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Increased mortality among Dutch development workers

Erik J Schouten, Martien W Borgdorff

HealthNet International,
1017 MB Amsterdam, The
Netherlands
Erik J Schouten, medical
officer
Royal Tropical Institute,
1092 AD Amsterdam, The
Netherlands
Martien W Borgdorff,
epidemiologist

Correspondence to:
Dr Schouten.

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Early this century Africa was known as the "white man's grave." Little is known about health risks of expatriates in developing countries today. We compared the mortality of development workers who were sent out by Dutch development organisations with that of the general population in the Netherlands, adjusted for age and sex.

Subjects, methods, and results

Records of three large Dutch development organisations were reviewed. From 1984 to 1994 over 6500 development workers and spouses spent a total of 15 144 years abroad. About 75% of them lived in sub-Saharan Africa. Causes of death were classified according to the International Classification of Diseases: mortality caused by traffic accidents (ICD 800-848), other injuries (ICD 880-959 and 980-989), homicide (ICD 960-969), and all other causes (ICD 001-799, 849-879, and 930-959).¹ Age and sex specific mortality rates in the Dutch population were used to calculate the "expected" number of deaths in the study population. The observed number of deaths was divided by the expected number to obtain the standardised mortality ratio (SMR).

The table shows that mortality of development workers was 1.9 times that of the Dutch population, corresponding to an increase from an expected mortality of 1.1 to an observed mortality of 2.1 per 1000. The standardised mortality ratio in women was significantly higher than that in men (ratio of standardised mortality ratios 2.4; 95% confidence interval 1.1 to 5.1). A high standardised mortality ratio was found for traffic accidents, particularly in women. The observed increased risk for other injuries and homicide was not significant. Mortality in development workers from other causes was similar to that in the Dutch population. Mortality from AIDS, however, accounted for 3 (9%) out of 32 deaths.

Those with higher levels of education have a lower mortality.² Mortality is reduced by 10% for men and

5% for women for each year of educational attainment in the age group 20-44 years (Anton Kunst, personal communication 1995). On average development workers and their spouses had 3.5 more years of education than the Dutch population. This difference would reduce the expected mortality by 31% for men and 16% for women. After correction for education the standardised mortality ratio would be 2.6 (95% confidence interval 1.8 to 3.7) for the total population of development workers and spouses, 2.0 for men (95% confidence interval 1.2 to 3.2), and 4.0 for women (2.2 to 6.6).

Comment

Dutch development workers had a mortality almost double that of the general Dutch population. The true increase in mortality was probably higher because of a healthy cohort effect (medical selection) and mortality after the end of a contract attributable to infections acquired abroad, but leading to death later, such as hepatitis, malaria, or HIV infection.

In a study among Dutch expatriates returning from sub-Saharan Africa 4 out of 1122 men and 1 out of 846 women were found to have HIV infection, which had probably been acquired abroad, giving an estimated incidence rate of 0.7/1000 person-years.³ As the observed mortality was 2.1 per 1000 during the

Standardised mortality rates (SMR) in Dutch development workers from 1984 to 1994 by cause of death

Cause of death	Expected No deaths	Observed No deaths	SMR (95% confidence interval)
<i>Men</i>			
Traffic accidents	0.89	4	4.5 (1.2 to 11.5)
Other injuries	2.04	4	2.0 (0.5 to 5.0)
Homicide	0.18	1	5.6 (0.1 to 31.0)
Other causes	9.22	8	0.9 (0.4 to 1.7)
All causes	12.33	17	1.4 (0.8 to 2.2)
<i>Women</i>			
Traffic accidents	0.20	7	35.0 (14.1 to 72.1)
Other injuries	0.60	1	1.7 (0.0 to 9.3)
Homicide	0.08	1	12.5 (0.3 to 69.7)
Other causes	3.63	6	1.7 (0.6 to 3.6)
All causes	4.51	15	3.3 (1.9 to 5.5)
<i>Total</i>			
Traffic accidents	1.09	11	10.1 (5.0 to 18.1)
Other injuries	2.64	5	1.9 (0.6 to 4.4)
Homicide	0.26	2	7.7 (0.9 to 28.8)
Other causes	12.85	14	1.1 (0.6 to 1.8)
All causes	16.84	32	1.9 (1.3 to 2.7)

contract period, HIV infection might increase mortality attributable to working in developing countries by one third.

Traffic accidents were also an important cause of death for Peace Corps Volunteers⁴ and American missionaries.⁵ Among missionaries, however, the overall standardised mortality ratio was 0.5 because of a strongly reduced mortality from other causes of death. In particular, mortality attributable to cardiovascular diseases was much reduced, which was explained by a healthy cohort effect, better diet, and more physical exercise. In the relatively young Dutch expatriates cardiovascular diseases were not an important cause of death and the mean duration of contract is too short to expect major benefits from a change of lifestyle.

Efforts to reduce excess mortality among expatriates should be undertaken. In particular, development organisations and workers should explore measures to reduce the risk of traffic accidents and of HIV infection. Additional studies are needed on the health

risks to expatriate workers and their families. Major areas not covered by the present study are mortality after return, mortality in children, and morbidity.

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Routine surgical follow up: do surgeons agree?

Alison Waghorn, Jeremy Thompson, Martin McKee

The move to primary care led purchasing in the NHS¹ is focusing attention on the role of outpatient review, especially for postoperative patients. General practitioners have questioned whether such routine reviews could be reduced, describing them as of limited clinical value and a waste of patients' time.² Some surgeons agree, noting that most patients' postoperative problems are identified by general practitioners before their appointment.³ The limited evidence available suggests that there are indeed opportunities for change. A randomised controlled trial comparing postoperative follow up in outpatient clinics and general practice found no difference in readmission rates or mortality, and patients were equally satisfied with either method.⁴ The general practice option was, however, cheaper for both the patient and the health service and resulted in a minimal increase in general practitioner workload.

Despite this apparent consensus in published reports, a major shift to primary care does not seem to have occurred and the advocates of change may be unrepresentative of their colleagues. We therefore

surveyed a sample of British consultant surgeons on their views about routine postoperative follow up for common surgical conditions.

Subjects, methods, and results

A questionnaire was sent to 100 consultant surgeons selected at random from a database containing details of all consultant general surgeons employed in the NHS (CAM Data Services). Twelve of the most common routine surgical operations were selected and respondents were invited to indicate the percentage of patients that they would normally offer an outpatient follow up appointment to. For those patients who were seen postoperatively we also asked the length of the follow up period and the number of times the patients would be seen within this period. Following a reminder, the response rate was 75%. Of the 75 respondents, 18 were from teaching and 57 from district general hospitals. Responders did not differ from non-responders in either type of hospital ($\chi^2 = 0.75$, 1 df, $P = 0.38$) or years since qualification (Mann-Whitney U test, $z = 1.4547$, $P = 0.146$). When follow up was described as indefinite a figure of 20 years was assumed for statistical analysis.

The results are shown in the table. These show widespread variation in the extent to which surgeons normally offer follow up appointments for many common conditions. For most procedures the distribution of responses was bimodal, with some surgeons offering appointments to all patients and others to none. For some of the commonest procedures, such as inguinal hernia repair, the numbers of surgeons advocating follow up or discharge were evenly split. Once the decision to offer an appointment had been made there was less variation in the proposed length of follow up and number of visits. There was no significant difference in the percentage of patients followed up for any procedure between teaching and district general hospital consultants. In comments on the questionnaires some surgeons said they thought issues such as the threat of litigation and patient satisfaction influenced their decisions.

Comment

Floreys *et al* suggested that some postoperative follow up presently conducted in hospitals could be transferred to primary care and that such a move was supported by some surgeons.⁴ Indeed, others have questioned the value of routine follow up even in some

Health Services Research Unit, London School of Hygiene and Tropical Medicine, London WC1E 7HT

Alison Waghorn, surgical research registrar
Martin McKee, reader in public health medicine

Royal Postgraduate Medical School, Hammersmith Hospital, London W12 0NN
Jeremy Thompson, senior lecturer in surgery

Correspondence to: Ms Waghorn.

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Numbers and percentages of surgeons who routinely follow up nearly all or virtually none of their patients after 12 routine operations

	% Of surgeons who advocated routine follow up rates of		Median total follow up time in months* (interquartile range)	Median No of times seen* (interquartile range)
	>95% of patients	<5% of patients		
Skin lesions removed under local anaesthetic	15 (11/71)	51 (35/71)	1.5(1-2)	0(0-1)
Appendicectomy	30 (22/74)	45(33/74)	1.5(1-2)	1(1-1)
Inguinal hernia repair	43 (32/74)	43 (32/74)	2(1-2)	1(0-1)
Varicose vein procedure	47 (32/68)	29 (20/68)	1.5(1-2)	1(0-1)
Lateral anal sphincterotomy	71 (42/59)	22 (13/59)	1.5(1-2)	1(0-1)
Breast lumpectomy (benign)	72 (43/60)	10 (6/60)	1(1-1.5)	1(0-1)
Cholecystectomy	76 (54/71)	15 (11/71)	1.5(1-2)	1(1-1)
Haemorrhoidectomy	86 (56/65)	8 (5/65)	1.5(1-2)	1(1-1)
Perforated peptic ulcer	87 (62/71)	6 (4/71)	2(1.5-3)	1(1-2)
Partial or total thyroidectomy	100 (56/56)	0	3(1.8-12)	1(0-2)
Wide excision or mastectomy for breast cancer	98 (59/60)	0	120(60-240)	12.5(7.5-40)
Colectomy for carcinoma	100 (68/68)	0	60(60-240)	10(4.7-20)

*For those patients followed as outpatients.