Getting Evidence into Practice to Reduce Health Inequalities

Context and Progress on HDA implementation

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1. Introduction

1.1 The Government has a long-term strategy to tackle inequalities in health (ref). It has two key goals – targets for 2010 on life expectancy and infant mortality, and longer term impact on the wider determinants of health inequalities. Themes of the delivery plan include breaking the cycle of inequalities, tackling the big killers, improving access to services, strengthening disadvantaged communities and supporting vulnerable groups (ref). Achievement of the plan will require significant changes in the way services across the public sector are organised and delivered in order to improve their capacity to promote the public's health, and specifically that of the disadvantaged. Recognising the impact of services and systems on public health, and refocusing resource in to areas that will deliver effective health improvement will require new knowledge, skills and enhanced capacity.

1.2 The Health Development Agency was established to support this effort after the publication of *Saving Lives: Our Healthier Nation* (DOH, 1999) to ensure that *'organisations and individual practitioners base their work on the highest standards and over time raise the quality of the public health function in England.'* The R&D strategy for public health (DOH, 2001) endorsed the role of the HDA in this endeavour by charging it with *'maintaining an up to date map of the evidence base for public health and health improvement …and effective and authoritative dissemination of advice to practitioners'.* This role was further expounded in the 2002 review of the HDA to *'develop a more systematic approach to disseminating evidence and guidance and.. facilitate changes in front line practice.'*

1.3 Bringing about change based on evidence is not straightforward. Collecting and appraising evidence, the conversion of evidence into advice and guidance and effecting change within complex systems, are fundamentally different types of phenomena. The assumption that when research information is made available it is accessed by practitioners, appraised and then applied in practice is false (NHS Centre for Reviews and Dissemination, 1999). In order to get evidence into practice, the problem of combining evidence with expertise, or of synthesising accumulated and

controlled systematic observations with practical wisdom, (the German idea of *technic*), has to be solved (Glover & Kelly, 1987). The distinction between the theoretical and the applied remains a barrier that must be broken down in order to turn evidence into better practice. The *technic* approach involves acknowledging the legitimacy of different types of learning and of finding ways of synthesising them and turning them into agents for change.

1.4 The collection of data, through systematic review to the production of summaries or syntheses of the state of the evidence, is an iterative but ultimately linear process. Its logic is rationalist, and while scientists may dispute the methodological and philosophical bases and definitions of evidence, the principles are relatively well defined and the issues and disputes well rehearsed (Egger et al, 2001). In contrast, the ways in which deliverers of service engage with and change practice in line with the evidence is neither linear nor simple (Green, 2001, Greenhalge, 2001; Dunning, 2001; NHS Centre for Reviews and Dissemination, 1999; Ollerearnshaw & King, 2000; The NHS Confederation, 2001). This paper confronts some of the practicalities involved in putting evidence into practice, which acknowledges the complexity of the processes and the ways of working with the different logics involved, and charts the progress of the HDA in developing these functions. It also describes some of the underlying theory and debate in the fields of producing evidence of effective public health interventions, developing practical guidance and supporting change in practice and systems.

2. Evidence based public health

2.1 The drive for evidence based medicine and evidence based health care has grown in the last decade or so. The signal for more engagement of research in health care decision-making was given in 1991 by the publication of a research and development strategy for the NHS (DOH, 1991). The need to critique and synthesise the findings from pharmaceutical and clinical research led to the formation of the International Cochrane Collaboration (Chalmers, 1993) summarising and making available clinical research by area of speciality. Subsequently in England, the NHS Centre for Reviews and Dissemination, the National Co-ordinating Centre for Health Technology

Assessment, and the National Institute for Clinical Excellence were established to systematically review the primary research literature to provide answers for decision-makers in the NHS on the most cost-effective treatment options.

2.2 Evidence based medicine was defined by Sackett et al (1996) as *'the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients'*. Explicit guidelines were produced for the derivation of evidence of effectiveness from primary research i.e single studies through the process of systematic review (secondary research), (NHSCRD, 1996). This privileged inclusion of studies on the basis of the strength of the research methodology employed, creating, whether intentionally or not, a 'hierarchy' of research design with experimental studies, especially randomised controlled trials (RCTs), at the top, and observational and other qualitative studies lower down.

2.3 The extension of this approach into answering questions about the effectiveness of health promotion and other public health interventions in both NHSCRD reviews and the Health Education Authority's series of effectiveness reviews (see for example refs) sparked considerable debate in the literature about both the nature of research used to evaluate health promotion, and the lack of understanding of intervention process (Speller et al, 1997; Nutbeam, 1998; Davies & MacDonald, 1998; Scott & Weston, 1998). The crux of the arguments were that RCTs are an inappropriate research method for evaluating complex community based interventions where target groups cannot be randomised to provide controls, and where multiple interventions are operating simultaneously on individual, community and system levels. In contrast simple behavioural interventions on individuals are amenable to this approach and are therefore over-represented in the research literature. The International Union for Health Promotion and Education has continued to lead the debate about effective health promotion internationally through its global effectiveness programme (IUHPE, 2000).

Inclusion criteria for many reviews pay insufficient attention to the quality of the interventions being evaluated, such that poorly designed interventions might be

included in reviews while carefully implemented interventions might be excluded on the basis of the research design. Even where interventions may have been of good quality, *'Given the lack of attention in many research studies to process evaluation, important features of the intervention design may not be known…thereby reducing the ability of practitioners to adopt the methods..'* (Speller 1998). Implications arising out of these concerns were debated in a state of the art workshop on the contribution of reviews to evidenced based health promotion (Meyrick, 1997). At the same time there were also concerns about the need to include qualitative research and other methods in evidence based clinical practice, (Black, 1996; Green & Britten, 1998)

2.4 It was in this context that the HDA was charged with maintaining a map of the evidence base for public health interventions, collating and synthesising evidence from an accumulating number of systematic reviews of variable quality, and to draw from, consolidate and make evidence accessible from existing sources whilst acknowledging the limitations and pitfalls. This task would be the springboard for developing guidance and support for implementation of effective public health action in England, while also assessing the need for and possibilities of enhancing the evidence base to incorporate other forms of desirable evidence. The approach taken since 2000 to develop the evidence base and make information available is described below.

Evidence Briefings

2.5 *Evidence Briefings* consist of summaries and syntheses of review level evidence on a range of topics. The HDA team have developed detailed protocols for searching databases, conducting the critical appraisal of the reviews, and writing the documents (Kelly, et al 2002). These first editions consist of tertiary level research, i.e. reviews and syntheses of existing systematic reviews and meta analyses. Table 1 lists the *Evidence Briefings* being produced between 2002 -2004.

Table 1. *Evidence Briefing* topics and planned publication dates

Topic	Publication date
The prevention of obesity	
HIV/AIDs	
Smoking	
Drug use	
Alcohol misuse	
Accidental injuries in children & older people	
Hepatitis B infection	
Low birth weight	
Sexually transmitted infections	
Teenage pregnancy	
The promotion of social support in pregnancy	
Mental health	
Physical activity	
Breastfeeding	
Depression in later life	
Men's health	
Community development	
Health impact assessment	
Transport	
Housing	
Employment	
Child poverty	

The *Evidence Briefings* consist of detailed expositions of the strengths and weaknesses and identification of gaps in the evidence, an analysis of future primary and secondary research needs, and a discussion of the implications of the evidence for policy and practice. Each document has a freestanding summary. The documents are supported by the HDA website <http://www.HDA-online.org.uk/evidence> which, also contains electronic copies of the original systematic reviews upon which the Evidence Briefings draw, and full bibliographical information about primary sources. The documents are designed to be accessed by a variety of users including those simply looking for headline findings, those wanting complete detailed synthesis, and those who need to track back to the original primary or secondary sources. There is an audit trail from primary research source to policy and practice implications.

2.6 The following three tier arrangements exist for developing the Evidence Base. There is an overarching Public Health Evidence Steering Group (PHESG) serviced by the HDA and chaired by Department of Health on behalf of the Chief Medical Officer. This has membership drawn from universities, Public Health and Research

and Development Divisions of the DOH, other government departments, public health practitioners, representatives of the main research funding bodies, the NHS Centre for Review and Dissemination, the Cochrane and Campbell Collaborations, EPPICentre, other UK and WHO representatives. This group advises on the broad strategic direction of the evidence base and has a remit to quality assure the processes developed by the Agency to construct the evidence base.

For each topic area covered in the evidence base there is a reference group. These report to the PHESG and consist of a mixture of academics and officials with an interest and expertise in the field along with a variety of members of interest groups and potential users of the evidence base. The main tasks of the reference group are to quality control the content of the evidence base and guide the production of *Evidence Briefings*. Finally a series of panels are being established for the purposes of continuous evaluation and as a means of giving the users of the evidence base a voice in the process. The commentary deriving from the user panels will also help determine the subsequent questions, which the teams constructing the evidence base will need to consider.

2.7 In and of themselves the *Evidence Briefings* simply provide a comprehensive, systematic and up to date map of the evidence base for public health and health improvement, with a particular focus on reductions in inequalities in health. They are a resource that will be used by a variety of audiences. They are source documents from which a range of other products may be developed. However, they are a passive resource. In order for the evidence to be used, an active approach to the evidence to make it accessible, usable and implemented is required.

3. Supporting change in public health practice & systems – Developing and disseminating guidance

3.1 The HDA's role in developing the evidence base for public health is to disseminate advice and guidance and support change in practice and systems to improve the quality of public health. That research evidence and guidance alone are insufficient to incorporate recommendations into health care professional practice has

been clearly articulated by the NHS Centre for Reviews & Dissemination (1999). Rogers' (1995) theory of diffusion of innovations describes how members of a social system learn about, decide about and act on ideas or practices that are perceived as new. He described a four stage process:

- Dissemination – planned efforts at raising awareness and encouraging adoption
- Adoption – making a commitment to initiate
- Implementation – interventions to assist in delivering the programme to its original design
- Maintenance – encouragement to continue use

The HDA *Evidence into Practice* programme aims to address each of these stages, following identification of effective interventions, to secure changes in public health practice. The limitations of evidence based policy implementation in the absence of a supportive programme addressing all stages was well illustrated in the context of a recent evaluation of implementation of a policy of using research-based substance abuse curricula in the US (Hallfors & Godette, 2002). They found generally poor uptake and that implementation in schools was influenced by the extent to which programmes were seen to have a relative advantage and were compatible with existing values and needs. In addition they found that in the absence of support, complex interventions were simplified and therefore might not be effective. In the local government sector a survey of local authorities in the UK to assess the utilisation and impact of research on local government, found the use and consequent impact of research in policy-making to be relatively small; there is a lack of skills and systems to provide information on effectiveness, and the use of locally commissioned research is favoured (Percy-Smith et al, 2002).

3.2 A critical stage in preparation of guidance is that it is acceptable to practitioners and is congruent with their values and needs, and that it is implementable in local contexts. By ensuring that guidance is informed by practice it not only improves the

quality of the product, but also it begins the process of dissemination and informs the identification and design of support to the stages of adoption and implementation, and is thereby an integral part of the process of change.

3.3 Creating guidance and developing resources to support change involves bridging the gap between the evidence as demonstrated by research, and the effectiveness of these recommendations in ordinary populations under non-research intervention conditions. It will involve assessing the extent to which interventions need to be adapted to target segments of the population in order to reduce health inequalities. The extent to which methods will need to be amended to be applied in particular communities, organisations and localities, and realistic assessments of the kinds of effect size (amount of individual or population change) that might reasonably be expected from an intervention under routine circumstances, will be considered. The apparent smallness of effect sizes in comprehensive community interventions has led some commentators to the conclusion that public health interventions may not be very effective (Hanlon, et al, 1995). However while the particular effects of specific interventions may be small, the cumulative effect of repeated interventions of a similar type, and the synergistic effect of combined interventions may produce much larger population effects.

3.4 Finally the process of creating guidance allows for the identification of effective practice as defined by those in the field. This is especially relevant where there are gaps in the evidence base as, as has been seen, primary and secondary research sources are limited in their attention to evaluable types of public health interventions, and there are very few that aim to address inequalities, (Millward et al, 2001). The question of how to formally incorporate such evidence from practice into the evidence base will be addressed in Section 4 alongside the related issues of integrating different forms of research evidence. The process of guidance production described below will however address the issues of combining scientific fact with practical wisdom in a systematic way.

Effective Action Briefings

3.5 The HDA has previously produced evidence-based guidance and supported the development of aspects of effective public health practice (West et al, 2000; Health Development Agency, 2001; 2002). These earlier documents were based upon a rigorous assessment of the evidence and knowledge of current good practice. The HDA are now developing an integrated and systematic way of involving of practitioners in the development of the programme of getting evidence into practice, including the production of *Effective Action Briefings*. This is a necessary condition of getting the product right and an integral component of creating the conditions for change. Flexible and evolving mechanisms are being established to draw out the expertise of such groups as health visitors, school nurses, and teachers, as well as medical and related practitioners, managers and civil and other public servants, as appropriate, for the topic under consideration.

3.6 An Evidence into Practice Steering Group (EIPSG) has been established and has had its first meeting in January 2003. Its role is to monitor strategic direction, provide quality assurance and leadership, both of the overall activity and of change and development at local level. It will link with local structures such as the Regional Directorates of Public Health, Public Health Observatories and the regional structures of HDA. Members of the Steering Group are drawn from senior officials at the Department of Health, members of appropriate task forces, key players in the evidence into practice field, including those involved in modernisation and improvement programmes such as the Modernisation Agency and Improvement and Development Agency for example, and other cross departmental representation. This will be the forum for a partnership between the HDA and other organisations engaged in similar activities. It will report annually to the Board of the HDA and the Chief Medical Officer. The EIPSG will oversee several different activities: the appraisal of practice and development of guidance, and the management of implementation of the guidance. Two pilot projects on the topics of accidental injury in children and physical activity, have been underway since 2002, to test and refine the processes described below. These will report in March 2003 and revised processes will be applied to other selected *Evidence Briefings* as part of the HDA's programme of work for 2003-4.

3.7 Once the *Evidence Briefing* has been signed off for publication, the next part of the process will begin. A task group will be formed to include not only the original authors, but also other HDA staff, policy leads from Department of Health and other government departments as relevant, and academics from the evidence reference group and from the HDA's Collaborating Centres in the particular topic. Their task will be to write a commentary on the core evidence. This will consist of the identification of the points where the evidence is at its strongest and the meaning of their findings and what may be the means to turn the findings into action. This will consist of an appraisal of the extent to which the evidence statements and core findings are generalisable, transferable, and context specific.

There are several tests which the group will apply to the findings in the *Evidence Briefing*. These are: burden of mortality and morbidity related to the finding, including the availability of cost effectiveness data; internal validity i.e assessing how good the basic science is which may require returning to the primary studies; operationalisation, that is the extent to which meaningful and useful implications for practice can be drawn from the findings in terms of detail and replicability of the interventions tested; and finally, external validity i.e whether the intervention and the process have validity across place, persons and time. Experience from the pilot projects to date has demonstrated the need to return to the primary research for this information, and the relative paucity of information on interventions available in reported studies upon which to base these judgements.

3.8 At the same time as the evidence is being scrutinised the task group will set about appraising practice in the arena in question. A group of relevant practitioners and key agents involved in the delivery of the service, relevant NGOs and so on, decided on a case by case basis, will be formed. If appropriate, one of the HDA's Practice Development Collaborating Centres will lead this activity. Additional focus group work to help make an assessment of the field will be commissioned should it appear necessary. The purpose of this part of the activity is to engage in critical appraisal of existing practice in order to identify strengths and weaknesses. This will consider current organisational and professional barriers to change, current standards and needs and opportunities for public health workforce development in order to better identify change drivers, triggers, opportunities and pressure points.

3.9 The learning from both exercises will then be brought together to integrate the best evidence with what is known from and about practice to address the question of how to bring about changes in services or interventions which would have the greatest impact on the overall health of the population, and which would be effective in reducing inequalities in health. This would result in the production of an *Effective Action Briefing* document with clear recommendations of effective and implementable public health interventions to improve health and reduce health inequalities, which takes account of the activities of other improvement agencies. This will describe the potential costs of taking the actions, and any opportunity costs and recommendations for activities that should be stopped in favour of any intervention proposed. The sectors and practitioners involved, performance management implications and short, medium and long-term outcomes and process indicators and their fit with key targets set by government will be identified.

3.10 The guidance so produced will then be disseminated to raise awareness of effective actions through the HDA's communication functions and regional activities. This represents the first stage of diffusion according to Rogers (1995). The second stage is the adoption, or intention to introduce or make the changes proposed. The regional HDA staff will be in an influential position to support this phase in local policy implementation and planning through regional public health networks with the provision of evidence based guidance. However, as we have seen, these are insufficient in themselves to create and sustain change, other mechanisms are required, both to support implementation at the level of individual practice of health care and other professionals, and of organisational and system change. As the NHSCRD (1999) review states, *' Dissemination activities by themselves are unlikely to lead to changes in behaviour. However this should not be taken to mean that raising awareness of the messages underpinning proposed changes is unimportant. Whilst the relationship between knowledge and behaviour is rarely linear, awareness of 'the message' still plays an important part in the process'.* The HDA's communication function will maximise electronic and paper dissemination opportunities, learning from the needs and preferences of the field and from the experience of other agencies such as NICE (Ranson, 2002).

4. Supporting change in public health practice and systems – Implementation and maintenance

The theory of both individual and organisational change, its current implementation in the health care field, and the HDA's response to developing this approach to public health, are outlined below.

4.1 Key principles for changing individual practice are described in the NHSCRD (1999) review of getting evidence into practice, and the Cabinet Office review of spreading good practice (Ollerearnshaw & King, 2000). These include as a first step, a diagnostic analysis of the factors likely to influence change in the user group including internal factors such as the preparedness to change, and any external barriers. Involving peers at all stages of defining and disseminating best practice is vital, as is the need to involve learning from others' experiences and identification of what will work in local circumstances. Successful strategies are likely to be broad based and multifaceted, and to include effective elements such as use of reminders and educational outreach, within a wider co-ordinated strategy with contact through networks, benchmarking or other interactive systems. Appropriate training is necessary and strategies should be co-ordinated by those with the skills and knowledge across all stages of dissemination to implementation. Instructions from 'the centre' should be avoided, and people need to trust the source of data. Finally approaches should include means to monitor and evaluate the extent to which proposed changes are achieved, and to reinforce the maintenance of change.

4.2 The recognition that individual change requires a supportive and enabling environment indicates the need to also consider organisational change. The White Paper *A First Class Service* (DOH, 1998) stated that *'Change may be an imprecise science, but evidence is available on what works and what does not, and the NHS must make use of this'*. The National Co-ordinating Centre for Service Delivery and Organisation has reviewed evidence in the field of change management (Iles & Sutherland, 2001). This covers the literature on organisational change methods, not including issues to do with leadership, incentives to change or impact or policy and regulation. The authors also clearly stipulate that the nature of the evidence used

differs from that which is relevant and useful in the clinical arena. Change is multidimensional and it is an iterative process. It can be planned or emergent ie apparently spontaneous (Dawson, 1996); or episodic - infrequent, discontinuous and intentional, versus continuous – incremental, evolving and cumulative (Weick & Quinn, 1999); or developmental, transitional or transformational (Ackerman,1997). Developmental change is planned or emergent and enhances or corrects aspects of an organisation; transitional seeks a state different to the present and is similar to Lewin's 'unfreezing, moving and refreezing' (1951); Transformational change requires a shift in assumptions and can result in a radically altered organisation whose form is not known until it takes shape. Iles & Sutherland conclude that recent high quality management of change literature has a central message that *'organisational-level change is not fixed or linear in nature but contains an important emergent element'*.

4.3 Some of these models imply that change is orderly and rational, however the thinking on change in systems recognises that organisational change can be chaotic and complex. Systems theory, which has is origins in the 1920s, describes a system as being made up of related and interdependent parts which has properties of and thus must be viewed as a whole, and that it cannot be considered in isolation from its environment (Checkland, 1981). The distinction between systems thinking and scientific method as described by Popper (1972) is that while scientific thought is reductionist, insofar as it breaks things down into component parts and explores the properties of these parts, systems thinking explores the properties of the whole. This tension, between analysing components versus the whole, in both research and change management, echoes the underlying tensions inherent in the field of getting evidence into practice, and the HDA *Evidence into Practice* programme needs to be able to embrace both the range of underlying methodologies and their application in practice.

4.4 Complexity theory develops the contrast between the machine metaphor for simple systems and the chaos of complex systems. Complexity science suggests that elements of systems can change themselves, complex outcomes and big change can result from simple rules and small changes, and continual creativity is a natural state. This thinking has been applied to the NHS as a complex system in the NHS Confederation *Leading Edge* discussion papers (2001). Learning from change

management practice indicates that different processes are required to support change in differing conditions of complexity. Stacey's 'Agreement and Certainty Matrix' (Stacey, 1999) is helpful in that it identifies appropriate management mechanisms dependent on the balance of agreement and certainty about particular actions. In short, Stacey proposes that where levels of both agreement and certainty are high the field is ready for the development of planning and control mechanisms such as application of standards of practice and performance management against these. In complex systems where either dimension is low, changes in practice will follow from other change management approaches such as experimentation and local innovation. In this case however the innovations will need to be carefully evaluated in order to capture the learning to increase the evidence and shared understanding of good practice. The mechanisms described above in the two HDA activities of producing *Evidence Briefings* and *Effective Action Briefings* will, for the first time, provide assessments of both certainty, i.e. the availability and strength of the evidence, and from the appraisal of current practice, the level of 'agreement' in the field about the nature of and capacity for changed practice in public health. This will lead to the ability to design appropriate implementation programmes, the third stage of Rogers (1995) theory of diffusion of innovations, based on the knowledge of effective practice in changing individual professional behaviour and organisations.

4.5 The NHS Plan (ref) initiated a ten year plan for the improvement of health services, and created the NHS Modernisation Agency to help staff make sustainable changes in the delivery of healthcare. This modernisation movement has encompassed a number of improvement and development programmes and has been at the leading edge in the adoption and implementation of improvement techniques, including both service improvements and leadership skills. This has included collaboratives for CHD, cancer, primary care and healthy communities, which have not only brought about service changes but increased the capacity of the service in terms of knowledge and skills in improvement and change techniques. They have published a number of 'improvement guides' on these techniques (NHS Modernisation Agency, 2002 a,b,c). The Research Into Practice Programme was set up in 2001 as part of the agency, to help capture and share the learning gained through these service improvement activities (RIPP, 2002). The HDA's *Evidence into Practice* programme will draw on

this learning and the understanding and increased capacity in the NHS to apply these change techniques to support and sustain the implementation of effective public health interventions.

4.6 Implementing changes in the broad arena of public health, which includes many other partners and sectors in addition to the NHS, brings with it its own challenges, and increased levels of complexity. A capacity building framework specifically for this broader field of health improvement has been developed in Australia (NSW Health, 2001) which will be helpful, as it is a tested model of change and capacity building in public health, for conceptualising the range of change activities the HDA and practice development collaborating centres will deliver. Capacity building is defined as *'an approach to the development of sustainable skills, organisational structures, resources and commitment to health improvement in health and other sectors..'* (Hawe et al, 2000). The framework identifies 5 key dimensions for change actions: organisational development, workforce development, resource allocation, partnerships and leadership. Returning to the evidence for effective change approaches we can see that the distinction between organisational development and workforce development (or individual professional behaviour change) underscores the need for different and complementary approaches. Building effective partnerships is also an area for HDA support programmes. The HDA can influence resource allocation at regional and local levels (the adoption phase of diffusion), but it currently does not have a capacity to support leadership development directly.

4.7 The HDA has resourced four main routes to supporting the development of effective public health practice and systems: the nine regional development arms of the HDA, a central practice development team, specific national co-ordination programmes eg the National Healthy School Standard, and Practice Development Collaborating Centres to be established in 2003. Each of these strands will contribute to the dissemination and adoption of effective practice as already described. Importantly, it will be through these routes that implementation of effective practice, resulting from the analysis of research and practice evidence produced as *Effective Action Briefings* will be supported using a range of change techniques and improvement methodologies as appropriate to the sectors and audiences involved. Where indicated, new tools, resources, educational materials etc will be produced and

disseminated to support these efforts. Tasks will include the collation, assessment and training for development workers in organisational development and improvement tools with a critical assessment of their value and appropriate use. Working with professional groups, service and educational providers, and regional HDA staff to identify support needs, recommendations will be made as to appropriate change mechanisms for workforce development and organisational change. As an integral part of the Evidence into Practice pilot projects the potential avenues of organisational and workforce development support to implement effective actions in the area of physical activity, accidental injury prevention in children and breastfeeding initiation has been illustrated (ref). National level co-ordination of regional delivery will facilitate learning from practice and sharing between regions. The key features of the delivery and development functions of the HDA will be that they aim to implement effective public health actions, using evidence based methods that build on what is known about best practice in improvement techniques and, critically, engage with the field to support the detail of implementation locally. These processes will influence and inform the preparation of *Effective Action Briefings* and then take the resulting recommendations forward into practice.

4.8 The final stage in diffusion, of maintenance or sustainability, will be supported through both real and electronic networks for continued learning between players in the field. However the HDA also has an influential role with DOH, Strategic Health Authorities, the Commission for Health Audit and Inspection, the Local Government Improvement Programme and professional bodies to ensure that effective practice is incorporated in policy and in occupational standards, and is consequently performance managed, and where appropriate inspected against.

4.9 The HDA has been developing quality protocols for elements of the implementation processes described above to ensure that HDA practice and that of its collaborators meets evidence based standards. In addition to the previously described protocols for evidence review and synthesis, and guidance preparation, protocols have been developed for: the development and maintenance of websites, learning from practice, learning networks.

5. Improving the knowledge base of effective public health

5.1 Given the limitations of the research base for effective public health, especially that to reduce health inequalities, and the recognition as detailed in this paper, of the imperative to validate and exploit the body of knowledge about effective practice held by practitioners and others in various parts of the public health system, the HDA aim to systematically enhance the evidence base to incorporate this. This requires the inclusion of different forms of research data, such as qualitative research, and of reports of evaluated practice.

5.2 A methodological workshop was held in February 2003 which debated some of the issues relevant to this, such as approaches to synthesising qualitative and quantitative evidence for policy and practice. Newer more inclusive processes of systematic review (secondary research) are being developed that may assist with the issues of both the widening of the research base and of understanding more about the nature of the interventions in the primary research (both concerns expressed in the work to date) whilst maintaining the critical rigour required to make judgements of effectiveness (Arai et al, 2003; Oliver et al, 2003). Through the mechanism of the Public Health Evidence Steering Group, the HDA will be drawing on these approaches in the preparation of second editions of *Evidence Briefings* in future years.

5.3 However these approaches still only penetrate the published literature. The wealth of information held in practice reports, good practice databases and in the stories told by practitioners, needs to be collected and critiqued in systematic ways to build and enhance the evidence base. These processes will be developed and need to be appropriately managed in HDA databases to ensure knowledge is available and easily accessible. Developments in interactive knowledge sharing such as the HDA *HealthAction* website which links communities of practitioners to exchange information about best practice, are not only mechanisms to support practice and organisational development, but tools to collate current information and will need to be assessed for their potential contribution to the enhanced evidence base. This area, of practice into evidence is one that the HDA will pay further attention to in 2003-4.

6. Measuring impact of HDA Evidence into Practice programme on public health systems and practice

6.1 It is important to note a number of distinctions between different types of potential impacts of public health interventions, their nomenclature and range. For example the distinctions between process evaluation which measures the activities of the programme, programme quality and reach; impact evaluation measuring the immediate effect of the programme (ie has it met its objectives) and outcome evaluation which measures the long-term health effect of the programme, (Hawe et al, 1990). Terms such as proxy, indirect or intermediate indicators are also used to measure short-term effects. In Green & Kreuter's Precede-Proceed framework (1991), described as an educational and ecological approach to health promotion planning, a causal chain of intervention processes and their impact are demonstrated. It shows that implementation of an intervention influences what are labelled as predisposing, reinforcing and enabling factors, which then impact upon behaviour, lifestyle and environment, leading to health and quality of life outcomes. So the effects the intervention has on the 'factors', which could be related to organisational and workforce development for example, are described as the process evaluation, whereas the changes resulting are considered to be impacts. Nutbeam's outcome model for health promotion (1998). identifies three categories of health promotion actions: 'education', 'social mobilization' and 'advocacy'; which produce health promotion outcomes or intervention impact measures in the areas of 'health literacy', 'social action and influence' and 'healthy public policy and organizational practice'. These lead to intermediate health outcomes or modifiable determinants of health in the area of 'healthy lifestyles', 'effective health services' and 'healthy environments', which finally lead to improved health and social outcomes. However as Nutbeam (1998) notes '*Tracing the causal path from a community intervention to subsequent long-term changes in health and social outcomes is fraught with difficulty, and it is inappropriate and unrealistic in most cases for programmes to be expected to do this.'* Hawe et al (1999) have also described and validated a range of indicators to assess the impacts of capacity building for health improvement which are relevant to the consideration of HDA impact.

6.2 If we consider the four stage of diffusion of innovations (Rogers, 1995) and the distinct steps in the *Evidence into Practice* approach of the HDA, using the production of *Evidence Briefings* and of *Effective Action Briefings*, and the support to changing public health systems and practice as described by four of the five dimensions of capacity building (NSWHealth, 2001) it can be seen where, and at what stage different types of impact may be measurable. (This omits the dimension of leadership as the HDA does not have a specific programme or remit to develop this at the current time).

	Evidence Briefings	***Effective Action Briefings***	**Resource Allocation**	**Organisational Development**	**Workforce Development**	**Partnerships**
Dissemination	✓	✓				
Adoption	✓	✓	✓			✓
Implementation				✓	✓	✓
Maintenance			✓		✓	✓

The types of indicators which may be used to assess degrees of impact in each of the stages of evidence into practice will include the following.

Evidence Briefings will have impacts on dissemination and adoption by:

- Inclusion in DH and other government department policy, citing HDA as an authoritative source
- Increases in funding for public health intervention research
- Increase in funding for research aimed at identifying effective methods for reducing inequalities
- Increase in research commissioning specifically aimed at filling identified gaps
- Increase in citations of HDA references

Effective Action Briefings will have impacts on dissemination and adoption by:

- Increase in practitioner awareness and knowledge of effective practice in public health
- Adoption of effective practice in service plans
- Increase in learning and development opportunities to promote effective practice
- Increase in readiness to change practice and systems

Changes in resource allocation as a result of HDA activities will be seen in:

- Effective actions to reduce health inequalities in service plans
- Resourcing for effective programmes of intervention
- Resourcing for workforce development opportunities in public health and specifically ways of reducing health inequalities
- Increase in funding for public health organisational development
- Pooling of budgets to support effective public health actions
- Increases in funding for public health intervention research
- Increase in funding for research aimed at identifying effective methods for reducing inequalities
- Increase in research commissioning specifically aimed at filling identified gaps
- Mainstreaming of funding for public health actions

HDA support to changes in organisational development will be seen by:

- Increased opportunities for service improvement approaches to support effective approaches to public health and health inequality
- Increased capacity for service delivery in effective public health
- Application of improvement and change techniques to public health issues
- Application of equity audit and health impact assessment techniques
- Inclusion of effective public health systems and processes in service standard setting
- Inclusion of effective public health systems and processes in performance management, review and inspection functions

HDA support to workforce development will be seen by:

- Changed professional behaviour in line with effective public health actions
- Increases in inclusion of public health practice in basic and post-basic training
- Increased workforce capacity and capability to deliver public health and reduce health inequalities
- Inclusion of effective public health practice in professional and occupational standards and competencies
- Increase in numbers of public health staff achieving specialist status

- Increase in numbers of staff achieving public health practitioner standards
- Increase in numbers of staff achieving task force prevention competencies

HDA support to effective partnership working to reduce health inequalities will be seen by:

- Uptake and use of *The Working Partnership* to assess partnership working practices
- Increase in capacity to support partnership development through trained facilitators
- Increase in partnership development processes
- Inclusion of effective partnership working in performance management indicators

6.3 The HDA will assess impacts through a variety of processes across this framework. This will include dissemination impacts, and routine surveys of awareness of and use of HDA products; regional collation of local impacts of uptake and application in local planning and service delivery; and formal evaluations of the impact of specific programmes on organisational and workforce development and partnerships as appropriate. Currently the HDA use some of these mechanisms, such as routine impact surveys, NHSS monitoring data and national evaluation, website use, pre-retirement pilots evaluation etc. In addition three specific areas of work are being evaluated thoroughly to test for a range of impacts. These include the dissemination of guidance on smoking cessation services' impact on resource allocation and maintenance of services; the organisational and workforce development impacts on leaders in public health nursing; and the impact on service delivery, planning and resource allocation of service improvement to support services for teenage parents. Increasingly routine impact data will be collected, and specific implementation programmes will be identified for increased funding for external evaluation.

Undoubtedly this is an ambitious project. It seeks to close an important loop in thinking about evidence based service innovation and development in public health. Obviously there does exist good practice and innovation in different parts of the service and in different parts of the country. The mechanisms and structures described in this paper provide an initial attempt at improving precision both in the

scientific basis of attempts to reduce health inequalities, and in the effective of methods used to support innovation and development.

7. References

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