

Guest editorials

Epidemiology, and what then?

*'I keep six honest serving-men
They taught me all I knew;
Their names are What and Why and When,
And How, Where and Who'*

R Kipling, *Just-So stories*

Was Kipling an epidemiologist? Certainly not, in the actual meaning of the word. He was merely a fine observer of nature and of animal and human life. However, in my opinion, this quotation represents a good introduction to modern epidemiology. Applying it in a systematic way to accidental injuries would certainly help reduce the huge toll they create in terms of death, disability, discomfort, as well as in economic and social terms.¹

Indeed, the epidemiological approach to injuries based on Kipling's advice is enlightening: let us start a comparative table by listing its main characteristics (see the table, part 1).

Taking these points into consideration, where the pros largely counterbalance the cons, it is amazing to note the limited interest of the medical profession and other health personnel in the epidemiology of accidental injuries, especially in French speaking countries. 'Why are only a handful of epidemiologists dedicating their efforts to the many fascinating research questions waiting to be explored?' asked Sue Baker in 1983.² Has the situation really changed since?

If epidemiology is crucial to improve our preventive activities and programmes, it does not suffice. Even if the clinical approach has its own limitations, it should not be overlooked. Hence, this comparison of both disciplines in child and adolescent injury prevention is appropriate (see table, part 2).

The comparison could suggest the approaches are in opposition whereas they are, or should be, complementary, following the interdisciplinary principles advocated by Pless.³ Yet the combination of data obtained from these two sources is still not enough. The environmental (engineering) approach familiar to ergonomists also has much to offer; often the most effective preventive measures fall into this category (see table, part 3).

Is that all? Of course not. Human sciences also contribute to our efforts, theoretically as well as in practice.

They provide a more comprehensive conceptualization leading to better preventive strategies. Perhaps the best example of this is how we now link the various developmental steps with the risk of specific categories of injuries. Another interesting trend is the current emphasis on safety, not only from a physical but also from a psychosocial stand point. We could also refer to the psychosocial components of the risk approach, with the still unclear and unsolved problem of 'accident proneness'. Therefore, a behavioral approach is also crucial (see table, part 4).

We could continue by adding a fifth column that includes the legal aspects of injury prevention, which are many and important indeed. In our mind, this kind of multifaceted approach, as incomplete and open to criticism it can be, has the great advantage of making clear the specific benefits as well as limits of all disciplines involved in accident and injury prevention. It reinforces the need for a truly interdisciplinary approach. Clearly, any successful prevention strategy must be intersectoral and integrated; not just the juxtaposition of various inputs, but rather their cross fertilization.³

This leads us to recall the four Es frequently used for pedagogic, mnemonic purpose and invariably useful when preparing consolidated programmes. They stand for *Education, Environment, Engineering, Enforcement*.

All professionals involved in activities pertaining to these various fields must cooperate in joint programmes if they are to be effective in achieving their common aim which is, not by chance, the very title of this journal: *Injury Prevention*.

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- 1 Manciaux MRG. Accidents in childhood: from epidemiology to prevention. *Acta Paediatr Scand* 1985; 74: 163–71.
- 2 Baker SR. Medical data and injuries. *Am J Public Health* 1983; 73: 733–4.
- 3 Pless IB. 'Interdisciplinary' and 'multidisciplinary' are not synonymous. *Injury Prevention* 1995; 1: 65–6.

Epidemiological, clinical, ergonomic, and behavioural approaches to injury prevention

	(1) Epidemiological	(2) Clinical	(3) Ergonomic	(4) Behavioral
<i>Object</i>	Group(s) of population At risk (factors, groups)	Individual patients(s) Injury	Interface, interactions between the various factor	Behavior of the victim and/or of the authors or witnesses
<i>Questions</i>	How many? When? Where? To whom? What? Why?	To Whom? What?	To whom? Why? What? How?	To whom? What? How? Why?
<i>Advantages</i>	Possibility of collecting data on exposure, and on the above mentioned questions — encompass minor accidents	Availability of hospital files	Possible transfer of knowledge and skills gained in occupational health	Better understanding of the 'human factor'. Possibility of using data for health and safety education
<i>Disadvantages</i>	Complexity of the 'causation/net' difficulty of direct observation	Poor quality of hospital files	Ergonomics not aware of human development	The same as for epidemiology
<i>Prevention level</i>	I. Active and passive II. At risk approach	II. Passive > active III.	Mainly I, passive > active	I. Active > passive II.