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Public health in practice: the three domains of public health

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Summary This paper outlines a conceptual model for public health practice by proposing the three domains as a framework to organize and to deliver public health programmes. The model builds on the recognition that public health is everybody's business and therefore, needs a common definitional base. Different levels of skill and a wide range of contributions are needed if public health programmes are to make the most impact. The different domains of practice help to construct a basis for understanding the necessary elements of the public health system and their interactions.

Using teenage pregnancy as a case study of a public health programme highlights the characteristics of the model. It demonstrates not only the importance of the role of directors of public health in taking a population-based overview, but also the need for multisectoral, multidisciplinary working. The relevance of the public health approach not only to primary care but also to the hospital-based sector becomes apparent, as does its relevance to communities, voluntary sector and local government. Integration of the three domains, a common definition and the framework for the public health system will support effective delivery of health improvement.

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Introduction

The interest in public health amongst politicians, the media and the public has never been greater.

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The Severe Acute Respiratory Syndrome epidemic and the threat of bioterrorism reinforce the importance of health protection, whilst the obesity epidemic focuses attention on lifestyle factors highlighted in 'Choosing Health'.¹ The UK Government's increasing emphasis on quality standards, outcomes and choice highlights the need for evidence-based knowledge and informed health

service planning. Population approaches to promoting health and preventing disease are on many agendas both nationally and locally. In his introduction to the National Health Service (NHS) Improvement Plan for England, the Prime Minister says:

“A greater emphasis will be given in the NHS to public health, to prevent illnesses and not just treat them”.²

This policy shift at the highest political level is welcome, but the greater profile and accompanying higher expectation creates challenges for public health professionals, increasing to unprecedented levels the demand for public health skills not only within the NHS workforce but also across other sectors, particularly local government. The lack of people with specialist skills is particularly problematic, because, as Derek Wanless points out:

“Difficulties remain in some areas due to capacity problems, the impact of recent organizational changes and the lack of alignment of performance management mechanisms between partners”.³

Much of this gap in public health capacity in England is a direct consequence of structural re-organizations following the introduction of ‘Shifting the Balance of Power’ (StBOP)⁴ and the creation of a new structure for health protection set out in ‘Getting Ahead of the Curve’ (GATC).⁵ StBOP created the directors of public health (DPH) in all primary care trusts in England, significantly expanding the numbers of specialists needed. Similar moves were made in Wales. However welcome a recognition of the need for public health, this ‘is spreading resources very thinly’ although ‘there is a welcome move to broaden the skill base by introducing non-medical specialists’.³

GATC has created the new Health Protection Agency (HPA). The HPA has integrated national resources for control of communicable disease and response to chemical and radiological incidents, and provided a focus for response to bioterrorism. The impact has been to fragment the previously integrated public health structures at local level. Consultants in communicable disease are no longer part of local public health departments and, in some instances, there are considerable strains between generalists and health protection specialists, particularly where capacity is stretched.

These problems of capacity, skill shortages and displacement of roles were explored through a series of workshops sponsored by the Minister for Public Health and the Faculty of Public Health⁶ as well as through a survey of the public health workforce.⁷

The White Paper ‘Choosing Health’¹ has more recently recognized the strains on capacity and made recommendations to strengthen it at all levels in both service and academic public health.

In this paper, we describe a model to support public health practice which proposes an approach to defining public health, describes a public health system and constructs a framework based on three inter-relating domains of public health practice to address both the shortcomings and the need to modernize intervention methodologies in public health.

Supporting specialist public health practice

Defining public health

The Alma Ata Declaration of Health for All⁸ and the Ottawa Charter⁹ emphasize well being, not just absence of disease, as the basis of public health. It emphasized, that it is not only the impact of individual behaviours which influence health but also of social, economic, political and environmental factors on the health of populations.

To be effective, public health needs to:

- be population based;
- emphasize collective responsibility for health, its protection and disease prevention;
- recognize the key role of the state, linked to a concern for the underlying socio-economic and wider determinants of health, as well as disease;
- have a multidisciplinary basis, which incorporates quantitative as well as qualitative methods;
- emphasize partnerships with all of those who contribute to the health of the population, including individuals, communities, voluntary groups and the business sector.¹⁰

In the UK, following the Acheson review into public health in England in 1988, the most frequently employed definition building on that of Winslow¹¹ has been that public health is:

“The science and art of preventing disease, prolonging life and promoting, protecting and improving health through the organized efforts of society”.¹²

Derek Wanless suggested an adaptation:

“the science and art of preventing disease, prolonging life and promoting health through

the organized efforts and informed choices of society, organizations, public and private, communities and individuals".³

Wanless argued that the earlier definition failed to reflect the importance of supporting individuals in their choice of healthy lifestyle, focussing more on the post-war settlement that improving better health, particularly in poor communities, was better achieved through structural solutions instigated by the state. He argues that rather than being 'done unto', individuals need to 'fully engage' in their health choices.¹³ This emphasis on choice reflects current political philosophy, with the debate between individual choice and state intervention highlighting the tension within the political arena about how much can be achieved by government without accusation of 'nanny-statism', and how much needs to be left to individual choice. 'Choosing Health' explores this move toward personalization of healthy choices, also reflecting the need to reduce health inequalities by addressing access to choices, more information and partnerships within communities.

It is our contention that, however the definition of public health is finessed, the health of the population will only be improved through engagement not only of individuals but of governments and communities. Thus, public health practice needs to demonstrate not only an understanding of technical skills to support individuals in promoting healthy choices, but an engagement with influencing the broader determinants which impact on the health of populations. Fig. 1 illustrates the need for this

broad conceptualization which connects the individual to the structural determinants of health.

A public health system

The challenge this wide remit poses can confound not only the public who are unclear about what public health means but also the specialists who have to organize what they do in the most effective way. A helpful framework to ensure delivery is to think of a public health system. The characteristics of the public health system within the current institutional frame of reference can be described as:

- working within a national policy framework;
- working at all population levels: local, regional, national and international;
- delivering comprehensive public health programmes for populations, including vulnerable groups, to improve and protect health;
- being an integral part of primary care working with all partners particularly local authorities and hospital trusts;
- led in each locality/geographic area by a DPH;
- working through locally organized multidisciplinary public health teams which are made up of specialists, practitioners and interested people in communities including voluntary and community groups and community advocates;
- part of managed multidisciplinary and public health networks working across organizations;
- supported by timely, accurate and accessible public health information;

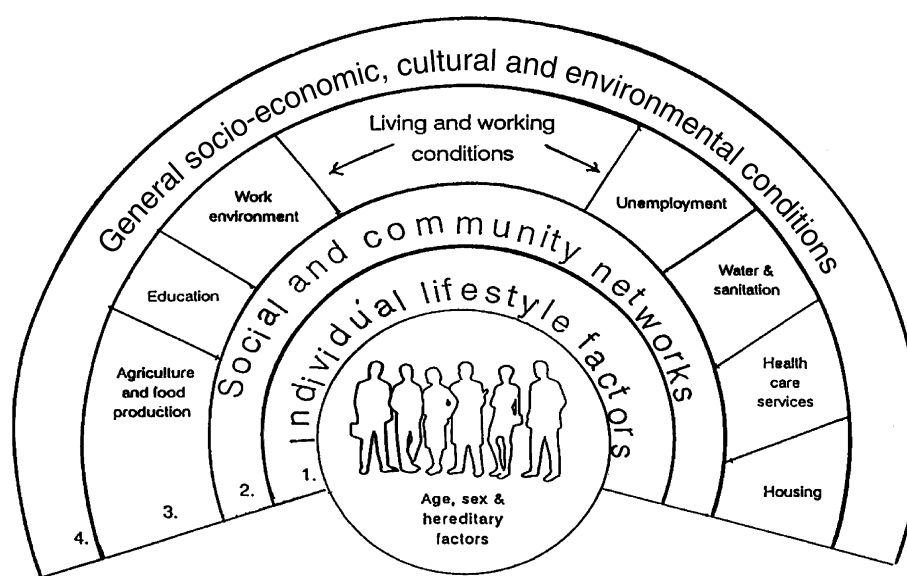


Figure 1 The main determinants of health. Source: Dahlgren and Whitehead, 1992¹⁷.

- part of the primary care organization having local discretion about priorities and methods of delivery;
- being based on strong partnerships with communities, local government and the voluntary sector, and utilizing local strategic partnerships and local area agreements;
- framing and monitoring activities through DPH annual reports which provide an independent assessment of the health of the local population, supporting health equity audits and health impact assessments;
- ensuring that action on key public health issues is reflected in the plans of partners as well as the NHS local delivery plans; and
- being performance managed on programmes for process, output, outcome and targets.

This framework provides the basis for delivery, audit and governance for public health programmes. It places the public health effort as an integral part of the health, social care and local authority systems, and relies on creating partnerships across communities. It allows monitoring of delivery by defining the public health effort in terms of public health programmes such as screening, immunization, reduction of teenage pregnancy, smoking cessation, prevention of domestic violence, promotion of physical activity and cancer prevention. In doing so, it draws on the expertise available from managed public health networks and from public health observatories. Whilst drawn from the English experience, the model can be adapted to other national contexts.

The three key domains of public health¹⁴

The breadth of public health becomes more manageable if conceptualized within the model of three domains of practice.¹⁵ These domains of practice underpin specialist practice and also clarify the delivery of public health programmes. Their origins lie in the historic importance of the control of communicable disease, health education and the role of hospital and community services over the last 150 years. They cover inter-related but also distinct aspects of public health practice, with each underpinned by public health intelligence and information. Taken together, they describe the wide range of expectations of public health to which population science can be applied.

The health improvement domain covers key aspects of activity to reduce inequalities, working

with partners not only in the NHS but in other sectors such as education and workplaces. It involves engagement with structural determinants such as housing and employment, as well as working with individuals and their families within communities to improve health and prevent disease through adopting healthier lifestyles.

Health protection includes the prevention and control of infectious diseases as well as response to emergencies, be they the result of a chemical or radiation disaster or of bioterrorism. It engages with the regulation for clean air, water and food as well as preventing or dealing with environmental health hazards.

Health service quality improvement includes engagement in service delivery, promoting clinically effective practice particularly through promoting evidence-based care, supporting clinical governance, planning and prioritizing services, and engaging in appropriate research, audit and evaluation.

The three domains are not separate entities but overlap and are interdependent. They can be used to describe the services to be delivered, the core skills, knowledge and competencies that are needed, and the roles and responsibilities of those delivering them.

Most DPHs who are based within primary care agree that their role is to take an overview across the three domains.⁷ Other specialists may have special expertise in one or other domain, although they will be competent across the domains to the level expected by their professional bodies. For example, Consultants in Communicable Disease Control will work mainly within the domain of health protection, whilst health promotion specialists work within health improvement. This

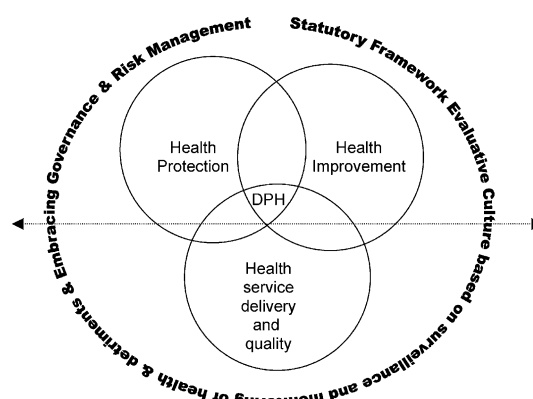


Figure 2 The three domains of public health practice. DPH, director of public health. Source: Northern Ireland Faculty of Public Health Training Committee, 2004¹⁸.

particular use of the domains could be argued to be country specific because it applies to the organizational basis of practice. However, we would suggest that the approach is not only specific to England. It could be applied to population programmes such as reducing tobacco-related harm in China or chlamydia screening in Sweden which take account of the need to promote healthier lifestyles, to protect the public through surveillance and reducing exposure risk, as well as ensuring that there are services for prevention as well as treatment (Fig. 2).

The utility of the three domains is demonstrated in the following example of the public health programme to reduce teenage pregnancy.

Case study: Delivering teenage pregnancy as a public health programme

Many young people are successful in adapting to the role of parenthood and have happy, healthy children. For too many, however, unplanned teenage pregnancy and early motherhood is associated with low educational achievement, poor physical and mental health, social isolation and poverty. For the very young with little personal or financial support, pregnancy can cause considerable distress, not only for the young person concerned, but also for their families. The closer one approaches the issue,

the more it becomes clear that there is no easy technical 'fix' that can be applied. Consequently, activities to tackle teenage pregnancy have to be across sectors and to be multifaceted; anything that is done needs to involve and be understandable to the vulnerable young people themselves. They need to tackle:

- low expectations—it is more common in disadvantaged groups with poor expectations of education or jobs. In the UK, there were more teenagers who saw no prospect of a job or thought they would end up on benefits anyway. Put simply—they see no reason not to get pregnant:
- Ignorance—young people lack accurate knowledge about contraception, sexually transmitted diseases, what to expect in relationships and what it means to be a parent. Only around half of those under 16 years of age and two-thirds of those aged 16-19 years use contraception when they start to have sex: and
- mixed messages—sex is a staple diet of modern media. Sometimes it may appear to teenagers that sex is compulsory, but contraception, which infrequently receives acknowledgement in the media, is illegal. Mixed messages between the media and parental embarrassment leads not to less sex but to less protected sex (Fig. 3).

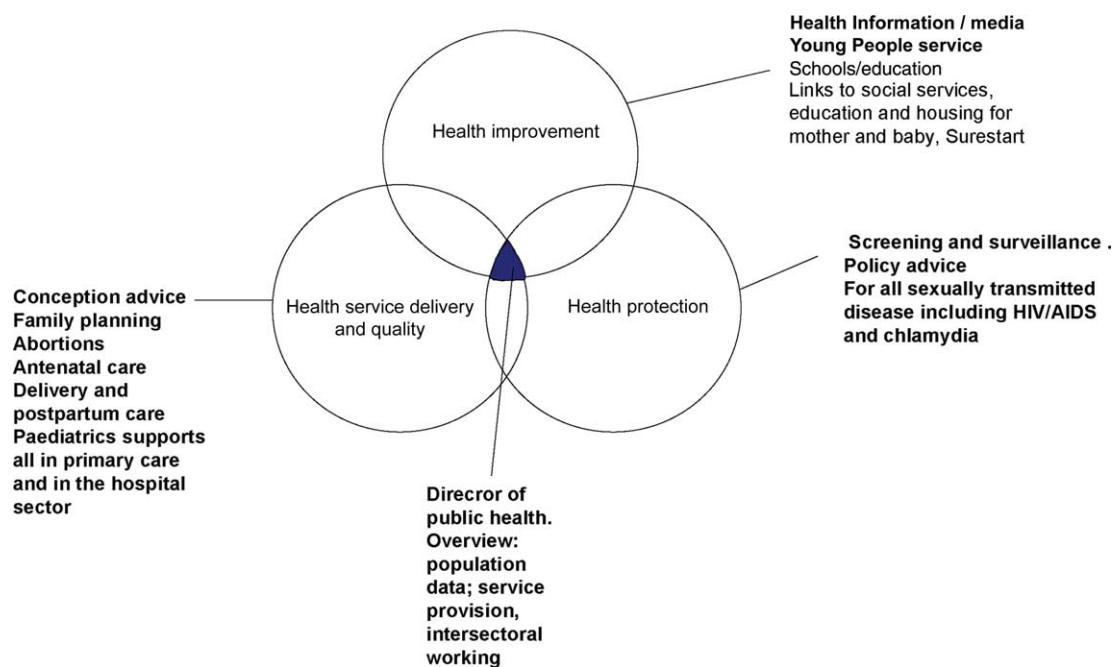


Figure 3 Teenage pregnancy: applying the three domains. HI, health improvement; HP, health protection; HS, health service delivery and quality.

Table 1 Applying the three domains: Teenage pregnancy as a case study

Issue	Action
<i>Health improvement</i>	
Avoiding unwanted teenage pregnancy through appropriate sex education, including peer education, and counselling services available to young people attending schools and youth clubs	Needs links at policy level with education, schools, youth service, connexions. Roles for school nurses, counsellors, teachers and others in primary care
Messages re-inforced through media	Links made at local and/or national level with journalists
Support to young parents within communities, for example, through faith-based groups and providing housing opportunities	Community-based initiatives supported through joint working in local strategic partnerships. Members of public health team will be engaged through local links. Support for housing through housing associations
<i>Health protection</i>	
Young people who are having unprotected sex are at risk of sexually transmitted diseases such as chlamydia/HIV	Local health protection teams have a role in surveillance based on robust system linked to labs. Needs to communicate with primary care trust team. Advice also needs to be available from GUM clinic/PCT/school-based scheme
Once pregnant, screening for disease including HIV/hepatitis B/syphilis	HPA advises on screening working with local providers
Local PCT needs to know rates of STIs and whether targets are being met	Role for observatories, best linked with HPA. Diversification of provision needs information overview to enable DPH to monitor their population
<i>Health service quality</i>	
Unprotected sex: needs emergency contraception	Could be available from local pharmacy, practice, family planning clinic
For those who become pregnant and choose to terminate the pregnancy, services providing not only abortion but counselling and advice are needed	Service planning need to be aware that access is likely to be primary care: voluntary agency. Role for primary care staff caring for pregnant mother with understanding of risks, needs for information and social context
For those continuing with the pregnancy, sensitive antenatal care, delivery and postpartum care followed-up into the community are needed with paediatric follow-up	Commissioning role of public health specialist important to ensure quality of services, with community links
Primary care is essential as the setting for much of this care but needs to link effectively with hospital sector	DPH/specialist links within PCT with clinicians as well as with board are important, articulating needs, effective interventions, priorities and service plans, monitoring outcomes. Health visitor engagement
Once the baby is born, schemes such as Surestart ¹⁶ need to be available	To help young mothers to get back into education and employment as well as providing parenting skills, childcare advice and provision
HIV, human immunodeficiency virus; GUM, genito-urinary medicine; PCT, primary care trust; HPA, Health Protection Agency; STIs, sexually transmitted diseases; DPH, director of public health.	

The three domains can help to frame both the actions needed and those who need to be engaged in constructing the public health programme (Table 1).

In addition to the framework being used to determine the range of services needed within

a public health programme, the three domains can also be used as the basis for understanding the skill mix needed by those delivering services. Whilst some skills will be those of specialists, the model demonstrates why others in the NHS (midwives, general practitioners) and outside (teachers,

community workers, parents) will also need public health skills if programmes are to be delivered effectively.

Summary

In this paper, we have proposed a conceptual model for understanding the context of public health practice by proposing a framework to organize complex systems. The model builds on the recognition that public health is everybody's business and therefore, needs a common definitional base. However, different levels of skill and a wide range of contributions are needed if public health programmes are to make the most impact. The different domains of practice help to construct a basis for understanding the necessary elements of the public health system and the still mix needed. They are a dynamic concept not meant to rigidly demarcate territory but to promote greater understanding of public health practice.

Using teenage pregnancy as a case study of a public health programme highlights the characteristics of the model. It demonstrates not only the importance of the role of the DPH in taking a population-based overview, but also the need for a multisectoral, multidisciplinary approach. The relevance of the public health approach not only to primary care but also to the hospital-based sector becomes apparent, as does its relevance to communities, the voluntary sector and local government. Integration of the three domains, a common definition and the framework for the public health system will support effective delivery of health improvement.

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References

1. Department of Health. *Choosing health: making healthy choices easier*. London: Department of Health; 2004.
2. Department of Health. *NHS improvement plan*. London: Department of Health; 2004.
3. HM Treasury. *Securing good health for the whole population*. HM Treasury; 2004.
4. Department of Health. *Shifting the balance of power in England*. London: Department of Health; 2001.
5. Department of Health. *Getting ahead of the curve*. London: Department of Health; 2002.
6. Faculty of Public Health, Public Health Resource Unit, Department of Health. *Joint workshop report on capacity seminars*. London: Faculty of Public Health; 2004.
7. Griffiths S, Wright J, Thorpe A. *Choosing health: results of a survey of the specialist workforce; 2004* (in preparation).
8. World Health Organization. *Alma Ata declaration primary health care*. Geneva: World Health Organization; 1978.
9. World Health Organization. *Ottawa charter for health promotion*. Geneva: World Health Organization; 1986.
10. Griffiths S. In: Beaglehole R, editor. *Public health in the UK*. In: *Global public health*. Oxford: Oxford University Press; 2002.
11. Winslow CEA. *The Evolution and significance of the modern public health*. New York: Yale University Press; 1923.
12. Department of Health. *Public health in England. Report of the committee of inquiry into the future development of the public health function*. London: Department of Health; 1988.
13. HM Treasury. *Securing our future health: taking a long term view*.: HM Treasury; 2002.
14. Faculty of Public Health—www.fph.org.uk
15. Association of Directors of Public Health. *The Role of the director of public health*. London: Faculty of Public Health; 2004.
16. Surestart. <http://www.surestart.gov.uk/>
17. Dahlgren and Whitehead diagramme: Whitehead M. & Dahlgren G. *Policies and strategies to promote equity in health*, WHO, Copenhagen; 1992.
18. Department of Health, Social Services and Public Safety. *Review of the Public Health Function in Northern Ireland, Executive Summary, December 2004*. Webreferences: <http://www.dhsspsni.gov.uk/publications/2004/Health-function-exec-summary.pdf>, accessed 13 June 2005.

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