following sections.

Findings

Models identified

A range of models for schools of public health were identified in the literature with most attention and detail relating to the USA accredited SsPH. However, there is a lack of consistency in the description of models both within and across the publications which renders the development of comprehensive and comparable descriptions difficult if not impossible and this is reflected in the following tables. This 'comparison difficulty' also applies to any attempt to assess or compare the impact of different models of SsPH. As Evens (2009 p448) highlights with regard to assessing the quality or impact of different models of SsPH *'there is no easily available data set on which to make comparisons'*. Some authors are explicit about certain features of SsPH (for example the organisational, structural and administrational aspects) while others briefly touch these. Other characteristics such as the philosophy or focus of a school, or the PH identity of graduates, or the disciplinary emphasis and culture of the school are also mentioned in some items reviewed. However rather than describing or discussing issues related to actual SsPH some emphasise aspirations for new or reconfigured SsPH.

Notwithstanding the above caveats, using the models outlined by Leeuw (1995) as a starting point and drawing on the articles reviewed a series of descriptions have been formulated as set out in the following tables.

Outline of the models and relevant points

Model of SPH	1. University of Medicine (Former communist countries)	Main items / authors
Location / structure	PH training allocated to department of Hygiene or Social Medicine	Leeuw (1995)
Issues of PH Identity	PH identity of professionals / graduates / faculty closely aligned with medicine	

Model of SPH	2. Within Medical school	Main items / authors
Location / structure	Med. School embedded in larger university	Leeuw (1995) Tulchinsky (2002)
Training / education	Departments of PH mostly offering Post Grad education and training. May provide: undergrad training, MPH, PhD	
Issues re education	Staff and resources restrict education offered	
Disciplines	Insufficient Multi disciplinary programme and faculty	
Issues of PH Identity	Tends towards medical profession model Medically orientated PH	
Challenges / weaknesses	May lack prestige in hierarchy of med schools Lacks full academic status and potential of graduate school of PH	

Model of SPH	3. SPH in a non medical school	Main items / authors
Mission / philosophy	London School of Hygiene and Tropical Medicine mission statement ' to contribute to the improvement of health worldwide through the pursuit of excellence in research, postgraduate teaching and advanced training in national and international public health and tropical medicine and through informing policy and practice in these areas'	Leeuw (1995) Tulchinsky and Bickford (2006)
Location / structure	PH training based in non medical schools e.g. social sciences or engineering The LSHTM example of a free standing SPH within a university but not within a medical school	
Issues re education	No MPH provision Restricted to specific themes health education, health promotion, environmental health	
Issues of PH Identity	Lack of PH identity and tendency for graduates to look to own discipline e.g. health psychology / sociology	
Links to community / service	(LSHTM) Engages in outreach to developing and transition countries	

Model of SPH	4 Multi school programmes	Main items / authors
Location / structure	Horizontal structuring across multiple institutions. SPH at Toronto as example which encompasses a network of researchers, educators and practitioners nationally and globally.	Leeuw (1995) Moloughney and Skinner (2006)
Training / education	Offering PH specialisations to a range of professions and disciplines (SPH Toronto) 5 themes underpin the research. Education programmes have a 4 phase model integrating CPD with flexible masters. Research training at both master's and doctoral level.	Mowat and Moloughney 2004
Disciplines	(SPH Toronto)This model is broad based, integrative and interdisciplinary	
Issues of PH Identity	PH identity may remain underdeveloped	
Advantages / strengths	Staff and students more sensitive to other disciplines	
Challenges / weaknesses	Weaknessmay lie in managerial complexity Issue re structure: is a virtual school of PH a 'school' or distributive learning model? Given geography of Canada there have been a number of positive experiences with distributive learning models involving collaboration amongst multiple institutions without a formal school structure	
Reccomendations for this model	Mowat and Moloughney (2004)Suggests for Canada uncertain if USA model will be adopted or if regional or national consortia may be a way forward for meeting the need for coordination of workforce training and pooling of resources. Suggests these consortia may provide full range of training, professional graduate programmes, mutual recognition of credits and possibly shared participation in distance learning	

Model of SPH	5 Linked to national ministry of health	Main items / authors
Location / structure	Training arm of ministry Entirely under the authority and management of the health authority (national or regional depending on country)	Leeuw (1995)
Training / education	Almost exclusively offering post. Graduate programmes in accordance to needs as defined by government	
Issues of PH Identity	PH identity of those trained strong –they are the elite	
Weaknesses	Links with academia but not formalised	

Model of SPH	6 A University /consortium of universities as national SPH	Main items / authors
Location / structure	Training arm of ministry More formal link between health authority / ministry and university / HE sector Horizontal structuring across institutions	Leeuw (1995) Tulchinsky (2002)
Training / education	Ministry designates multi school programmes. Programmes focus on multi professional student body	
Issues of PH Identity	Elite may emerge but may not see themselves as PH specialists	
Advantages / strengths	Direct link to government eases research funding Serves the need of the ministry & maintains academic integrity	
Challenges / weaknesses	Weakness in managerial complexity Requires special attention to governance, degree granting, financing, faculty location, development, and many other issues of complex multi-organisational network.	

Model of SPH	7 Stand alone research institute	Main items / authors
Training / education	Offering occasional , market orientated specialist PH courses	Leeuw (1995) Potter and Eggleston (2003)
Issues of PH Identity	Absence of professional PH identity	
Advantages	Advantage, education in form of innovative applied research	
Challenges / weaknesses	Disadvantage, absence of professional PH identity Responsibility for continuing education and training, links to practice and technical advice/ consultation by faculty with outside agencies found to be dispersed and predominantly left to individual faculty members. This has limitations and risks including for practice links the reliance on individual relationships, questions of income generation and finance, sustainability, and quality.(Potter and Eggleston (2003)	12

Model of SPH	8 Independent research and training institution: Equivalent of USA (accredited) SPH	Main authors
Mission / philosophy	**School of Hygiene & PH at John Hopkins University:** Emphasises education of scientists and PH professionals, & discovery and application of knowledge to improve health.	Leeuw (1995) Bhopal (1998) Mowat and Moloughney 2004
Location / structure	Within the University system but independent of other university schools Combination of German research institute and practice orientated academic and service PH system of the UK. **SPH university of north Carolina**: Desire for independence	
Training / education	Offer research and training (Post grad, undergrad. & research programmes) in all areas of PH SsPH emphasise research technique Covering 5 areas/subjects	
Issues re education	MPH as an entrance qualification to service PH. PhD as stepping stone to academic career in PH	
Disciplines	Multidisciplinary, research environments fertile especially for non medics Based on multi disciplinary approach to training Lab and population scientists are partners in SsPH Cross departmental groups common in some SsPH	
Issues of PH Identity	SsPH devalued the training of PH profs. Due to, amongst other things, a negative image of PH practice Is more attractive to students for career advancement.	
Links to community / service	**SPH university of north Carolina**: Rooted in the community and its problems, purpose of SPH was teaching and being a resource for the community but there was a move towards research as high priority **Rollins SPH Atlanta. USA:** Emphasises community, students expected to work in community context as practicum. Faculty encouraged to serve the community.	
Advantages / strengths	Multidisciplinary, research environments fertile especially for non medics Independence from Medical schools likely to promote career development of non medics & possibly lead to growth. High levels of internationally renowned research staff Accredited schools better able to generate: research and scholarship funds. Is more attractive to students for career advancement.	

Model of SPH	8 Independent research and training institution: Equivalent of USA (accredited) SPH Continued	Main authors
Challenges / weaknesses	SsPH compete for federal research funding Use research grants to grow faculty *Re Service PH:* Gap between service and academic PH widely recognised. Isolation from practice, disconnect between public health as taught in SsPH and as practiced in state and local PH departments Devalued the training of PH profs - partially due to negative image of PH practice Surprising lack of interest (by SPH) in the fortunes of service PH and in assisting in renewal of PH functions Independent SPH focusing on research develops own agenda and potentially distances itself from the world of medicine, in addition may also (seems in USA) distance PH scholars from world of 'service PH'	Leeuw (1995) Bhopal (1998) Tulchinsky (2002)
Reccomendations for this model	Recommendations for strengthening SPH relation to practice: • involving faculty and students in PH agencies, • giving weight to PH experiences in recruiting students and faculty • Links between service and academia, PH and medicine and emphasis on applied work should be safeguarded	

Themes emerging across the literature reviewed.

A series of themes emerge including:

- Relationship to university structure
- Multi-discipline, multi agency, multi sector
- Curriculum and educational approach
- Balancing Practice activities and Academic PH
- Community
- Context
- Comments on impact of SsPH

Relationship to university structure

As reflected in the models described above, several authors mention the structural location of SsPH in relation to universities, medical or non-medical schools or faculties. In addition virtual /cross school SsPH (model 6) are also discussed, mainly in relation to the development of SsPH in Canada.

Several authors propose the development of SsPH independent of Medical faculties (de Leeuw 1995, Moloughney and Skinner 2006, Tulchinsky 2009), suggesting that this may,

- Help answer a call for call for innovation and vision in PH (Leeuw (1995),
- Promote proactive, multi-disciplinary environment for education, research, advocacy and service in PH, to meet international accreditation standards (Tulchinsky 2009).

However Leeuw (1995) proposes that managerial difficulties in multi school / cross programme/models make consortiums and networks less attractive alternatives. While Moloughney and Skinner (2006) go as far as suggesting that there may be an argument for having SsPH separate from medical and other health sciences departments.

Multi-discipline, multi agency, multi sector

Multi disciplinarity is a common theme sometimes mentioned in relation to the mission or philosophy of a school and at other times emerges in the reporting of PH identity, the range of courses / students, the structural location of a school (e.g. which faculty or school the SPH sits in or is linked to). Bhopal (1998) notes the historical tensions between narrow medical focus and wider multi disciplinary approaches and a shift towards multi disciplinary basis for PH. More recently Williamson (2004 p 308)suggests that there are 'at least two versions of public health exist and the struggles between these medical and multi disciplinary factions can be viewed as the attempt of one group to impose their views on others'. The growth in MPH programmes, particularly in new universities, is seen as reflecting these wider moves, with the benefits of widening access to PH education and training of more practitioners. However Bhopal (1998) also notes the risks as the potential for variable quality, e.g. in teaching contact time, and potential lack of infrastructure to support increasing international student numbers.

Multi faculty /multi disciplinary SsPH are viewed as desirable (Tulchinsky 2009, Sim et al 2007, Leeuw 1995) and important, and some authors emphasise that PH is not only a medical field (Tulchinsky 2009, Sim et al 2007.) Horizontal academic PH is viewed as less attractive than a multi disciplinary approach (Leeuw 1995) and Moloughney and Skinner (2006) advocate for new organisational structures that are integrative and adaptive, building on interdisciplinary focus. In addition Bhopal (1998) suggests from observations of US SsPH that working across disciplines is eased by having diverse disciplinary groups in the same administrative/organisational structure and thus sharing same PH vision.

In relation to cross agency / sector collaboration, it is suggested SsPH should have close working relations with the state and local health agencies (Tulchinsky 2002, Estrada et al 2005). From a survey undertaken in Florida Lingvood (1997) reports that partnerships between SsPH and public health agencies are highly valued by those in health departments. Such partnerships were perceived to enhance the local public health systems capacity (Lingvood 1997).

Such messages are repeated in 2006 (Tulchinsky and Bickford) with the suggestion that new SsPH linked to regional PH agencies could bring together existing relevant departments but with wider mandate, with greater autonomy, cohesiveness, higher profile and advocacy. More recently the multi agency / sector character of PH has again been highlighted along with suggestions of a move away from medical dominance (Tulchiinsky 2009). However Sim et al (2007) see engagement with the wider workforce and especially those employed in the nongovernmental sector as a challenge.

There is a perceived need for common multi disciplinary core curriculum and electives (Tulchinsky and Bickford 2006)and SsPH are challenged to collaborate with other disciplines as well as 'field agencies' in order to achieve: dual goals of discipline specific competency; and interdisciplinary and cross cutting competencies(Moloughney and Skinner 2006). This, it is proposed, suggests models of strategic alliance and collaboration vs bricks and mortar (Moloughney and Skinner 2006).

Curriculum and educational approach

Different studies, conducted mainly in the USA, have explored issues around curriculum development and training, using different techniques and methods. Levin (1987) suggested that in order to create an info-structure of health promotion, it seems necessary to develop an organised academic programme, where professional training should be embedded in practice and promote disciplinary integration, bringing academic and experiential learning together. Dato et al (2002) described the development of two inventories and a capacity map for public health workforce training. The authors looked beyond traditional public health educational institutions to find as many resources as possible. They conclude that capacity mapping helps people to conceptualise and access resources that they might not otherwise be aware of. Calhoun et al (2005) present a competency-based education and assessment initiative implemented by the University of Michigan Center for Public Health Preparedness. Potter et al (2002) argue whether a universal model of training can be applied and they tested a model that could be a starting point to develop a curriculum. Tulchinsky (2002) suggests curriculum should cover at least epidemiology, biostats, environmental and occupational health, health systems and economics of health. While in a later publication Tulchinsky (2009) proposes emphasises the need for 'A New Public Health' as part of curriculum in health and social sciences. And courses which take into account the needs of hiring agencies as well as agencies regulating HEIs.

A key issue according to Tulchinsky and Bickford (2006) is unification into common entity. The potential of the combined approach they suggest is that it could foster newly energised approach to population health, this broader approach could enhance attractiveness of profession and draw new funding.

Balancing Practice activities and Academic PH

Links to the world of PH practice and faculty or students engaged in undertaking practice activities are issues mentioned in many of the items reviewed. Drivers for an emphasis on one or the other are noted and a balance between these aspects seems crucial.

Notably Potter and Eggleston (2003) report on a survey of organisational structures to promote and support practice activities within SsPH undertaken in USA in 1999. They suggest that at that time responsibility for practice activities were found to be dispersed and predominantly left to individual faculty members. In addition they propose that SsPH were not relying on any single rationale or strategy to guide decisions of how to support practice activities. The authors caution that this lack of strategy in relation to practice activities has limitations and risks including for practice links the reliance on individual relationships, questions of income generation and finance, sustainability, and quality

Dodds et al (2003) reporting on a survey study suggest that barriers to academic PH practice are embedded within academic institutions themselves (i.e they are structural and cultural). They go on to suggest that leadership, represented by the Dean or assoc. dean is essential to supporting Academic PH Practice and that senior faculty play a key role (e.g. in publishing practice related research) in being seen as champion . The leaders, they assert, initiate change while senior faculty maintain it. Faculty reward systems are critical structural elements which influence the balance between academic and practice aspects (e.g. peer rev. articles good for promotion but not of relevance to practice communities).Thus the emphasis on peer reviewed publications as measure of academic success encourages prioritisation of research over teaching, but links with service via joint appointments may help mitigate priority given to research (Evans 2009).Furthermore the respondents of the survey reported by Dodds et al (2006) viewed non tenured faculty as vital because they tend to be more focused on producing products valued by practice and communities.

Tulchinsky (2002) attempts to reconcile the two facets of academic PH and a practice or service focus by proposing that new SsPH should aspire to being centres of academic excellence with professional faculty and should conduct research in real PH problems confronting health agencies. However he also cautions that adopting models of management training provides easy entry to the field but leads to SsPH being divorced from the real issues. Some authors (Zwanikken 2002, Littilejohns 1993) also highlight the need for research which informs practice.

It appears that SsPH see their mission as encompassing education, research and service, however the key factor appears to be the weighting of empasis

Indeed Tulchinsky (2002) lists a series of 'aspirations' for the development of new SsPH in Eastern Europe which are contained in Appendix 7.

Community
Links to the community are mentioned by a few authors (Bhopal 1998, Levin 1987). Levin (1987) suggested that professional and lay resources are a key element of the new public health, and envisaged a strategy of community involvement and education. While Bhopal (1998) describes one US SPH as being rooted in the community and its problems, with the purpose of the SPH as teaching and being a resource for the community. However he also highlights a move towards research as high priority. Later Tulchinsky (2002) proposed that new SPH should focus on education, research, and service to the community, district and nation.

Context
The context within which a SPH is implemented or functions seems important. For example Evans (2009) suggests that in Africa and other low income countries SsPH established on inappropriate high income models are reproducing technocratic models that do not work within local health systems or needs. In addition Bhopal (1998) offers a word of caution regarding capacity building which needs to be undertaken across the globe with particular attention to risk of brain drain of students to developed world. He suggests alternatives include franchising relationships between north and south, distance learning and SsPH without walls. Indeed Zwanikken (2002) emphasises the position and role of a SPH cannot be seen outside of the context within which it is functioning.

Comments on impact of SsPH
No substantial evidence of any impact of the different models of SsPH was found in the literature reviewed. However Evans (2009) suggests that limited historical evidence suggests some SsPH have made important contributions to health systems and population health for example,

- Contribution of London school of Hygiene and Tropical Medicine alumni in international organisations and ministries of health:
- Contribution of National institute of hygiene in Poland in training personnel for a system which previously lacked a PH infrastructure. (Evans 2009)

On this subject Tulchinsky (2002) stresses that impact of SPH will be cumulative and not seen immediately.

Concluding remarks

There are of course limitations to this review:

- only easily available materials were accessed,
- searching the 'grey' literature and books proved impracticable within the resources available,
- given the variety of publication types reviewed assessing the quality of the items was not feasible,
- In addition 3 of the items pertain to one author (Tulchinsky) which may have skewed the messages and points extracted.

The literature base pertaining specifically to models for schools of public health is very small and this means it is difficult if not impossible to draw firm conclusions from the material reviewed. However a series of themes emerge:

- The issue of location in relation to university structures and the relative influence this may have
- The tension between academic PH and practice activities / focus, and the need to find a balance between the two.
- The need for cross sector collaborations in order for research to inform practice.
- A need to consider curriculum and educational approaches
- The challenge of a move away from a purely medical model
- A strong emphasis on multi disciplinary SsPH with some wider mention of multi sector, multi agency links
- The issue of linking to the community
- The importance of the context within which a SPH functions
- The difficulty in assessing the impact of the various models of SPH

It is evident from the items reviewed and the number of searches carried out in order to retrieve so few papers that additional systematic empirical research is needed to explore existing, organisational, managerial, and structural models of SsPH and the educational approaches and philosophies underpinning them. In addition as suggested by Evans (2009) there is a lack of comparative research studies exploring the quality or effectiveness of SsPH.

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Appendices

Appendix 1: Databases and searches

Database and search	Limits	Results	Discarded after screening abstracts	Full text retrieved and appraised	Full text included	Results from searching references cited	Cited by
Web of Knowledge							
(Title=(School* public health) AND Title=(role*)) OR (Title=(School* public health) AND Title=(model*)) OR (Title=(School* public health) AND Title=(structure*))	Publication year 1995 to date, English language	21	15	6	Bhopal, 1998	5 references none relevant	1
					Dodds, 2003		
					Evans, 2009	17 references 1 relevant : De Leeuw (1995)	0
					Potter, 2003	7 references incl. 1 relevant : Stevens (2000)	2 Livingwood (1997)
					Moloughney, 2006	16 references incl. Mowat (2004) Tulkinsky and Bickford (2006)	
					Zwanikken, 2002	8 references incl. De Leeuw (1995) Kohler (1991) Krieger (1988)	
Title=(School* public health)	Publication year 1995 to	41	40	1	Tulchinsky, 2006	8 references none relevant	3 None relevant

AND Title=(workforce)) OR (Title=(School* public health) AND Title=(training)) OR (Title=(School* public health) AND Title=(education))	date, English language						
Title=("public health workforce") OR Title=("public health training") OR Title=("public health education")	Publication year 1995 to date, English language	316	311	5	Ben-Shlomo, 2010 Dato, 2000/2002? Dato, 2002 Fee, 2007 Sim, 2007		
All following searches resulted in items which were either duplicates irrelevant or irretrievable							
CINAHL							
(TI school* of public health and TI workforce) OR (TI school* of public health and TI training) OR (school* of public health and TI education)	Published Date from: 1995-; English Language Search modes - Boolean/Phrase	21					
(TI public health	Published Date	2					

school* and TI education) OR (TI public health school* and TI workforce) OR (TI public health school* and TI training)	from: 1995-; English Language Search modes - Boolean/Phrase						
(TI public health school* and TI structure*) OR (TI public health school* and TI role*) OR (TI public health school* and TI model*)	Published Date from: 1995-; English Language Search modes - Boolean/Phrase	5					
(TI school* of public health and TI model*) OR (TI school* of public health and TI structure*) OR (TI school* of public health and TI role*)	Published Date from: 1995-; English Language Search modes - Boolean/Phrase	8					
ZETOC							
"school* public health" training	1995-	70					
"school* public health" model*	1995-	74					

"school* public health" role	1995-	17				
"school* public health" structure*	1995-	1				
"school* public health" workforce	1995-	7				
"school* public health" education	1995-	11				
ASSIA						
TI=((public health workforce) or (public health training) or (public health education))	1995-English language	19				
TI=(school* of public health) and TI=(workforce or training or education)	1995-English language	2				
Query: TI=(school* of public health) and TI=(role* or	1995-English language	3				

model* or structure*)						
www.doaj.org						
school of public health	None	1	1			
schools of public health	None	0	0			
public health school	None	0	0			
public health schools	None	1	1			
HSWE database						
Public health + education	None	38	38			
Public health + models	None	7	7			

Appendix 2: Ranking protocol

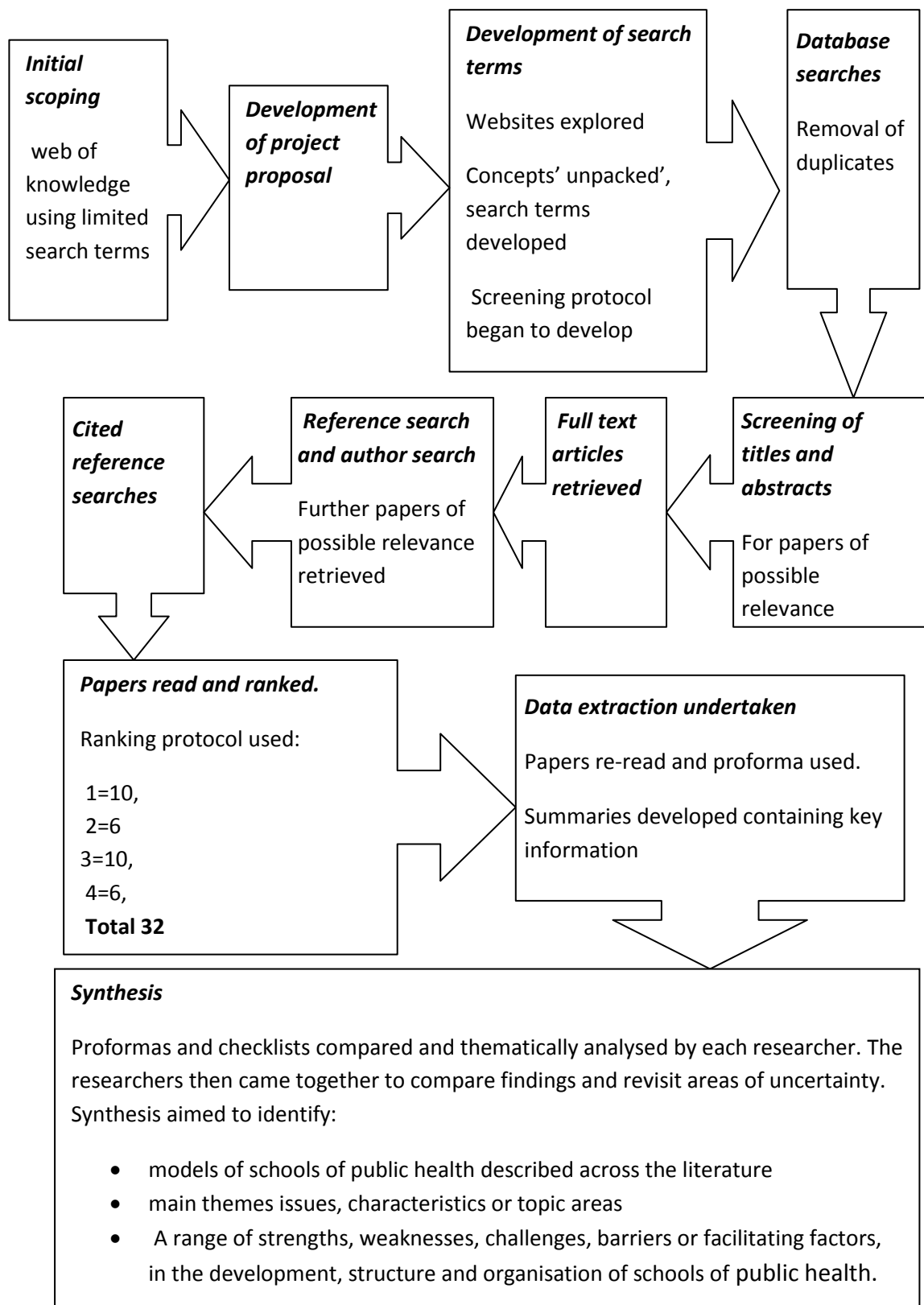| Nature of study area or publication	In some way pertaining to organisational, structural or administrative models of Schools of Public Health
Setting	UK public health education settings and international.
Populations	Decision-makers, senior managers, commissioners, practitioners, educationalists
Date of research	Initially to ensure rapidity the information specialist focussed on recent literature. Due to the small number of articles retrieved this was extended to include all research since 1980.
Publication types	Research reports, Commentaries, Editorials, Descriptive reports
Types of article / item	Given the small number of articles all types were included: Qualitative and quantitative method, discussion articles, commentaries, editorials, short reports.
Language	English language only to ensure rapidity

Ranking	Article reference details
1	Bhopal, R. (1999) The context and role of the US school of public health: implications for the United Kingdom Journal of Public Health Medicine. 20, 2, pp144-148
	Dodds J M., Calleson D C., Eng E, Margolis L, and Moore K. (2003) Structure and Culture of Schools of Public Health to Support Academic Public Health Practice. J Public Health Management Practice, 2003, 9(6), 504–512
	Evans, D. (2009) The role of schools of public health: learning from history, looking to the future. Journal of Public health, 31, 3, pp446-450
	Leeuw, E. (1995) European Schools of public health in the state of flux. The lancet, 345, May 6, pp1158-1160
	Moloughney, B., W., Skinner, H., A. (2006) Rethinking schools of public health. A strategic Alliance model. Canadian Journal of Public Health, May-June 2006, 97, 3, pp251-254
	Mowat, D., Moloughney, B., W (2004) Developing The Public Health Workforce in Canada. Revue Canadienne de Sante Publique, 95, 3, 186-187
	Potter A. and Eggleston M.M. (2003) Supporting Academic Public Health Practice: A survey of organisational structures in Public Health Schools. Journal of Public Health Management Practice 9(2) 165-170
	Tulchinsky T., H. (2002) Developing Schools of Public health in Countries of Eastern Europe and the Commonwealth of Independent States. Public Health Reviews 30, 179-200
	Tulchinsky T.,H. And Bickford J (2006) Are Schools of Public Health Needed to Address Public Health Workforce Development in Canada for the 21st Century Canadian Journal of Public Health; 97, 3; 248- 250
	Zwanikken, P., A., C. (2002) Service role of schools of public health: in between research and education? Public health Reviews, 30, pp133-141

Ranking	Article reference details
2	Fee, E & Bu. L (2007) Models of public health education: choices for the future? Bulletin of the World Health Organization , Dec, 85, 12 pp977-979
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	Levin, L.S. (1987) The School of the new public health: A proposal. Health Promotion, vol2, No2, pp91-94
	Sim, F., Lock, K & McKee, M. (2007) Maximizing the contribution of the public health workforce: the English experience. Bulletin of the World Health Organization, 2007, 85, 12 pp935-940
	Braine T. (2007), The pull of Public health studies, Bulletin of the World Health Organization, 85, 12 pp906-909
	Tulchinsky, T (2009) Commentary: it is not just the broad street pump. Journal of Public Health , 32, 1, pp134-135

Ranking	Article reference details
3	Calhoun, J., G., Rowney, R., Eng, E., Hoffman, Y. (2005) Competency mapping and analysis for Public preparedness training initiatives. Public Health Reports, supplement 1, Vol 120, pp91-99
	Dato, V., M., Potter, M., A., Fertman, C., Pistella, C., L. (2002) A Capacity mapping approach to public health training resources. Public Health Reports, 117, pp20-27
	Estrada, L., C., Fraser, M., R., Cioffi J., P., Sesker, D., Walker, L., Brand, M., W., kery, D., S., Johnson, D., L., Cox, G., Brewer, L. (2005) Partering for preparedness: the project public health ready experience. Public Health Reports, supplement 1, Vol 120, pp69-75
	Evans, D (2003) Taking public health out of the ghetto: the policy and practice of multi-disciplinary public health in the United Kingdom. Social Science and Medicine 57, pp959-967
	Kreiger, N., Lashof, J., C. (1998) AIDS, Policy Analysis, and the Electorate:The Role of Schools of Public Health. American Journal of Public Health, 78, 411-415
	Lingvood, W., C., Goldhagen, J., Little, W., L., Gornto, J. (1997) Assessing the status of partnerships between academic institutions and public health agencies. Framing Health Matters, April, 97, 4 pp659- 665
	Littlejohns, P.(1993) Editorial: Public health education for all? Journal of Public Health Medicine, 15, 1, pp1-2
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	Riegelman, R., K. (2008) Undergraduate Public Health Education, Past Present and Future. American Journal of Preventive Medicine, 35, 3, 258-263
	Williamson, S. (2004) Conceptualising geographies of health knowledge: the emergence of new education spaces for public health. Health and Place, 10, pp299-310

Initial scoping

web of knowledge using limited search terms

Development of project proposal

Development of search terms

Websites explored

Concepts' unpacked', search terms developed

Screening protocol began to develop

Database searches

Removal of duplicates

Cited reference searches

Reference search and author search

Further papers of possible relevance retrieved

Full text articles retrieved

Screening of titles and abstracts

For papers of possible relevance

Papers read and ranked.

Ranking protocol used:

1=10,
2=6
3=10,
4=6,
Total 32

Data extraction undertaken

Papers re-read and proforma used.

Summaries developed containing key information

Synthesis

Proformas and checklists compared and thematically analysed by each researcher. The researchers then came together to compare findings and revisit areas of uncertainty. Synthesis aimed to identify:

- models of schools of public health described across the literature
- main themes issues, characteristics or topic areas
- A range of strengths, weaknesses, challenges, barriers or facilitating factors, in the development, structure and organisation of schools of public health.

Appendix 5:Data extraction / Synthesis proforma

Themes / Article Reference		
Article type		
Year		
Country		
Description		
Model (s) described / covered/identified		
Development and evolution of models of SPH		
Key components:	Mutidisciplinary Interprofessional	
	Independence from universities [*Importance of*]	
	Other (paper specific)	
	Development of links to practice / PH work	
Links to historical context:	Political / policy context	
	Trends in education	
	Other	
Value judgments / evaluative comments	Strengths	
	Weaknesses	
Factors in evolution / function of school	Facilitators	
	Challenges	
	Importance of topic	
Other issues the authors feel are important		

Also develop a summary / synopsis of the paper covering the pertinent points

The aim of reading the papers is where possible to :

- Identify a range of search terms
- Identify other potential routes to finding information and literature (e.g. cited reference searches, key authors etc)
- Rule out any specific 'types' of paper or any areas/ terms which are not useful
- Start to gather info about schools of public health

When reading the papers make notes on the following

Does the paper mention schools of public health and if so in what context?

In respect to schools of public health (may be implicit need to be careful) does the paper tell us anything about:

- the location of, (joined to medical schools, virtual, physical buildings etc)
- organisation of, (staff types, hierarchies, processes or management structures)
- communication and relationships across the school or with other education providers
- links to health care bodies (e.g. NHS, SHA)
- the professions involved (e.g. uni disciplinary or multi and who)
- indicate any underlying educational or organisational philosophy (e.g. inter professional, medical model to training, any specific curriculum theory)

Are there any other terms used that may be useful for our searching.

Papers ranked 1

1. **Bhopal 1998**

Discussion paper. Considers the long term implications for the UK of USA SPH concept and models. Notes policy drivers in UK (Acheson committee) and context in USA. History of USA development – independent of med schools promoted by Rockefeller foundation – 1st 1916. Combination of research institute (German) and practice orientated academic and service PH system (of UK). Mentions multiple concepts of PH- state level, federal level, county level. Many agencies do PH research therefore no overall reliance of SPH.

Critiques of USA model (from committee inst. Of med): isolation from practice, devalued the training of PH profs due, amongst other things, to negative image of PH practice. Recommendations for strengthening SPH relation to practice: involving faculty and students in PH agencies, giving weight to PH experiences in recruiting students and faculty. Describes Academic PH -27 SPH in USA: multidisciplinary, research environments fertile especially for non medics. SPH compete for federal research funding. Lab and population scientists are partners in SPH. Criticism: gap between service and academic PH widely recognised.SPH emphasise research technique – PhD as stepping stone to academic career. MPH is an entrance qualification for service PH .

SPH university of north Carolina: organised as 8 depts. and 5 Interdisciplinary programmes. More than 160 full time staff (faculty)plus others including research and support staff. Desire for independence, rooted in the community and its problems, purpose of SPH was teaching and being a resource for the community but there was a move towards research as high priority.

School of Hygiene & PH John Hopkins : 1st SPH in USA combines research and PH practice, laboratory and population science depts. Emphasises education of scientists and PH profs, & discovery and application of knowledge to improve health .Ten departments and many cross departmental groups.

Rollins SPH Atlanta. USA: founded 1990. 6 academic departments and 5 centres approx 70 ft staff. Several founding departments moved from the medical school –this was dome cooperatively. MPH programme. SPH emphasises community, students expected to work in community context as practicum.. Faculty encouraged to serve the community.

 Implications from USA for UK: Developing critical mass of researchers is achievable within SPH environment (e.g. PhDs MPHs). Focusing on research the SPH becomes integral to University with less of the tension which exists between vocational and academic missions. SPH provides an environment to strengthen non-medic PH and draws PH scientists (who feel more valued in SPH than in MED school)from many disciplines. Working across disciplines is eased by having diverse disciplinary groups in the same administrative/organisational structure (sharing same PH vision).SPH large enough to offer career paths for researchers.

BUT – challenges/weaknesses:

Independent SPH focusing on research develops own agenda and potentially distances itself from the world of medicine, in addition may also (seems in USA) distance PH scholars from world of 'service PH' .Surprising lack of interest (by SPH) in the fortunes of service PH and in assisting in renewal of PH functions. SPH model 'truer' to UK tradition focused around service and applied research rather than more basic research (i.e. lab stuff?)- although RAE rewards more 'basic' research & the funding which comes with it. Independence from med schools likely to promote career development of non medics & possibly lead to growth. But links between service and academia, PH and medicine and emphasis on applied work should be safeguarded.

2. **De Leeuw 1995 EU**

Describes European SHP and their structures. Gives 8 potential structures and looks at opportunities for new SPH.

1. Predominant in former communist countries. 'University of medicine' offering various programmes.PH research an d training allocated to dept of hygiene or social medicine. PH identity of Profs. closely aligned with Medicine.
2. Within Medical school embedded in larger Univ. structure. Depts of PH offering mostly PGrad ed and training. Staff and resource restrict education offered, tend to medical prof. model – even though located in wider Uni structure.
3. PH training based in non medical schools (social sciences or engineering). These 'institutions'(SPH) restricted to specific themes (health Ed/Promotion, environmental health.)No MPH provision, lack of PH identity & tendency of graduates to look to own discipline(e.g. health psychologists / sociologists)
4. Multi school programmes. Horizontal structuring(challenge/weakness- managerial complexity). Offering PH specialisations to range of disciplines and profs. Advantage: staff and students more sensitive to other disciplines. But prof PH identity may remain underdeveloped.
5. SPH as training arm of national ministries of health (approx 10 SPH in Europe). Institution entirely under authority and management of health authority (national or regional depending on country). Offer almost exclusively post grad programmes – in accordance to needs as defined by government. Links with academic university community exist but not formalised. PH identity of those educated is strong –they are élite
6. SPH as training arm of national ministries of health. More formal link between national health authority and university/HE sector. Ministry designates multi-school programmes a university or a consortium of universities as 'National SPH'. Serve the needs of the ministry while maintaining academic integrity. Direct link to government eases research funding. Programmes focus on multi –prof student body. Managerial probs as in type 4 (horizontal structuring). Elite may emerge but may not identify themselves as PH specialists.
7. Stand alone research institute offering occasional , market oriented specialist PH courses. Advantage: education in form of innovative applied research. Disadvantage: absence of prof PH identity
8. Equivalent of SPH in USA (accredited). Independent research and training institution within university system. Offer research and training (post grad, undergrad, & research programmes) in all areas relevant to PH. Are multi- and inter- disciplinary, draw on variety of staff and resources and students from range of backgrounds. Graduates strongly identify themselves with PH Profession.

Author notes huge variation across organisational structures, teaching programmes, disciplinary emphasis prof profiles and quality of teaching SPH in EU.

Notes some policy drivers e.g. Maastricht treaty.

Draws on secretariat of the association of SPH in the European region and lists types of schools by year (1992, 1995) and new schools to have emerged(16). New SPH spread across types. Of the 54 known 8 in transitio0n with a move towards type 8- seems (at this point)stand alone model will take over .

Suggests: Describes a call for innovation and vision in PH (made in 1994 Lancet) and suggests can be answered in part by SsPH not isolated within purely Medical environment (1,2,3,5) Managerial difficulties in type 6,8, and 4 make it less attractive alternative. Most fundamental innovations will be seen in CCEE with SPH developed from scratch or reintegrated into multifaculty universities.

Therefore (my interpretation) Author sees multifaculty /multi disciplinary as desired and horizontal academic PH as less attractive.

3. Dodds et al 2003

USAS Survey (79% response) of structural and cultural factors affecting academic public health practice (i.e. scholarship in practice related teaching, research and service) in SPH in USA. Based on Stevens model. No models described as such but some key areas covered. Key messages/findings from the survey:

Barriers to APHP are embedded within institutions (academic) themselves (i.e. structural and cultural. That admin leadership, represented by the Dean or assoc. dean is essential to supporting Academic PH Practice ,Senior faculty play a key role (e.g. in publishing practice related research- seen as champion) –leaders initiate change senior faculty maintain it.

Faculty reward systems are critical structural elements(e.g. peer rev. articles good for promotion but not of relevance to practice communities).Tenured faculty vs non tenured –the respondents viewed non tenured faculty as vital because they tend to be more focused on producing products valued by (practice) communities. Leadership key element but leadership needs to grasp complexity of structural elements or morale may suffer and also productivity.

4. Evans 2009

Discussion paper UK. Explores the strengths and weaknesses of different models of schools of PH. Notes: no definition of SPH and wide variation across the globe.Evans uses the term loosely to describe: institutions providing post grad PH education, and /or conducting research in PH, whether formally labelled SPH or not.

Notes differences:

 In size of schools e.g. USA John Hopkins Bloomberg 1129 staff and $360 million budget vs African schools with less than 20 staff. In context: some areas have accreditation with formal criteria (USA)

but not others. Some regions have strong associations of SsPH others weak or none.Differences in extent and quality of PH research (e.g.UK RAE), philosophical differences also. In UK divide between pre and post 1992 universities. Implicit awareness of higher status MPH and lower MSc in PH.

Western schools	Some within schools of medicine
	Some attached as training arms of ministries
	Some more akin to independent model of independent SPH within a university
Eastern Europe	Predominant model separate department of social hygiene and public health within universities of medicine
	Some attached to ministries of health (references Leeuw)

Effectiveness of models

Notes: there are few processes for comparing quality or impact of SspPH. USA SsPH – accreditation and high levels of internationally renowned research staff. Describes/cites Fees historical case studies in USA (we could not access this literature). Fee proposes disconnect between public health as taught in SsPH and as practiced in state and local PH depts. From the 50's the SsPH were ignored and began, as continues, to use research grants to grow faculty.No similar critical assessments made in UK, Europe or global south. Limited historical evidence suggests some SsPH have made important contributions to health systems and population health. E.g. contribution of LSHTM alumni in international organisations and ministries of health: contribution of National institute of hygiene in Poland in training personnel for a system which previously lacked a PH infrastructure.

Weaknesses / criticisms

In Africa and other low income countries SsPH established on inappropriate high income models reproducing technocratic models that do not work within local health systems or needs. But we lack evidence base for these conclusions.

Suggests 3 key areas of learning from history :

Capacity building – across the globe with particular attention to risk of brain drain of students to developed world. Alternatives include franchising relationships between north and south, distance learning and SsPH without walls

Multidisciplinarity- historical tensions between narrow medical focus and wider multi disciplinary approaches. Shift towards over past 2 decades to multi disciplinary basis for PH.

LSHTM opened MscPH to multi disciplines in 1992. Also growth in MPH programmes particularly in new universities reflecting wider moves. Benefits: widening access to PH education and training of more practitioners.Risks: potential for variable quality, e.g. in teaching contact time, potential lack of infrastructure to support increasing international student numbers.

Balancing teaching and research- risk of research funding emphasis negatively effecting delivery of appropriate education and training (Fee historical studies in USA, UK RAE as major driver for SsPH). Emphasis on peer reviewed publications as measure of academic success –encourages prioritisation of research over teaching.Links with service via joint appointments may help mitigate priority given to research.

5. Moloughney and Skinner 2006

Debate paper. Canada. Gives brief definition of USA model of SPH as needing same independence as other professional schools providing MPH to specific criteria and having critical mass of faculty. Suggests there may be an argument for having SsPH separate from medical and other health sciences departments. Asks is a virtual school of PH a 'school' or distributive learning model. Given geography of Canada there have been a number of positive experiences with distributive learning models involving collaboration amongst multiple institutions without formal school structure. Authors advocate a new organisational structure that is integrative and adaptive, building on interdisciplinary focus.

Suggests SsPH are challenged to collaborate with other disciplines as well as 'field agencies' to achieve dual goals of discipline specific competency and interdisciplinary and cross cutting competencies. They propose that this suggests models of strategic alliance and collaboration vs bricks and mortar. Gives SPH at Toronto as example which encompasses a network of researchers educators and practitioners nationally and globally. This model is broad based, integrative and interdisciplinary. 5 themes underpin the research, education programmes have a 4 phase model integrating CPD with flexible masters research training at both masters and doctoral level.

Notes growing emphasis on global health. Mentions policy drivers. Mentions anticipation of a research evaluation and knowledge exchange network drawing on experiences with the teaching health unit and PH research and education program. Proposes a critical point is ensuring resources and connection among players in the system and that there needs to be clarity about aims, needs, strategic opportunities and options for system development Before choosing any particular organisational structural solution.

6. Mowat and Moloughney 2004

Report on regional workshops in Canada. Indicates that no SPH exist in Canada at this point. Summarises USA model as university based but independent of other university schools. Covering 5 areas/subjects. Suggests for Canada uncertain if USA model will be adopted or if regional or national consortia may be a way forward for meeting the need for coordination of workforce training and pooling of resources. Suggests these consortia may provide full range of training, professional graduate programmes, mutual recognition of credits and possibly shared participation in distance learning.

7. Tulchinsky 2002

Background / context- changes in Countries of eastern Europe and the former soviet union.

Outlines proposed set of definitions and characteristics, model of developing SsPH, from existing departments within the context of eastern EU in the late 1990s

Much detail regarding the development process: curriculum development for MPH, governance and consultation, quality development etc. Gives examples from other schools across the globe.

General suggestions from Tulchinsky :

New SPH should aspire to being centres of academic excellence with professional faculty. SsPH should have close working relations with the state and local health agencies. Should recruit part time faculty from service agencies. Should conduct research in real PH problems confronting health agencies. Re Remit, they can provide important services to DoHs in research and consultation. New SPH should focus on education, research, and service to the community, district and nation. Should have governing body including a range of representatives (sponsoring institutions, ministry of Health, national health insurance, donor agencies, faculty and staff. Should have an international consultative group –at least until successfully externally peer reviewed or accredited (e.g. by ASPHER). Should engage in internal review, self evaluation by staff and faculty, students and associated institutions, graduate associations and employing agencies. Part of the preparation for developing a SPH is to promote a market for its graduates.

Cautions: Adopting models of management training provides easy entry to the field but leads to SPH being divorced from the real issues . Impact of SPH will be cumulative and not seen immediately.

Models outlined and characteristics

Model type	Mission / remit	Issues	Multi disciplinary	Strengths	weaknesses
Departments of community health within medical faculty (pg2)	Provides: UGrad training MPH PhD	Medically orientated PH	Insufficient Multi disciplinary programme and faculty		May lack prestige in hierarchy of med schools. Lacks full academic status and potential of graduate school of PH
Uni of Michigan, Yale Pensilvania – SPH early 20th century	Mission 1st to train PH practitioners, secondly as academics, educators and researchers	Emphasised that educational setting should be independent but affiliated to a medical faculty	US SPH emphasised Multi disciplinary nature of the field		
Accredited USA SsPH (at time of article ?1999)			Based on multi disciplinary approach to training (lists subject areas pg3)	Accredited schools better able to generate: research and scholarship funds. Is more attractive to students for career advancement.	
Multi campus SPH		Requires special attention to governance, degree granting, financing, faculty location, development, and many other issues of complex multi-organisational network.			

Suggestions for New SPH model (developed from existing departments and within the context of Eastern Europe) – (*Series of aspirations)*	
Education	Curriculum should cover at least epidemiology, biostats, environmental and occupational health, health systems and economics of health. Emphasis should be on short courses for leaders while preparation for graduate training takes place. Recruitment from different basic disciplines. To provide future leadership First 5 year plan should target MPH level. Courses which take into account the needs of hiring agencies as wellas agencies regulating HEIs
Research	SPH should persue active research program as part of mission. Faculty and students should contribute to knowledge base SPH should provide environment conducive to research –may involve basic and applied topics, and research aimed at improving PH practice Research opportunities should be available to students. Views exposure to and participation in research as essential for UG and Grad students and faculty
Service	SPH can provide health leadership with research, education and policy analysis, even advocacy Faculty must keep up with current advances and transmit such information to policy level SPH should network with DoH and ministries/other agencies to promote graduate placements of high enough status and remuneration to attract high quality individuals
Organisation	Location: Should be part of multi-faculty university or network created for this purpose, or in a medical academic centre Learning environment should provide for interdisciplinary communication, development of professional PH concepts and values and stress problem solving Should stimulate and facilitate multi disciplinary exchanges of ideas between academics and professionals
Possible requirements	SPH and its faculty should be an organises entity with the same rights, privileges and status as other professionals in the parent institution, with authority for building, budget, faculty appointments, curriculum, student enrolment etc. Should be a consortium of many disciplines working together to address a broad range of issues of health of the community.

8. **Tulchinsky and Bickford 2006**

Debate paper - PH workforce development in Canada and potential of SsPh.

 Focuses on PH education in Canada and the perceived lack of consideration given to this area .

Highlights comments from workshops that US type SsPH may not be a prominent feature in Canada and that regional or national consortia of PH programmes may be needed to meet the need for coordination and pooling of resources. The authors suggest this conclusion should be re-examined and revised.

Acknowledges and promotes a multi disciplinary, multi sector, multi dimensional view of PH practice and education. PH as more of a culture than solely profession. Is training for this varied workforce best achieved within departmental structures of medical faculties? Suggests no one model fits all and much can be learned from other countries. Re USA accredited SsPH suggests that although these have been criticised (does not give the criticisms) there have been an expansion of such SsPH.

Re UK model LSHTM example of a free standing SPH within a university but not within a medical school.   Gives LSTHM mission statement ' to contribute to the improvement of health worldwide through the pursuit of excellence in research, postgraduate teaching and advanced training in national and international public health and tropical medicine and through informing policy and practice in these areas'. Engages in outreach to developing and transition countries. Outlines calls for the development of SsPH in UK to foster professional development of PH and NHS in working towards health targets rather than only managing services.

Re Europe, notes the development of many new SsPH particularly in Eastern Europe largely based in pre-existing with stimulus of newly trained graduates abroad.

Re Canada, acknowledges US or new European models may not be ideal Suggests:

There may be a case for developing a comprehensive approach by unifying academic departments, centres and institutes to create high profile academic centres of excellence. Preferably, but not necessarily with semi independent or independent faculty status. Uniting departments, centres into a faculty or school with common mission and objectives would enhance capacity to produce cadre and standards needed. Would enhance leadership and professionalism needed. Would strengthen focus of training, research and service on total population health, high risk groups, individual health and health management. SPH may be located within a medical faculty or as a separate faculty (as USA)

Vision for new model.

Key issue (aspirations- model) is unification into common entity – offers many aspects of the potential of the combined approach suggested e.g. could foster newly energised approach to population health, broader approach could enhance attractiveness of profession and draw new funding, higher profile SsPH could draw attention to PH and raise profile thus increasing funding potential etc.

New SPH linked to regional PH agencies could bring together existing relevant departments but with wider mandate, with greater autonomy, cohesiveness higher profile and advocacy. Need common Multi disciplinary core curriculum and electives. Canada wide system of accreditation also important to promote national standards and international recognition. Preparation of managers and planners as important as training workforce with broad orientation to new public health.

9. **Potter and Eggleston 2003 USA**

Reports on a survey carried out in 1999 of organisational structures of accredited SsPH USA. SPH were historically built on a research institute model rather than a professional school model. 28 member schools of ASPH sent survey (79% response rate).

No guidance on organisational structures accompanies accreditation criteria. It was assumed (by council on education for public health USA) that continuing education and training, links to practice and technical advice/ consultation by faculty with outside agencies and would happen automatically within the traditional academic organisational structures.

Mentions 4 organisational structures used to support an sustain practice activities recognised by council of practice coordinators of the association of SsPH: separate department of practice; practice centre independent of departments; an office or administrative unit within the deans office; a multiple or cross department model.

Authors assert that structure for practice activity within schools is important. Findings / discussion: Responsibility for practice activities were found to be dispersed and predominantly left to individual faculty members. Suggests schools were not relying on any single rationale or strategy to guide decisions of how to support practice activities. This has limitations and risks including for practice links the reliance on individual relationships, questions of income generation and finance, sustainability, and quality. Highlights the increased emphasis on SPH links to the word of practice.

10. **Zwanikken 2002**

Discussion paper considering the service role of SPH.

It emphasises the position and role of a SPH cannot be seen outside of the context within which it is functioning.

In order to identify how different schools perceive their service role and how that was operationalised, the author reviewed a number of SPH around the world. Most schools stated that research, training and service were part of their mission.   Services provided are classified in 1) advice to PH practitioners and governments; 2) providing the forum for debate and advocacy; 3) actual public health services in the community. However, the importance of each role in not very clear. In particular, the service role of SPH is mainly perceived as providing policy advice and support to different levels of PH practitioners and governments. Instead, more consideration should be given to the elaboration of service role and its operationalisation.

Short summaries of papers

Most papers will summarise an overview of the political and historical conditions of public health All papers have interdisciplinary and interprofessional collaboration as common theme. In same cases the papers suggest international collaboration and shift of methods to include a business approach . They propose a model of SPH linked to university.

11. Tulchinsky 2009
Commentary on paper regarding medical students PH education.

Highlights the importance of multi disciplinarity for PH and emphasises it is not only a medical field. Also highlights the multi agency / sector character of PH. Outlines briefly the history of PH. Suggests medical students need exposure to PH ideas in order that they understand broad scope of pH and multi dimensional social aspects.

Suggests that there is good reason to have PH courses as part of undergrad studies for a range fields not just health. Also emphasises the need for 'A New Public Health' as part of curriculum in health and social sciences. Mentions GMC goals for ED in PH (it seems the author is only referring to under grad medical studies). Notes and agrees with authors of article being commented on that post grad ed for PH also needs review. Suggests:

- PH training in UK mainly located in DPH's within Medical faculties and under specialty requirements of faculty of PH,
- This may need review given the multi disciplinarity of PH
- A greater independence from medical specialty requirements may become essential to meet the broader requirements
- Seen from abroad UK traditions may need revitalisation in keeping with international best practices in undergraduate PH exposure.

This may involve developing SPH possibly independent of Medical faculties to promote proactive, multi-disciplinary environment for education, research, advocacy and service in PH to meet international accreditation standards. Main emphasis- multi disciplinarity, move away from medical dominance, international aspect/standards.

12. Levin 1987
This is a descriptive paper that proposes a model for the new School of Public Health in the United States. The proposed model is consistent with the Ottawa Charter for Health Promotion of a social definition of health. The author recognises that professional and lay resources are a key element of the new public health, envisaging a strategy of community involvement. Furthermore, in order to create an infostructure of health promotion , it seems necessary to develop an organised academic

programme. Professional training should be embedded in practice and promote disciplinary integration, bringing academic and experiential learning together. The approach to curriculum development is problem centred. The Schools would be formed as a link of community and university, with representatives form the university forming the School's governing council. The School would award a degree (certificate) but not licence.

13. Sim et al 2007

The paper sets the historical context of development of school of PH and its workforce. The paper describes how since the 1990s England has adapted to a model of multidisciplinary public health practice, recognizing the necessity of diverse contribution, putting in place the necessary training systems. For example, in 2003 the United Kingdom Voluntary Register was established for non-medical specialists. These have complementary roles in improving population health, although some of the wider workforce has not traditionally been viewed as part of the public health workforce. In 2007 the FPH created a common training requirements for all public health specialists. In 2007 the NHS promotes multidisciplinary practice and senior posts are open both to medical and non medical qualified ph specialists. There is some diversity in training content and methods; however the paper highlights the importance of multi-agency health promotion coalitions and strong academic base in Public Health. The paper also acknowledges benefits in ensuring synergy between training programmes and employment. Three major categories of public health workforce have been identified: specialist, practitioner and wider workforce. Training has to be tailored to the needs of these three groups.

Potential challenges to the new PH are Engagement with the wider workforce and especially those employed in the nongovernmental sector e.g. try to encourage voluntary organisations

14. Braine 2007

This a research report on different models of SPH around the world. First two schools were founded in the UK in 1898 and 1899 (school of hygiene and tropical medicine). During the first part of the 20th century, public health schools tended to be in rich, industrialized countries and focus on national health systems. The last few decades have witnessed a shift. Today there are schools, like the Bangladesh school, and in developing countries such as China, Benin, Brazil, the Democratic Republic of the Congo, Ghana, India, Kazakhstan and Thailand, to name but a few, covering international public health issues and local concerns. In USA, accredited public health schools generally offer five core disciplines, according to the American Association of Public Health Schools, the umbrella organization: biostatistics, epidemiology, health services administration, health education/behavioural science and environmental health.
Each programme differs on different aspects e.g. length of time, type of degree awarded , disciplines studied, instruction methods (see papers for more details on different schools), prerequisites. Many SPH in development country have established collaborations with others in developed nations, e.g. international qualified Ph workforce. The paper also focuses on different career options .

15. Fee and Bu 2007

It provides a retrospective look at different models of public health (e.g. British-German-American-Yugoslavia) each emphasizing different aspects of PH e.g. research, community health stations offering both preventive and curative health services, importance to raise the level of health

knowledge to rural population etc. The paper also advocated the importance of an international public health workforce and collaboration between countries.

16. **Kohler 1991**

This paper focuses on the role of new public health and sets the political and economical context in Europe. Main responsibilities of SPH are : 1) instil PH values from undergraduate education to practitioners working career 2)develop research 3)active involving of service, including consulting.

SPH should also reshape their role and create a new strategy that must take into consideration changes in the public sector in Europe (e.g. more consumer orientated) and use some business like methods. The first task of the new schools it's to establish a sense of coherence and affirm its commitment to interprofessional and interdisciplinary work. Second task is to find allies for action. Thirdly, select focus in terms of education, research and service, and public campaign. Fourthly, schools have responsibilities to students needs. Finally, schools should find support and collaboration with external bodies (ASPHER, EHMA).

Papers ranked 3

These papers are mostly related to training/education; training design; workforce development,; collaborative working across departments, sectors etc; political-historical context and future of multidisclinarity; wider role of PH and its responsibility towards the public, workforce perception and models of multiagency collaboration, universal competencies, educated citizens.

17. **Calhoun, J (2005)**

The paper presents a competency-based education and assessment initiative implemented by the University of Michigan Center for Public Health Preparedness. The Mi-CPHP aims to ensure that frontline PH workers are well prepared to respond to bioterrorism and other public health crisies. It is part of national network of 42 centers which comprise a workforce development initiative designed to link academic expertise to PH practice by providing training and education. One of the aims of the Mi-CPHP is to strengthen the capacity of the University of Michigan school of public health to coordi nate and apply its academic expertise and resources towards state and PH preparedness efforts. The paper then describes the development of the compenty model. Benefits for trainers and faculty members, and training coordinators are discussed.

18. **Dato, V. 2002**

The paper describes the development of two inventories and a capacity map for public health workforce training. The authors look beyond traditional public health educational institutions to find as many resources as possible. They conclude that capacity mapping helps people to coceptualise and access resources that they might not otherwise be aware of.

19. **Estrada, L., et al 2005**

The papers describe the Project Public Health Ready Experience, a partnership developed between local and state public health agencies and SPH (which are set in academia). It presents a number of case studies and concludes that in order to achieve succes, a collaboration between academia, state agencies needs to developed.

20. **Evans, D 2003**

A paper on the policy and practice of multi-disciplinary public health in UK. It provides the historical-political background on the development of multi-disciplinarity.   The paper suggests that 'it is arguable that two separate but unequal projects have been established : one centres on the continued role of Ph medicine, the other the creation of a new multidisciplinary public health professional grouping' (p965).

21. **Kreiger, N. 1998**

The paper is on the role of SPH in California in relation to AIDS; relevant points are raised in connection of the role that SPH have to educate students, electorate and the wider public on issues of public health. PH workforce also has a responsibility to advocate policies that best serve the public' s interests.

22. **Lingvood, W. 1997**

The paper presents the models emerged for academic-agency partnerships in Florida. A questionnaire was administered to county health officers in Florida, asking about different aspects of academic-agency partnerships. Results suggest that agency partnerships is highly valued.

23. **Littlejohns, 1993**

This editorial sets the historical background for the new PH, and the implication that new PH has for medical education at all levels (undergraduate, postgraduate and continuing education. A successful approach lays in the mixing of the skills of academic and service institutions e.g. PH Institutes in England, but some questions on how to structure those institutes still remain unanswered.

24. **Potter, M. 2002**

The paper tries to answer the questions whether it is possible to apply a universal training model of PH workforce. It gives a brief outline on the history of training and education in PH in USA. (80s: no shared set of professional skills, 90s PH Faculty identified 6 disciplines) The report is based on the Pennsylvania and northeast PH training project. . The authors conclude that the model training agenda they have tested is a starting point for developing a training curriculum.

25. **Riegelman, R., K. 2008**

Provides historical background for undergraduate education in PH.

26. **Williamson, S. (2004)**

The paper very clearly sets the socio-political context in England. Educational philosophy, refers to the NHS and Deanery, describes and compares the medical vs. social model of PH.

Appendix 8 Overview of websites accessed

UK Schools of Public health websites		
Name	**Mission/philosophy**	**Structure/Management**
School of Public Health (Northern Deanery) http://mypimd.ncl.ac.uk/PIMDDev/pimd-home/specialty-training-1/specialty-schools/school-of-public-health/school-of-public-health	The aim of the Specialty School is to ensure that patient care is delivered by trained doctors and developed to streamline postgraduate medical training, which is focussed on service required by the NHS and delivered to explicit standards. Definition of activities mostly related to speciality training. Information for staff and trainees only	
School of Public Health North East	The School of Public Health is the vehicle to deliver the education and development of the broadly based workforce essential if we are to be successful in implementing Better Health, Fairer Health, using all elements of the Public Health System to contribute to the regional strategy for health improvement.	School Board includes: Regional Director of Public Health and brings together representatives from: Primary Care Trusts (PCTs), NHS Education North East, the 5 Universities, the Association of North East Councils (ANEC), the Faculty of Public Health (FPH), Consultants and Specialists involved in leading education, Trainees, the Teaching Public Health Network (TPHN), and Workforce Planning.
Imperial College London, School of Public Health http://www1.imperial.ac.uk/medicine/about/divisions/publichealth/	The School of Public Health aims to achieve better health in the population through strengthening the public health science base, training the next generation of public health leaders and influencing health policies and programmes around the world.	
London School of Hygiene and tropical medicine **http://www.lshtm.ac.uk**	To contribute to the improvement of health worldwide through the pursuit of excellence in research, postgraduate teaching and advanced training in national and international public health and tropical medicine, and through informing policy and practice in these areas	Links to the different faculties
School of social and political sciences http://www.sps.ed.ac.uk/ph404	No, very broad activities mostly linked to general political sciences	
http://www.merseydeanery.nhs.uk/publichealth/	Through the effective deployment of the Multi Professional Education and Training, Mersey Deanery promotes and organises high quality education for doctors in training and funds the running costs of Postgraduate Education Centres in NHS Trusts. The Deanery also provides continuing professional development for consultants with supervisory roles. Some links, lots of information for trainees	The Deanery's Strategic Plan 2009-2012 provides the overarching framework for commissioning and quality managing postgraduate medical and dental education in Merseyside and Cheshire over the next 3 years. The Deanery's Business Plan 2010-2011 provides the operational framework for ensuring that the organisation's objectives are being delivered to underpin the strategic direction of the Deanery

Name	Mission/philosophy	Structure/Management
http://www.westmidlandsdeanery.nhs.uk	The webpage has got lots of useful links, but not a clear statement on purpose, overall philosophy etc.	
http://www.yorksandhumberdeanery.nhs.uk/public_health/	The Yorkshire & the Humber Deanery's School of Public Health provides high quality training for people wishing to become Consultants in Public Health. The Programme provides a wide range of opportunities and experiences in the NHS and with partners from other sectors and specialities. The Training Programme is open to both qualified medical doctors and those from backgrounds other than medicine.	The Programme is led by a Head of School and two Training Programme Directors, supported by Educational Supervisors and Project Supervisors across the Yorkshire and Humber Region.
http://phoxd.org.uk/aboutme.htm	The overall aim of the training programme is to recruit and train doctors and those from disciplines other than medicine to enable them to acquire the knowledge, skills, and experience required to be effective public health specialists. As such the training programme aims to accommodate the evolving role of the speciality; to allow a choice of career path; and to cover the academic, health protection and service components of public health practice. While providing a programme that is flexible to suit the professional development of the individual, it is also important that the training provides Specialist Registrars (SpRs) and Specialist trainees (SpTs) with the essential and fundamental knowledge and skills to enable them to work as competent specialists.	Part of the deanery, XSPH - managed by the Oxford Deanery, encompasses the Thames Valley including Oxfordshire, Berkshire and Buckinghamshire
http://www.iph.cam.ac.uk/	Aims of the Institute of Public Health • to improve the health of the population by understanding of the cause and natural history of disease • to identify and evaluate new possibilities for both primary and secondary care intervention and prevention • to monitor on a population basis interventions as they are currently applied.	The IPH is founded on a dynamic partnership between the University, the MRC and the NHS. It was created in 1993 and research since then has spanned many aspects of public health and science, from diagnosing and treating diabetes, studying natural selection and monitoring health trends across the region.Staff across the IPH contribute to the education and training of medical students, and of postgraduates who work in the field of public health
http://www.swpph.salford.ac.uk/	University website	

International SsPH		
Name	**Mission/philosophy**	**Structure/Management**
http://www.publichealth.ualberta.ca/	Our graduate education programs are designed to meet the demand for skilled public health professionals who are dedicated to tackling today's challenges to improve the health of people. We are proud to work collaboratively with other academic institutions, and non-governmental and governmental organizations locally, nationally and internationally. In addition, we are actively engaged in many associations and networks aimed at promoting health and well-being.	The School of Public Health integrates the public health strengths of faculty, staff, adjuncts and instructors engaged in research, graduate education and community engagement through our centres, departments, and project teams.
http://www.phs.utoronto.ca/	The Dalla Lana School of Public Health (DLSPH) is a leader in public health, population health and health promotion.	In addition to faculty with primary appointments in the DLSPH, the School draws on leading academics, researcher and practitioners from across the Faculty of Medicine and many collaborating institutions, including the Ontario Agency for Health Protection and Promotion, Cancer Care Ontario, the Institute of Work and Health, the Institute of Clinical Evaluative Sciences and key public health agencies.
http://www.spph.ubc.ca/	Its goal is to provide a vibrant interdisciplinary academic environment at a critical time in the development of public health in Canada. We create, share and apply knowledge to protect and improve well being and to promote equity in the health of people and communities at home and around the world.	Faculty of Medicine
http://www.hsph.harvard.edu/about/	The overarching mission is to advance the public's health through learning, discovery, and communication. To pursue this mission, the School produces knowledge through research, reproduces knowledge through higher education, and translates knowledge into evidence that can be communicated to the public, policy makers, and practitioners to advance the health of populations.	Departments: Biostatistics Department of Environmental Health Epidemiology Genetics and Complex Diseases Global Health and Population Health Policy and Management Immunology and Infectious Diseases Nutrition Society, Human Development, and Health

International SsPH		
Name	**Mission/philosophy**	**Structure/Management**
http://www.sph.uq.edu.au/ School of Population Health university of Queensland	The School of Population Health aims to improve the health of populations through excellence in teaching, research and strategic partnerships. SPH offers programs and courses in international public health, public health, health studies, clinical epidemiology, addiction studies, nutrition, Indigenous health, tropical health, health economics and biostatistics	SPH staff research some of the world's most critical and emerging public health issues. Current research priorities include biostatistics and epidemiology; nutrition, disease and injury; health systems and economics; and social sciences.
http://sph.bjmu.edu.cn/eng/index.htm Peking University		School of Public Health consists of seven departments , one central lab, and one research institute, namely, Department of Epidemiology and Biostatistics, Department of Occupational and Environmental Health Sciences, Department of Nutrition and Food Hygiene, Department of Child ,Adolescent and Women's Health, Department of Toxicology, and Health Education, Central Laboratory and Institute of Child and Adolescent Health of Peking University.Currently there are 151 staff members in the school, including36 professors and 36associate professors; among them 25 are doctoral supervisors. The present enrollment of the school is 934, including 148 doctoral and 203 master candidates, and 230 Master of Public Health (MPH), and 353 undergraduate students

Generic UK PH websites	
Public health open resources in the public sector http://phorus.health.heacademy.ac.uk/	Project **PHORUS** is part of an intitiative to release open educational resources focused on public health in the Higher Education sector. Funded by HEFCE and supported by **JISC** and **the Higher Education Academy**, PHORUS is led by the **Health Sciences and Practice Subject Centre** working with **the Royal Society for Public Health**, **Bournemouth University** and other institutions. It is one of thirty projects across the countries of the UK in an initiative designed to test practical considerations and benefits of providing open educational resources (OER) in Higher Education. We are working together to promote the development of open educational resources in public health, and undertake research into enablers and barriers to the release of resources.
Royal Society for Public Health http://www.rsph.org.uk/en/index.cfm	The Royal Society for Public Health is an independent, multi-disciplinary organisation, dedicated to the promotion and protection of collective human health and well-being.
UK Faculty of Public Health http://www.fph.org.uk/	The Faculty of Public Health (FPH) is the standard setting body for specialists in public health in the United Kingdom. It was established as a registered charity in 1972 following a central recommendation of the Royal Commission on Medical Education (1965-68). FPH is a joint faculty of the three Royal Colleges of Physicians of the United Kingdom (London, Edinburgh and Glasgow). Although an integral part of the three Royal Colleges, FPH is an independently constituted body with its own membership, governance structure and financial arrangements. FPH is the professional home for more than 3,000 professionals working in public health. Our members come from a diverse range of professional backgrounds (including clinical, academic, policy) and are employed in a variety of settings, usually working at a strategic or specialist level.