Successful Search-and-Destroy Policy for Methicillin-Resistant *Staphylococcus aureus* in The Netherlands

With interest we read the article of Wannet et al. (1). Indeed, to Dutch standards, an enormous outbreak of methicillin-resistant *Staphylococcus aureus* (MRSA) occurred, predominantly in the Rijnmond region of The Netherlands. During the epidemic period of nearly 3 years the proportion of type 16 MRSA strains among all MRSA strains rose from 3% to 33%. However, since that outbreak is under control, the proportion of this MRSA type has decreased rapidly to 11% in 2003 and less than 5% in the first 9 months of 2004.

As the cause of the epidemic is well known, we consider it important to explain the emergence and disappearance of this strain in The Netherlands. The spreading of MRSA type 16 is a good example of what can happen when the current Dutch search-and-destroy policy is not consequently applied. In April 1999, this strain was first detected in the Erasmus University Medical Center, Rotterdam (EMCR). The strain was introduced in The Netherlands by a patient transferred from a hospital in Turkey to a hospital (hospital A) in our region. Wannet et al. apparently were not informed about the origin of this clone and suggested it could have arisen from methicillin-susceptible *S. aureus* in the community, which is not the case. Due to its low-level oxacillin MIC, the initial spread of this strain was not recognized by hospital A as MRSA and thereby escaped the search component of the search-and-destroy policy. In 2001, at the EMRC, MRSA type 16 was isolated from patients not belonging to known risk groups. These isolates could be traced back to patients formerly admitted to hospital A. MRSA screening in hospital A soon made clear that a large outbreak of MRSA type 16 was occurring and that former patients of hospital A were the source of MRSA transmission in other hospitals.

Intensive screening of all contacts (patients and healthcare workers) and isolation and treatment of all carriers eventually led to a decrease of the national numbers of type 16 (Fig. 1). At the same time in 2001 a national guideline for detection of low-level oxacillin-resistant *S. aureus* strains was implemented in all Dutch laboratories in order to increase the sensitivity of the detection method. Implementation of these procedures led to an increased detection of MRSA since early 2002.

The control of this large multicenter outbreak is a good example of the effectiveness of the Dutch search-and-destroy

policy. It demonstrated that even a few years after introduction of an epidemic MRSA strain and the ensuing spread to hundreds of persons, the consistent application of the Dutch MRSA policy enabled hospital A to control this outbreak.

In their article, Wannet et al. show the occurrence of MRSA type 16 in The Netherlands until 2002, the year in which the index hospital and other hospitals were still actively searching for the outbreak strain. The incidence of type 16 MRSA decreased sharply in the years thereafter. Therefore, the article does not reflect the current situation and may give the false impression that MRSA type 16 is now endemic in The Netherlands.

In conclusion, the large outbreak of MRSA type 16 could have marked the beginning of endemic MRSA in The Netherlands. However, by vigorous implementation of the search-and-destroy strategy it was controlled. This underscores the effectiveness of the Dutch approach to control MRSA.

REFERENCE

1. Wannet, W. J. B., E. Spalburg, M. E. O. C. Heck, G. N. Pluister, R. J. L. Willems, and A. J. de Neeling. 2004. Widespread dissemination in The Netherlands of the epidemic Berlin methicillin-resistant *Staphylococcus aureus* clone with low-level resistance to oxacillin. *J. Clin. Microbiol.* 42:3077–3082.

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Authors' Reply

We thank the authors for their added information. Vos et al. ascribe the recent emergence of methicillin-resistant *Staphylococcus aureus* (MRSA) ST45 isolates from The Netherlands to a single patient transferred from a Turkish hospital into a hospital in the Rotterdam region. Because they do not present further details, it is difficult to judge whether this is the only plausible explanation. It does not exclude our tentative explanation: the introduction of a novel *mecA* element into a pre-existing methicillin-susceptible *S. aureus* strain.

We intended not to describe the epidemiology of the rise and fall of ST45 in Rotterdam or elsewhere in The Netherlands but to present microbiological characteristics of this strain, which was previously known only by its characteristic pulsed-field gel electrophoresis pattern and its antibiogram.

We agree with Vos et al. that the increased isolation of this strain may have been induced by new national guidelines for the detection of MRSA in The Netherlands which include the use of an enrichment broth. In addition the high numbers of MRSA strains detected in Rotterdam and elsewhere in The Netherlands were found by screening very large numbers of patients. Without taking such denominator data into account, it is difficult to assess to which degree the real incidence of MRSA, in general, increased during 2002 and/or whether it declined thereafter.

FIG. 1. Number of patients and healthcare workers (HCWs) with pulsed-field gel electrophoresis type 16 in The Netherlands.

FIG. 1. Total number of MRSA strains sent to the RIVM per year.

The number of MRSA isolates forwarded to the National Institute of Public Health and the Environment (RIVM) from the Rotterdam region in 2003 was approximately equal to the number in 2002, but the number of strains from the whole of the country increased 27% to 1,601 isolates (one per patient) in 2003. We present the number of MRSA strains sent to the RIVM on a website (<http://www.rivm.nl/mrsa>), which is updated daily. The data shown in Fig. 1 of Vos et al. were

obtained from this website. Today (8 December 2004) the number of MRSA strains (one per patient from any sampling site, not only blood) since 8 December 2003 was 1,172, or 7.2 per 100,000 inhabitants. This number includes isolates from surveillance cultures and pulsed-field gel electrophoresis types other than type 16. So the number of MRSA strains did not continue to rise in 2004 but may have stabilized on a level approximately two- to threefold higher than in the years before 2002 (Fig. 1).

We strongly emphasize the importance of the Dutch search-and-destroy policy in the battle against MRSA. For this, all parties need to work together to provide a sufficient minimum data set needed to underpin policymaking in MRSA control, while avoiding unnecessary duplication of activities. We will continue this debate in the forum that has been initiated by the Ministry of Health in The Netherlands for this exact purpose.

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