Exceptional Gambian data confirm health transition

Over the past century, most countries in the world have experienced a fall in mortality and an increase in life expectancy. This trend has been accompanied by or is directly related to another trend, the so-called health transition, in which causes of death related to infection, pregnancy, childbirth and nutrition (so-called group I causes) become proportionately less prevalent, and noncommunicable diseases (group II) and violent or accidental deaths (group III) more prevalent. Both trends are believed to be occurring throughout the world, including sub-Saharan Africa. The problem with Africa, however, is the dearth of information about causes of mortality.

The Global Burden of Disease study, published in 1994, estimated that in sub-Saharan Africa in 1990, 65% of deaths were due to group I causes, 23% to group II and 13% to group III (vs 6%, 87% and 6% for established market economies). However, the estimates for Africa were based on not altogether reliable registration data relating to only one country, South Africa. Van der Sande et al. (pp. 133–141) took advantage of the rare opportunity offered by reliably reliable death records dating from 1942 for Banjul, the capital of the Gambia in West Africa, to analyse trends in causes of death “in an ordinary city in sub-Saharan Africa”. The Banjul data show trends in line with the rest of the world, with group I causes falling over the period from 72% to 47% of all causes, group II rising from 23% to 45% and group III rising from 4.9% to 8.3%. One message the authors derive from these results is that, although the Gambia shares the global health transition, infectious diseases are still important causes of death and have not been replaced by noncommunicable diseases.

One worrying finding, in particular, is an increase in malaria deaths over the last decade, up from 5.8% of deaths to 8.1%.

In the Public Health Classics section of this issue, Caldwell (pp. 159–160) comments on Abdel Omran’s 1971 paper on epidemiological transition and notes how important an understanding of the health transition is for planning health services.

Lethal medicine

Over the past two decades, several hundred people, mostly children, in many countries are known to have died from renal failure after ingesting medicines containing diethylene glycol, a common constituent of motor vehicle anti-freeze. In 1990 a large outbreak occurred in Bangladesh involving more than 300 children of whom 236 died. Another, that started in Haiti in 1995, claimed 35 young lives. In nearly all the cases, the victims had developed renal failure after taking paracetamol (also known as acetaminophen) — an analgesic and antipyretic widely used in developing countries — contaminated with diethylene glycol. In the Bangladesh outbreak, manufacturers were suspected of having replaced propylene glycol, used in making the drug’s excipient, with the cheaper, but highly toxic, diethylene glycol. Singh et al. (pp. 88–95) report an outbreak that occurred three years ago in northern India. Between April and June 1998, 36 children under 6 years of age were admitted to two Delhi hospitals with clinical and laboratory signs of otherwise unexplained acute renal failure. Despite peritoneal dialysis and supportive treatment, 33 of the children died. A thorough virological, bacteriological and serological study followed by painstaking epidemiological investigation in and around the patients’ area of residence was inconclusive. Only after health officials read an article in JAMA describing the Haitian outbreak did the possibility of contaminated medicine occur to them. Subsequent investigations including analysis of medicines the children had taken revealed the culprit as a locally manufactured “cough syrup” contaminated with diethylene glycol. How the contaminant got into the medicine is not known. Like most, if not all, industrialized countries, India has legislation governing the manufacture and marketing of medicines. Enforcing it, as the authors note, is another question. An additional problem illustrated by this outbreak can be a lack of suitable laboratory technology to analyse suspect medicines.

Urethral discharge in Africa — a multifaceted problem

Urethral discharge is found in the majority of African men with a sexually transmitted disease (STD). In up to 40% of cases, the causative organism is not known. Two organisms, Neisseria gonorrhoeae and Chlamydia trachomatis, are known to be offenders in 53–80% and 3–16% of cases. Given the important role of genital infections in the transmission of HIV — gonococcal urethritis is associated with a sevenfold increase in the shedding, or release, of HIV in sperm — and given the fact that proper management of STDs is the only intervention that has been shown to slow the spread of HIV in sub-Saharan Africa, Pépin et al. (pp. 118–126) conducted a study in seven West African countries to determine the frequency of the five most likely causes of urethral discharge in men: N. gonorrhoeae, C. trachomatis, Trichomonas vaginalis, Mycoplasma genitalium and Ureaplasma urealyticum. They used molecular diagnosis based on polymerase chain reaction (PCR) technology to determine the presence of these organisms in urethral swab samples from 659 men with urethral discharge attending 72 primary health care centres in Benin, Burkina Faso, Côte d’Ivoire, Ghana, Guinea, Mali and Senegal, and also from 339 control subjects with no urethral signs or symptoms. U. urealyticum was not associated with urethral discharge, the study found, whereas N. gonorrhoeae, T. vaginalis, C. trachomatis and M. genitalium, alone or in association, were found in 79% of cases (respectively, in 62%, 14%, 13% and 10%). This is the first study, the authors believe, to show that M. genitalium plays a role in the causation of urethritis in Africa, a finding that should ultimately shrink the proportion of cases, currently about 40%, of unknown aetiology. T. vaginalis also appears to be associated with urethritis in this region, but whether as a direct cause or as an innocent bystander is not clear. Most importantly, the study showed that multiple infections with two or more co-infecting organisms are common — in a quarter of the patients studied. Overall, the study’s findings strengthen the case, still not universally accepted, for a “syndromic” approach to the management of urethral discharge. This approach, instead of attempting to establish precise microbiological diagnosis with a view to targeting treatment to only a limited number of pathogens, covers as fully as possible the likely range of infecting organisms.