

## Bringing the “Social” to Epidemiology: S. Leonard Syme, Ph.D.

*Len Syme has no trouble naming his greatest contribution to the field of public health. “That’s easy: training a large group of people who are now the leaders in the field.” He adds, “In my own view, my work is medium, but the work of my students is at another level.” He’s part right—his former students include luminaries such as Sir Michael Marmot, knighted for services to epidemiology; Lisa Berkman, chair of the Department of Society, Human Development, and Health at the Harvard School of Public Health; and George Kaplan, director of the Center for Social Epidemiology and Population Health at the University of Michigan.*

The other part—his deprecation of his own work—says much about this pivotal figure in the field. Syme’s willingness to turn a critical eye to his own research and to accept new theories and ideas even when they run counter to his own may be part of how he has made such a profound impression on so many of his students.

In a 2005 article in the journal *Epidemiologic Perspectives and Innovations*, Syme offers a history of social epidemiology titled, “Historical Perspective: The Social Determinants of Disease—Some Roots of the Movement.” It is an engrossing account of the growth of the field, peppered with Syme’s characteristic dry humor. But just as interesting are the accompanying papers, written by former students, emphasizing again and again how much Syme informed their work. Marmot writes, “I have never come across anyone in the academic world who had quite the powerful influence on students that Syme did.” In conversation, his students say, he is truly collaborative, asking for opinions, then challenging them to defend those ideas and listening for the answers.

In 2004 Syme published a paper in the journal *Preventing Chronic Disease* titled, “Social Determinants of Health: The Community as an Empowered

Partner.” In it he ruefully critiques the failures of one of his own intervention projects to demonstrate the importance of truly engaging the community in any public health effort. With this modest approach he is able to slyly exhort researchers to drop the “expert” attitude and become willing to learn from the people they hope to aid.

In 1965 when Syme began looking at how social factors such as migration affected the rate of coronary heart disease, there was not yet a body of research devoted to studying the influence of environment—social, physical, and cultural—on disease. In the last 10 years, however, social epidemiology has gained new prominence. Syme says that the limitations of a model that only considers individual risk factors are becoming plain. “Take heart disease (the disease that I know best). We’ve spent fifty years studying risk factors for heart disease, and we now have a list of about thirty: smoking, obesity, lack of activity, diabetes, and so on. All those risk factors together explain less than half of the heart disease we see. After fifty years of well-funded research by the most brilliant minds, we still can’t explain more than half of the most prevalent disease of our time? After a while you start to say, ‘Hmm, could it be that we are missing a risk factor or two?’ But that risk factor would have to be so powerful that it’s not likely we have missed it.



Therefore it may be that we’ve got the wrong model. I think there is recognition of the fact that the current methods of studying individuals and their behaviors are not explaining what we need to explain, and that gets people saying, ‘Let’s rethink this.’”

“The model now is that there are a set of psychosocial risk factors like social support, social class, hostility, depression, a number of things that tend to compromise the body’s susceptibility to getting sick but that don’t determine what you get sick with. What you get sick with is probably attributable to viruses, cholesterol—disease specific risk factors. When you begin to think about psychosocial risk factors you begin to think about social networks and social support: reaching out beyond the person and looking at the neighborhood, occupation, family, and other social factors. In order to explain disease susceptibility, we will have to rethink our research strategies.”

Making the shift from an individual-centered approach to a group-centered approach is often challenging for epidemiology students, particularly for physicians. Syme explains how he convinces his students to consider the importance of the social environment to health: “The first lecture I give to physicians in the epidemiology program is about suicide. Here is a condition where the causes clearly must be in the personal life histories and tragedies of the individual. They can really relate to that. Then I point out the work of Émile Durkheim, who in 1898 said, ‘Why do certain groups have higher rates of suicide than others? And if the causes are found within the individual, why do the rates of suicide have a patterned regularity over time? There must be something about the world in which people live that generates a certain predisposition.’ You can just hear the clinicians saying, ‘I never thought of that,’ because they have been busy with differential diagnosis of illness in individuals, which is clearly also important, but to be able to look at it with another perspective is critical.”

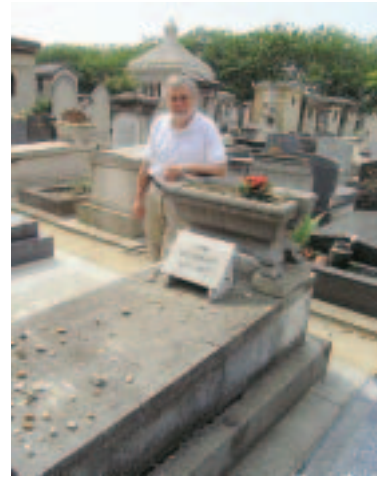
When asked about the future of public health, Syme says wryly that while mapping the genome may be fascinating, the next frontier in understanding disease won’t simply come from identifying genetic predispositions to various illnesses, because many of these predispositions become significant only when factors in the physical and social environment act on them. It would be better to focus our attention on the youngest members of our society. “When you study children, it turns out they have most of the risk factors that we later study fifty years down the road: respiratory function, temperament, obesity, blood pressure—a number of things we look at in adulthood.” Epidemiologists tend to focus on older populations with lots of disease, and rarely study children since they don’t have enough

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disease. But while studying children may present real challenges, Syme thinks this work will be crucial in our understanding and prevention of disease. “When you intervene with kids you can really make a difference.”

But what kind of interventions should we be using? According to Syme, we know what doesn’t work. “Almost all of our public health interventions have failed. The problem is that we have messages to give, and people have lives to lead, and usually the two don’t intermix. We are interested in cholesterol and blood pressure, and people are interested in jobs, their house, their kids, income security, and so on. We really need to pay attention to the things that people care about, and stop being such experts about our risk factors.” He cites the *Wellness Guides* developed by the School’s Health Research for Action initiative as an example of an intervention that involves communities in real collaboration from start to finish.

Syme points to his study of hypertension in San Francisco bus drivers as an example of how easy it is to miss the forest for the trees. While investigating the unusually high rates of hypertension in this group, the research team found that bus drivers also complained of back pain and gastrointestinal and respiratory difficulties. The team designed interventions to address these issues, but none were effective. Then the researchers learned more about the bus drivers’ daily routine. Drivers had to adhere to a rigid schedule that was determined by a computer, and they were penalized for late arrivals. However, there was a shortage of buses, which meant drivers often were not given enough time to



Len Syme visits the Paris grave of renowned sociologist Émile Durkheim.

get from one stop to the next. They raced into fast food restaurants for meals to stay on schedule. Because they were so often late, they faced irate passengers and traffic problems daily, and often did not have time to return home between morning and evening shifts. The problem, says Syme, was that the researchers were focusing on the specific diseases rather than the fundamental problem: the job.

If Syme had his way, the field of public health would continue to move towards a view of health that includes looking at larger determinants of disease like poverty. “Until public health can back away from a focus on individual diseases and disease risk factors and look at social circumstances, we are not going to be able to advance, and we are not going to be able to intervene.” And though he would never admit to it, if anyone can nudge the field in that direction, it’s Len Syme. 🍷

— Kelly Mills