Tidsskriftet Tidsskrift for Den norske legeforening

Can differences in health services explain inequalities in life expectancy between Norwegian towns and cities?

COMMENTARY

JON IVAR ELSTAD

Jon Ivar Elstad (born 1948) is a sociologist, dr. philos. and researcher at NOVA – Norwegian Social Research. He is a member of the Norwegian Directorate of Health's Advisory Board on Social Inequalities in Health.
Conflicts of interest: None declared.
Email: jon.i.elstad@nova.no
NOVA – Norwegian Social Research

Around 2005, life expectancy was 2.5 years higher in Molde than in Arendal. It is remarkable that Norwegian cities that are fairly similar in terms of size, income level and population composition have differing levels of mortality. Could differences in the quality of their health services possibly play a role? Furthermore, is the classification of causes of death sufficiently precise?

In a recently published report I have attempted to explain the root causes of the differences in mortality between Norwegian towns and cities (1). One hypothesis could be that the differences in life expectancy are caused by differences in the quality of the local health services. However, a detailed and reliable investigation of the cities' health services is a very demanding task. An indirect approach to the issue of the health services' role is to study the patterns of causes of death. Prior Norwegian (2, 3) as well as international research (4) – (6) has attempted to elucidate the role of the health services, based on the assumption that causes of death will vary in how much they can be influenced by medical interventions, preventive efforts and health-policy measures.

One contribution from this body of research (4) points to three types of avoidable causes of death, meaning deaths that ideally should not occur until the age of 75 or over, provided that the health services and the preventive

apparatus function in an optimal manner. These groups of causes of death can be classified into treatment-sensitive (such as infectious diseases, forms of cancer that respond to treatment, diabetes), policy-sensitive (lung cancer, liver cirrhosis and traffic accidents) or ischemic heart disease, for which preventive efforts and the quality of the treatment provided are both essential. I have used this classification as a basis for my analysis of the differences in mortality between the cities. For example, an exceptional number of deaths from treatment-sensitive diseases would indicate that focus should by placed on the quality of the diagnostic and therapeutic activities. On the other hand, if the differences between the cities are mainly caused by typically lifestyle-related deaths (the policy-sensitive causes), special attention ought to be devoted to behaviour and prevention.

Mortality in Norwegian cities

Among the 21 cities investigated, the mortality rate standardised for age and gender was lowest in Ålesund, but even Molde, Lillehammer, Bergen and Bodø had relatively low mortality (1). The five cities with the highest mortality rates were Skien/Porsgrunn, Gjøvik, Tromsø, Arendal and Oslo. Among the 21 cities, the capital city was clearly in the worst position (1).

In the five «worst» cities, average mortality related to treatment-sensitive causes of death was 18 per cent higher than the average for the five «best» cities. Thus, the high-mortality cities had an elevated level of mortality caused by deaths that we may assume were avoidable with the aid of precise diagnostics and optimal treatment. Mortality from typically lifestyle-related diseases also tended to be higher in the five «worst» cities. On the whole, mortality related to causes of death that were classified as avoidable was on average approximately 25 per cent higher in the five cities with the highest mortality rates compared to those with the lowest mortality rates.

These findings may therefore indicate that aspects of the cities' health services and preventive measures have a significant impact on inequalities in life expectancy. However, this conclusion seems highly doubtful when we proceed to investigate deaths on which factors related to the health services can be assumed to have only a minor impact, i.e. the so-called unavoidable causes of death (approximately 55 per cent of all deaths). Average mortality related to unavoidable causes was 26 per cent higher in the five «worst» cities than in the five «best» ones. Accordingly, the most obvious result is that the excess mortality in the high-mortality cities was identical for both avoidable and unavoidable causes of death. With regard to both main types of causes of death, mortality in the five «worst» cities was on average approximately 25 per cent higher than in the «best» cities.

What causes the differences?

How should these findings be interpreted? Since the high-mortality cities on the whole demonstrated the same pattern of excess mortality for all types, we have little reason to believe that the excess mortality from avoidable causes of death can be ascribed to especially poor quality of the health services in these cities. A more obvious interpretation would be that the health services function quite identically in Norwegian cities, and that the inequalities in mortality rates are mainly caused by differences in living conditions and lifestyles rooted in history and social life. This may have given rise to differences in vulnerability to all causes of death, both those that the health services are able to amend, as well as those that are beyond their influence.

Furthermore, the findings may also give rise to questions pertaining to the classification of causes of death as such. Is the classification providing precise information on whether causes of death are treatment-sensitive, policy-sensitive or by and large unreceptive to prevention and medical interventions? Perhaps the classification introduces an unrealistically sharp distinction between them. One topic for further research would be to investigate whether the causes of death that are assumed to be avoidable sometimes are quite unreceptive to interventions, while the causes that are assumed to be unavoidable may in fact reflect both prevention and treatment quality.

LITERATURE

1. Elstad JI. Hva er det med Arendal og Ålesund – og Oslo? Om dødelighetsforskjeller mellom norske byområder. Notat nr. 1/11. Oslo: NOVA, 2011. www.nova.no (15.1.2012).

2. Hem C, Næss Ø, Strand BH. Social inequalities in causes of death amenable to health care in Norway. Norsk epidemiologi 2007; 17: 43 – 8.

3. Dahl E, Hofoss D, Elstad JI. Educational inequalities in avoidable deaths in Norway: a population based study. Health Sociology Review 2007; 16: 146 – 59.

4. Korda RJ, Butler JRG. Effect of healthcare on mortality: trends in avoidable mortality in Australia and comparisons with Western Europe. Pub Health 2006; 120: 95 – 105.

5. Nolte E, McKee M. Variations in amenable mortality – trends in 16 high-income nations. Health Policy 2011, 103: 47 – 52.

6. Mustard CA, Bielecky A, Etches J et al. Avoidable mortality for causes amenable to medical care, by occupation in Canada, 1991 – 2001. Can J Public Health 2010; 101: 500 – 6.

Publisert: 21 February 2012. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.11.1102

Received 26 September 2011, first revision submitted 31 October 2011, approved 15 January 2012. Medical editor: Trine B. Haugen.