The prevention paradox or the inequality paradox?

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In February this year, a new edition of Geoffrey Rose’s classical book *Strategy of Preventive Medicine* was published, with a commentary by Kay-Tee Khaw and Michael Marmot. The commentary summarizes the life and work of Geoffrey Rose, explains the main content and impact of the classical book and gives plenty of examples that illustrate the validity of Rose’s theses. Coincidentally, in the February issue of the *American Journal of Public Health*, Frolich and Potvin published an article pointing out that interventions based on the population-based approach, advocated by Rose, may increase inequality in health. They give three examples on this and propose a strategy to mitigate such effects.

The key messages of Geoffrey Rose may be summarized as follows: the distribution of risk levels for major determinants of disease follows a continuum in which the high-risk persons are at the extreme end. A large number of persons with moderately increased risk levels contribute more cases than a small number with extreme risk levels. Thus, interventions targeting the general population, aiming at shifting the risk curve to the left, are more effective than interventions targeting high-risk groups. This latter is called the prevention paradox, since it is not the individuals with moderately elevated risk that have the greatest benefit from such interventions.

Frolich and Potvin, while acknowledging the important public health impact of Rose’s principles, mean that Rose did not address the underlying mechanisms that led to different distribution of risk in different social groups. They cite three examples in which interventions have increased health disparities, the most obvious one being information campaigns against smoking. They suggest that focus on vulnerable populations as target for public-health interventions should be a complement to the population-based approach. The concept ‘vulnerable groups’ denotes subgroups in society characterized by shared social characteristics that put them at higher risk of risks. In fact, the wording by Rose is not very different in content (p. 160 of ref. 1): ‘socio-economic deprivation includes a whole constellation of closely interrelated factors such as lack of money, overcrowded and substandard housing, worse education, unsatisfying work or actual unemployment…’ and further on ‘Political changes which reduced economic inequalities would surely reduce also these health inequalities, with great benefit to national health overall’.

The point is not to argue on ‘who was first’, since in that case, one might go to Virchow or other early proponents of a socio-economic perspective on public-health interventions. But a re-reading of Rose, together with the commentary by Khaw and Marmot, and the paper by Frolich and Potvin, helps us stimulate thinking about theoretical as well as empirical grounds for public-health intervention and their socio-economic consequences. It is easy to make the case that there can be no harm in adding a ‘vulnerable populations approach’ as a complement to the population approach. But Khaw and Marmot give an example in their commentary (p. 21 of ref. 1) showing that while interventions targeted to poorer groups might seem sensible, this is not without problems since i) one would have to set an arbitrary cut-off point for defining the vulnerable group and ii) the appropriate level of intervention may well be the whole of society.

Are the population-based approach and the vulnerable-populations approach complementary or contradictory? It depends, is probably the most appropriate answer. On circumstances, type of population, type of risk factor, etc. A clear policy implication is the need for careful monitoring and follow-up of public-health intervention, with focus on effects—intended or not—in different socioeconomic groups.

References