

# Importance of public health research



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## Data and research relating to public health

Gathering data is an important process in the field of public health as it provides a bigger picture of current health status of populations and communities as well as identifying trends and potential problems. It enables care practitioners to recognise the social factors that are affecting the population. Death certificate provides information regarding the date, location and cause of a person's death. This information allows care professionals to determine which country is at the highest risk of developing a disease in order to control the spread of the disease. This data is also used to present the characteristics of those dying in a country, to determine life expectancy, and to compare mortality trends with other countries, which can facilitate the intervention of disease spread as care professionals can focus on the needs that take precedence. A census record contains a variety of information from household members, their ages, citizenship status, and ethnic background; this information is valuable, for example care professionals findings may be that a disease is constantly occurring within a specific age group and therefore this information allows care professionals to examine what factor is causing this disease to occur and to predict the statistics of that disease within that particular age group. This in turn allows health care professionals to plan strategies to control the spread of the disease. Mortality statistics provide data on causes of death and indicates the absence of health and wellbeing. Family medical history is also an important data source, as noticing patterns of disorders among relatives, healthcare professionals can determine whether an individual, other family members, or future generations may be at an increased risk of developing a

particular condition. Family health history can help care professionals choose screening tests, such as earlier cholesterol screening for people with heart disease in the family that occurs at younger ages in order to control the spread of the disease. Data may also come from the local authorities and government agencies with regards to environmental information, to determine the factors that contribute to an illness. A disease registry is a special database that contains information about people diagnosed with a specific type of disease. This allows care professionals to compare those who are ill with those who are not in order to identify the risk of disease. For example there could be more individuals suffering heart disease in America than China, and therefore based on the statistical information care professionals can examine and assess what is causing the disease to occur in America and the behavioural factors associated with the disease and why it is continuing in order to prevent the disease from occurring elsewhere in the population. A survey is generally carried out in order to answer a specific research question which relates to health and provides information against which future health effects can be assessed. These statistics are used to determine incidence and prevalence. Incidence is the rate of new disease occurring within a period of time which can be used to estimate one's risk of getting the disease, this method is crucial as allows early intervention, before the disease outspreads. While prevalence is a valuable method, as it provides a better measure of the disease load since it includes all new disease cases and all deaths between two dates, which is more effective when assessing the level of morbidity, and to assess the subsequent needs. The information obtained through data is used to monitor disease trends over time, identify high risk groups, allocate resources, and develop policy,

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design prevention programs, and support grant applications to meet service requirements.

Data related to service provisions has aided in accomplishing achievements for the public health. For example through epidemiology, data revealed that World-wide around 1.1 billion people lack access to improved water sources and 2.4 billion have no basic sanitation. Diarrhoea due to infection is widespread throughout the developing world. Through epidemiological information it is revealed that in Southeast Asia and Africa, diarrhoea is responsible for as much as 8.5% and 7.7% of all deaths respectively. The data is vitally important to public health as it assists care professionals to work in more than 100 countries around the world, particularly in Southeast Asia and Africa to improve water supplies and sanitation facilities in schools and communities, and to promote safe hygiene practices. Care professionals also sponsor a wide range of activities and work with many partners, including families, communities, governments and like-minded organizations. In emergencies they also provide urgent relief to communities and nations threatened by disrupted water supplies and disease. Using these approaches care professionals have managed to decrease to a little over 1 billion. In addition data through epidemiology disclosed that prevalence of overweight in the UK was expected to increase in both men and women over the next 10 years. However at least 80% of premature heart disease, stroke and type 2 diabetes and 40% of cancer could be prevented through healthy diet, regular physical activities and avoidance of tobacco. Epidemiology is based on the premise that diseases are related to environmental and individual characteristics, therefore care professionals designed prevention

programmes to encourage individuals to alter their lifestyle through raising awareness of the effects their lifestyle can have upon their health and through recommending the population to eat 5 portions of fresh vegetables/fruit daily. Care professionals also offer individuals a care plan which helps them manage their health day-to-day which can range from losing weight or stopping smoking and could reduce the risk of epidemic diseases. Using these approaches the UK has already made important gains in reducing chronic disease. The UK averted 3 million cardiovascular disease deaths through utilizing these approaches. Epidemiology works as a guide to the management of patients in whom disease has already developed and is relevant to the public health as it has saved many individuals from suffering diseases. Without data health and care professionals would not be able to monitor disease trends over time and won't be aware who is prone to diseases and as a result they would not be able to evaluate strategies and use treatment methods to prevent illnesses or disease from occurring which otherwise would be very damaging to the public health.

The legislative process involves taking a concept or idea and transforming it into a regulation. In terms of public health, an idea or concept can only be taken into consideration when there is sufficient evidence available and in this case the evidence is the disseminated trend and probability data as the data holds statistics which provides informative results. Politics and legislation are the routes through which public health policies are established. Policy, politics and legislation are the forces that determine the direction programs at every level of government and therefore trend and probability data is vitally important as public health policy influences health

through monitoring, production, and provisions and financing of healthcare. An example of a legislative process is, in the fourteenth century child mortality was low as about 150 deaths per 1000 children occurred due to poverty and therefore the data was used as confirmation and the bill was debated and approved by each House of Parliament, as it was recognised as a major issue and then received Royal Assent which means it became an Act, and thus Education Act (1906) became active and ensured that school meals were provided to the poorest children in order to enhance public health. Furthermore there was seen a downward trend in the level of child mortality. This suggests that without data it would be extremely difficult for ideas and concepts to be taken into account during a legislative process.

Reducing obesity is a public health policy in UK and this is transformed into intervention through giving people advice on a healthy diet and physical activity through the NHS Change4Life programme, and through improving labeling on food and drink to help individuals make healthy choices. Health practitioners are encouraging businesses on the high street to include calorie information on their menus so that individuals are aware and in turn are able to make healthy choices and are also providing individuals guidance on how much physical activity is necessary. Through the government's Public Health Responsibility Deal, businesses and organizations have reduced ingredients that can be harmful if people eat an excessive amount of them and are encouraging people to eat more fruit and vegetable to help reach their 5 A DAY through media campaigns and also through anti-obesity campaign.

Reducing drug misuse is another UK policy in which social service and social community The Business Rates Retention Scheme are helping young people

who have problems with drugs by giving them treatment and support, including supporting them in other areas of their life, such as housing or mental health problem so that they don't return to drug use as a way of coping with these problems. There is also a variety of information offered from the internet to help individuals reduce their intake of drugs and through drug campaigns.

Research adds to the sum of human knowledge and gives us the tools to discover how and why things work, such as what interventions are effective, through providing evidence. When we act on the results of research, it is known as evidence-based practise. Health and care practitioners use a variety form of research, such as applied research uses the outcomes of research to determine what interventions are effective. Organisations that use applied research include the National Institute for Health and Clinical Excellence, the Social Care institute for Excellence and the Institute for Education. These organisations identify and share knowledge about what works and what's new. They support health and care practitioners who plan, commission, deliver and use services to put that knowledge into practice and inform, and influence the direction of future practice and policy. Clinical research is generally the final stage of a clinical trial for testing news drugs and treatments to measure its effectiveness and side effects. Outcomes research focuses on the effects of disease on individuals and society, the cause of ill health and the factors that contribute to health outcomes. An example of this type of research is the Marmot Review. Health and care practitioners carry primary research their selves, which involves planning, information gathering, and delivery of the research. They provide directions

and design the methodology. Health and care practitioners may also use secondary research which involves using research others have done in their chosen area of investigations, for example practitioners may want to carry out a review and critique of someone else's work to demonstrate that the conclusions they have drawn are not valid or biased. Research in the social science is concerned with the social world and human interaction. This provides care practitioners knowledge and confirms existing knowledge. In addition it provides value to society as a whole through increasing understanding and benefits governments, organisations and individuals when the knowledge is used to improve the systems, structures and process that aid society function and improve health and well-being of individuals. While research in the natural science helps health practitioners to increase knowledge and understanding of conditions that either affect service users or are inherited genetic disorders. When individual's health is affected research can help care practitioners to identify how to enhance service users well-being.