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LETTER TO THE EDITOR

Needlestick-prevention devices: we should already be there

Madam,

In response to the comments of Adams and Elliott, several European countries either have adopted or are planning to adopt prescriptive legislation on needlestick-prevention devices (NPDs), including Austria, Germany, Spain, France, and Italy.[1–6] Despite the non-binding nature of some of these rules, the adoption of NPDs in Europe is increasing. We would like to point out, however, that these are operative regulations that further specify what is already stated in the framework directive 89/391/EEC. This directive, which aims to improve the protection of workers from accidents at work and from occupational diseases by providing preventive measures, information, consultation, balanced participation and training of workers and their representatives, and the 'daughter directive' 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work, state that: 'Employers must keep abreast of new developments in technology with a view to improving the protection of workers' health and safety', and in Article 6 on the Reduction of risks '... the risk of exposure must be reduced to as low a level as necessary in order to protect adequately the health and safety of the workers. In particular the following measures are to be applied: ... (b) design of work processes and engineering control measures so as to avoid or minimise the release of biological agents into the place of work.' Therefore, European legislation already requires new technologies to be introduced to enhance workers' safety, and in the healthcare setting, NPDs represent an engineering control measure whose clinical efficacy has been widely demonstrated.

In the USA, adoption rates of NPDs climbed sharply after the Needlestick Safety and Prevention Act of 2000, with safety-engineered devices becoming the predominant technology within the next three years. Encouragingly, adoption rates were particularly high for the devices holding the highest risk of bloodborne pathogen transmission: blood collection needles and intravenous catheters. Although compliance levels have been generally high, there are areas of weakness: for instance, the highest compliance levels are found in hospitals but the adoption rates in non-hospital settings appear to be 10–15% lower, and within the hospital environment, the surgical setting is least likely to adopt safety-engineered devices such as blunt suture needles and shielded scalpel blades. Nonetheless, the US experience demonstrated that voluntary adoption of safety technology prior to 2000 failed to reach a high enough level to produce a global reduction in sharps injury rates. A significant drop in sharps injury rates only occurred when high levels of adoption were achieved after an enforceable law was enacted. Although it cannot be identified how this translated into reduced infections among healthcare workers, the widely held assumption is that the reduction in transmission is proportional to the reduction in injuries, and that since the highest adoption rates were achieved for the highest risk devices (blood-drawing and vascular access devices) the greatest benefits have been gained where risk is highest.

In Italy, the Studio Italiano Rischio Occupazionale da HIV (SIROH) group is actively promoting widespread adoption of NPDs; our studies on occupational risk of bloodborne infections were cited in the proposal 2006/2015(INI) for an amendment to the European Directive 2000/54/EC.

Sixteen hospitals participating in our study provided data supporting NPD introduction. An evaluation of 3 300 000 NPDs used [intravenous (IV) catheters, blood-collection winged-steel needles, arterial blood gas syringes] from 2003 onwards demonstrated that NPD-specific injury rates per 100 000 devices used showed a significant decrease from the baseline corresponding conventional device (CD) rates; were significantly lower (−80% on average) than the corresponding CD rates (Figure 1); and these lower rates were maintained over time following introduction.

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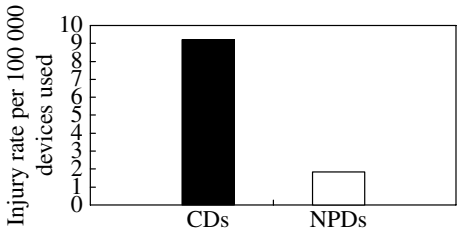

Figure 1 Average device-specific injury rate per 100 000 devices used: needlestick prevention devices (NPDs; $N = 3\,300\,000$) vs conventional devices (CDs; $N = 3\,600\,000$) (intravenous catheters, blood-collection winged-steel needles, arterial blood gas syringes). Studio Italiano Rischio Occupazionale da HIV (SIROH), 16 hospitals, 2003–2006.

In the same time period, 12 cases of occupational infection with hepatitis C virus, ten involving devices whose safety counterpart is already available (four IV catheters, three winged-steel needles, three arterial blood gas syringes), were observed in SIROH hospitals where NPDs had not been introduced. Although viral clearance was eventually observed in all cases (three spontaneously, four following therapy during the acute phase and three during the chronic phase), three nurses developed reactive depression and were moved to administrative tasks. In addition, one case of occupational HIV (human immunodeficiency virus) infection following an injury with an IV catheter occurred, again in a hospital where NPDs had not been implemented. Consequently, our missed opportunities for NPD adoption are translating directly into increased infections.

In conclusion, apart from leadership in Europe, we cannot wait for the Commission to amend the Directive: we should already be there.

Conflict of interest statement
None declared.

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