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Numbers that reveal and numbers that conceal

EDITORIAL

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What is the risk of healthcare personnel being infected with the SARS-CoV-2 virus while at work? New figures from the Norwegian Institute of Public Health provide only part of the answer.

Twenty-one million soldiers from the United States and the British Commonwealth of Nations served during World War II. Of these, 1.8 million (8.5 %) were killed or injured in action (1). The numbers are staggering, but they cannot convey the risk that soldiers faced during the most dramatic battles: When US Forces stormed Omaha Beach during the Normandy Invasion, the soldiers in the first assault wave had close to a 50 % chance of being killed.

Although the pandemic has caused tremendous loss of life, the world is *not* at war and our civilization is *not* under threat. Therefore, civil society has no right to expect frontline healthcare workers to accept unnecessary risk. On the other hand, employees in any occupation with a risk of infection have every right to expect their employer and/or the health authorities to tell them how great this risk is (2).

The pandemic has shown us that numbers have political significance. Conflicts of interest naturally arise in relation to which infection control measures should be implemented and who should get access to advanced personal protective equipment and vaccines. Priorities must be justified and be

perceived as relevant and appropriate for the parties affected. When researchers at the Norwegian Institute of Public Health present the incidence of infection among various occupational groups in the healthcare sector in this journal, it is important to be aware of what the results can, and cannot, be used for (3). Without this knowledge, the numbers may *conceal* rather than *reveal* the true risk facing healthcare workers.

> ***«Civil society has no right to expect frontline healthcare workers to accept unnecessary risk»***

The denominator is just as important as the numerator in descriptions of disease incidence in a population group and the risk for individuals. Molvik and Danielsen et al. have taken a bird's-eye view, resulting in a large denominator. They describe the incidence of infection in 382 332 health service employees, divided into 16 different occupational groups, but without data on the actual exposure to infection in the workplace. Staff in nursing homes that have had coronavirus outbreaks or hospital employees on COVID-19 wards may find it difficult to see the relevance of being lumped together with workers whose exposure to infection has been no higher than that of the general population.

It is unclear which work tasks result in the greatest risk of infection (4). Molvik and Danielsen et al. note that a lack of personal protective equipment in the early phase of the pandemic likely resulted in an increased incidence of infection among healthcare personnel caring for COVID-19 patients, as reported in the media (5).

In the authors' data, the incidence of infection is highest among ambulance personnel and cleaners, despite the lower testing activity in these groups. Although these occupational groups have well-defined work duties, the authors identify several factors that may have caused variations in the incidence of infection. Those factors, however, are not registered in the source material used in the study. As a result, we do not know whether the numbers are based on increased exposure to infection in the workplace, a lack of personal protective equipment, or unrelated factors.

> ***«It is unclear which work tasks result in the greatest risk of infection»***

We know from countries with a greater COVID-19 burden than Norway that frontline healthcare personnel have a higher risk of becoming infected (6, 7). This is confirmed with some certainty by Norwegian data (8). There are numerous examples of healthcare workers around the world who have died from COVID-19 (9). Thus, although the risk of death from confirmed infection is probably no greater for healthcare personnel than for others, it is important to document the infection risk.

Before the Normandy landings, the Supreme Commander of the Allied Forces in Europe, General Dwight D. Eisenhower, wrote a letter accepting full blame for a failed invasion – just in case (10). He knew the stakes were high and that defeat could not be explained away. The memorial cemeteries in northern

France bear witness to the enormous cost of victory. In Norway, a story in a tabloid newspaper is the closest we come to a publicly accessible overview of the challenges that healthcare personnel have faced during the pandemic (5). The fact that there is no public register for healthcare personnel infected while at work is alarming to say the least.

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