

## Environmental Health Sustainability Indicators: A Lesson from History

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The exploits and achievements of great men and women spur us on to greater effort. Their contribution to the public good is like the proverbial “breath of fresh air”. John Graunt, the father of health statistics, was such a person. His analysis of the London Bills of Mortality in 1662 enabled him to demonstrate successfully four of the most important facts that vital statistics disclosed. First, he made clear that there was a certain regularity in the occurrence of phenomena, which, considered independently, may appear to be merely the play of chance. Secondly, he pointed out that there was always an excess of male births over female births, but that in the population alive at any time, the number of the two sexes was approximately equal. Thirdly, he showed that the mortality rate was relatively high in the earliest years of life. And, finally, he found that the death rate in cities was then higher than in rural areas. William Petty was a great friend of John Graunt, learned from him, attended his funeral and conducted important research in Dublin after Graunt’s death. In Petty’s Observations Upon the Dublin Bills of Mortality, a recommendation is made to ensuring accurate and complete data, the importance of improving data collection in Dublin, and he indicates that *“an eight or ten pound per annum surcharge would make the Bills of Dublin to exceed all others, and become an excellent Instrument of Government.”*

Petty, following on from Graunt, categorized years as *“healthful”* and *“sickly”* and, on the basis of his analysis of the Dublin Bills, selected 1641 as the

*“Standard of Health”*. He ventured to make a *“standard of the healthfulness of the air”* and the *“wholesomeness of the food”* from the data on disease.

The Bills of Mortality were introduced during the previous century and were weekly compilations of the burials, baptisms and marriages recorded in each parish. Graunt described the mechanism of collection of the data in the following words:

*“When any one dies, then, either by tolling or ringing of a bell, or by bespeaking of a grave of the sexton, the same is known to the searchers, corresponding with the said sexton:*

*“The searchers hereupon (who are ancient matrons sworn to their office) repair to the place where the dead corpse lies, and by view of the same, and by other enquiries, they examine by what disease or casualty the corpse died. Hereupon they make their report to the parish clerk, and he, every Tuesday night carries in an accompt of all the burials and christenings happening that week to the Clerk of Hall. On Wednesday the general accompt is made up and printed, and on Thursday published and dispersed to several families who will pay four shillings per annum for it.”*

John Graunt saw in the Bills a message for posterity and so began a process without which all public health must remain in the dark. William Farr, Compiler of Abstracts to the General Register Officer, remarked some two centuries later *“vague conjecture began to be replaced by numerical expression.”* Graunt was obviously a man of broad vision and sound judgement and saw the potential in his new “statistics” of application in relation to the impact of environmental factors on the public health.

This ability to recognize the value of environmental health data and to gather and use data, as a means to planning and evaluating environmental health services is very much needed today. The International Federation of Environmental Health (IFEH) has moved in addressing this need in a comprehensive way by establishing its World-wide Sustainability Indicator Project. Additionally, IFEH has entered into a Memorandum of Understanding with the International Institute for Sustainable Development (IISD) and is working co-operatively with IISD on the Institute’s Compendium of Sustainable Development Indicator Initiatives that closely links to the global environmental health goals of the Federation.