PostScript

LETTERS TO THE EDITOR

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Decreasing AIDS mortality rates among young adults in the city of Florence, 1987–1999

In a recent paper Borrell and colleagues described mortality trends in young adults in three European cities.¹ The authors pointed out that in Barcelona, Bologna, and Munich, there was from 1986 to 1995, a statistically significant increase of AIDS mortality in both sexes.

To obtain further descriptive data on this topic, data from Florence, the main city in the Tuscany region, central Italy, were analysed. Moreover, a wider time period, 1987–1999, has been included to highlight recent changes.

In the Tuscany region, the Regional Mortality Registry (RMR) has been active since 1987. All the death certificates relative to deceased residents are collected, checked, coded (according to International Classification of Disease 9th revision) and registered in the RMR archive. We retrieved from the RMR archive death data for AIDS (ICD-9 code: 279.1) relative to subjects 15–34 years

resident in the city of Florence. The population of Florence has decreased from 421 302 inhabitants in 1987 to 376 662 in 1999, with an increasing aging population.

During 1987–1999, 878 deaths occurred among the subjects resident in Florence in the 15–34 year old age group, 630 men (71.8%) and 248 (28.2%) women. Among these 142 (16.2%) were attributed to AIDS, 108 men and 34 women. The highest mortality rates were reached in 1991 in women ($13.5/10^3$) and in 1996 in men ($31.0/10^3$).

To reduce chance fluctuations in the yearly number of deaths, data for men and women were analysed together and directly standardised mortality rates were computed on the European standard population. To analyse the time trend we carried out a joinpoint analysis, a model where several different lines are connected together at the "joinpoint".² We tested which one between different joinpoint models including from 0 to 3 joinpoints fitted well the data. Estimated annual percentage changes (EAPC) were also computed on standardised rates in a log-linear model. The analysis was performed with the Joinpoint 2.5 software provided by the National Cancer Institute (www.dccps.nci.nih.gov/SRAB/joinpoint).

The best model was the one that fitted one joinpoint around 1996 with increasing trend since then (EAPC=+11.8; 95% CI +2.3 to +22.2) and decreasing one afterwards (EAPC=-55.4 (95% CI -81.0 to +5.1)). In figure 1, the yearly observed standardised rates and the estimated joinpoint model are shown for 1987–1999. Restricting the analysis up to 1995, as in the study by Borrell *et al.*, a 0 joinpoints model with an increasing slope of +13.3%/year (95% CI +5.0 to +22.4) resulted in the best fit of the data.

In conclusion, in the city of Florence mortality rates for AIDS among young adults were increasing up to the mid-90s as reported in other European urban areas; but since then they shown a downward shift. The time of trend change was estimated around 1996. In Italy antiretroviral combination therapy was adopted in mid-1995, and protease inhibitors in mid-1996. In the Tuscany region a significant reduction of the risk of death among AIDS patients has been reported starting from the second half of 1996³; such a result is consistent with that recently observed in Aus-

tralia for cases diagnosed in 1995 and 1996.⁴ Therefore, it is possible that the documented mortality downward trend evidenced in the city of Florence in the late-90s mirrored the positive effect of the new treatment adopted.

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Authors' reply

Crocetti and Giovannetti report in their letter a recent decrease in AIDS mortality in the city of Florence, further updating our previous report,¹ where we looked at mortality in three European cities from 1985 to 1995. Similarly to what the authors show for Florence in recent years, we present trends in AIDS mortality in Barcelona for the period 1986–1999, showing the evolution of AIDS mortality after the introduction of antiretroviral therapy.

Deaths were obtained through the mortality register of residents of Barcelona. We included all AIDS deaths, being the ICD-9 code of the cause of death 279.5, between 15 and 34 years of age. Population data were obtained from the municipal census for the years 1986, 1991, and 1996; intercensal populations were estimated through a method based on the geometric curve. Age standardised mortality rates for each sex were calculated with the direct method, using the European population as the standard population.

The total number of AIDS deaths aged 15–34 years during the period 1986–1999 was 1374 (1024 men and 350 women), representing a 20.4 % of all deaths in this age group (21.1% in men and 18.7% in women). The yearly number of AIDS deaths increased from 5 in 1986 to 217 in 1995 and then decreased to 23 in 1999. Age standardised deaths rates by sex are shown in figure 1. In men, mortality increased steadily until 1995, with a rate of 75 per 100 000 inhabitants and then decreased progressively to a rate of 7.26 in 1999. In women, the rates were smaller, increasing until 1994, with a rate of 24.74, and then decreasing to 3.12 in 1999. Such dramatic

Figure 1 AIDS deaths. City of Florence, men and women 1987–1999. Standardised (Europe) mortality rates and joinpoint model.

Figure 1 Trends in AIDS mortality by sex, in young adults aged from 15 to 34. Barcelona 1986–1999.

decrease is well illustrated by the fact that in a period of two years (1996–1997) mortality rates returned to the levels observed nine years earlier.

The rates observed in Barcelona are higher than the rates observed in Florence, as well as they were for the cities of Bologna and Munich until 1995, as we described in our previous paper,¹ probably because of the higher prevalence of intravenous drug users with a frequent sharing of needles in Barcelona.

Our results are consistent with the beneficial impact on mortality of antiretroviral therapy, introduced since the beginning of 1996, as well as with the ones described for Florence by Crocetti and Giovannetti and elsewhere,^{2,3} as regards trends in AIDS incidence and mortality.

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BOOK REVIEW

Human frontiers, environments and disease. Past patterns, uncertain futures

T McMichael. Cambridge University Press, 2001. (Pp 413; price not stated). ISBN 0-521-80311-X hardback; ISBN 0-521-00494-2 paperback.

Human frontiers, environments and diseases goes beyond the alarm raised by *Silent spring* by R Carson and continued by *The stolen future* by T Colborn. Toni McMichael gives a broad picture of health ecology. A picture that tells how during the 20th century, average life expectancy has doubled, the population has increased by four, the global food yield and water consumption by six, the production of carbon oxides by 12, and the level of economical activity 20 times, how the natural capital is being consumed, and what will be the future costs for human health.

The book is about determinants of health, from the perspective of the ecological framework. Health as a product of ecological circumstance, a mismatch between human biological inheritance and current way of life. Of special interest is the erudite journey

through the human adaptation of unfamiliar environments from history and prehistory resulting in the current range of genetic makeup. The book is thus primarily aimed at health professionals, but also at politicians, economists, and the public in general.

Central in the current thinking of McMichael is the extension of the environmental health concerns to those attributable to changes of the planet's great biophysical and ecological systems. The impact of these hazards is displaced in time and space, and thus will affect the health of future generations. Science then is going beyond the empirical observations about the present and the past world and is giving as much weight to the future as to the present.

How to curb the process of overstepping the world limits and borrowing future health? McMichael provides some answers: seeking a different economy, with the concept of fairness, ecology and equity; implementing sustainability in human activity in order to achieve cooperative and equitable stewardship of the ecosphere; and constraining human numbers (4 billion) and levels of waste generating consumption. I recommend that epidemiologists should read it despite being rather long.

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