Module 3: Social Determinants of Health

Part 1: What Are the Social Determinants of Health?

Carolyn: Hi, my name is Carolyn Cannuscio, and I'm a social epidemiologist. I work at the University of Pennsylvania Perelman School of Medicine. My work relates to the social determinants of health. I have a particular interest in urban health, and many of the examples I'll share with you today relate to urban health.

My overarching goal for this session is to introduce this concept of the social determinants of health and to help you think about how the social determinants can be used as a lens for thinking about the Healthy People 2020 goals and objectives.

An overarching concept that's woven throughout the Healthy People 2020 objectives is this idea that we have a mandate to create social and physical environments that promote good health for all. So today, I'll give you some examples of how social and physical environments can promote or impede good health for all.

Healthy People 2020 offers a wonderful overarching visual depiction of the social determinants of health. When you think about the social determinants of health, what we're really talking about is the conditions in which people are born, live, learn, work, play, age, and conduct their day-to-day lives. These conditions influence our opportunities, our social interactions, our functioning, our quality of life, and ultimately, our health.

We'll talk about examples from each of these areas of the social determinants of health, particularly this first area of neighborhood and built environment, with subset categories of the quality of housing, crime and violence, environmental conditions, and access to healthy foods.

In another module, you'll hear about health and health care, access to health services, access to primary care, and health technology.

Today, we will also focus in this module on the social and community context for health, thinking about how family structure and the ways of family life can influence health, how social cohesion in neighborhoods or the connections among neighbors can influence health, and how perceptions of discrimination and equity, or the lack thereof, can be highly influential to determining the health of populations. We'll also talk about civic participation and strategies to improve civic participation as potential ways to improve population health.

In the introduction to my talk, I'll also give some examples from the Healthy People 2020 goals that relate to education and how education policies can influence the health status and life chances of children and youth. We'll also talk about examples of economic stability and how

conditions of poverty, employment status, access to employment, and housing stability can influence the health of populations.

So, you keep hearing me say the word populations. When we think about the social determinants of health, we're really not talking about the health of individuals, although we as individuals surely encounter social determinants of health in our day-to-day lives. What we're really talking about is how the conditions for health vary from place to place, from population group to population group, and even over time.

If we think about population health, we can think about health at the aggregate level. This map, which I invite you to pause the video for so that you can really study some of the details of the map, offers very interesting and fundamental information about how health varies across the world.

It's amazing to consider that about 20 million children die every year; very often from preventable causes. If we look, for example, right at the center of this slide at Sierra Leone, we see that a child in Sierra Leone is about 87 times more likely to die than one born in Sweden. When we're talking about child mortality, we're referring to the death of children under the age of five.

You can see that the highest rates of child mortality are in Afghanistan and many African countries, and the lowest rates of child mortality are in Iceland, Andorra, Liechtenstein, Luxembourg, Singapore, and Sweden. There's tremendous variation across the globe in how well a child is likely to do and in that child's susceptibility to an early death.

We can also see when looking from county to country huge variations in life expectancy. Here's Sierra Leone again, and we can see that life expectancy in Sierra Leone is about 45 years old. Sierra Leone is also a very poor country. If you look at wealthier nations like Japan and the United States, you can see that the average life expectancy is higher than 75 years old.

What this map show is the correlation between income per person, or GDP per capita, and life expectancy, and we see this fairly clear pattern. I'm going to show you several slides that reiterate this pattern that essentially poor people do poorly in terms of health indicators.

I invite you to look at this wonderful website, gapminder.org, to look at how mortality and life expectancy have changed over time in countries across the world.

We might expect that life expectancy would be very different in a place like Sierra Leone compared to a place like Sweden. The conditions for health are so different in Sierra Leone and in Sweden, but interestingly, we see these health disparities even within specific countries.

Here is a classic study based on civil servants in the UK. What this graph is intended to show is that mortality rates per thousand vary tremendously by occupational grade or class.

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If you look at the left hand side of the graph and just focus on the blue bars for a minute, those are the men, and you see that the mortality rate is lowest in the professional class, which is the executives, the leaders in an organization. The unskilled laborers on the right hand side are likely to be the lowest paid and the lowest status employees in the British civil service, and they also have much high mortality rates than we see in the professional class. And we see this graded relationship, so that the intermediate classes have intermediate rates of mortality. We see this pattern in men and in women.

This is particularly important because these differences were observed across the entire socioeconomic gradient. There wasn't this clear threshold level at which there was a significant change in mortality rates; there was this slope where we saw that people who were at lower status and in lower status occupations had higher and higher and higher rates of mortality.

This was conducted interestingly in the UK, so national health insurance didn't eliminate the gradient. Some other differences persisted besides access to healthcare that allowed this socioeconomic gradient or this social status relationship to persist. These civil servants were followed for a long time, and status in midlife predicted late life health.

You might ask, does this apply in the United States, and these differences in health and longevity are apparent in the United States, and differences are apparent in the United States by race as well as income and other measures of socioeconomic status.

In the U.S., black men live on average six years less than white men, and in the U.S., adults who did not graduate from high school can expect to live about seven years less than people with more education.

These are very big differences if we think about how long we expect the people we know and love to live. Six or seven years of life expectancy is a major difference.

Here, we can see data related to infant mortality rates for mothers who are 20 years old and over by race, ethnicity and education. There's a lot of information on this graph, so I again invite you to pause the video and really study the differences we can observe in this graph.

First, I'll focus your attention on the group of mothers who had less than a high school education, so look at just the top group of bars in this graph. What stands out in this graph is that women who are African-American, non-Hispanic had far and away the highest levels of infant mortality. There are quite dramatic differences between the rates of infant mortality for the infants of mothers who are African-American compared to Hispanic, for example. And that's true if you look at just that group with less than a high school education.

Interestingly, if you then move down to look at mothers who have a high school education, there's still this tremendous racial or ethnic disparity, and still, the infants of mothers who are African-American, non-Hispanic have the highest rates of infant mortality.

And yet again, you still see that disparity persist among mothers with a college education or more.

It's also true if we look according to socioeconomic status. In this graph, I invite you to focus on just the middle-aged group, so look at the group that's between the ages of 55 and 64 years old.

You can see that in that age group, women who are classified as lower class, or lower socioeconomic status, had the highest number of chronic conditions on average, followed by women in the lower middle class, the upper middle class, and then women in the upper class in that 55 to 64 year old age group. The women in the upper class had the lowest number of chronic conditions.

That's also true if you look at the 65 to 74 year old age group and the 75+ group. Actually, it looks like it's true in all age groups, with the possible exception of that 22 to 34 year old age group, the youngest age group. The differences are less profound earlier in life.

I'm sure you're asking – or I hope you're asking – why are these differences by socioeconomic status so apparent?

Here, we're looking at risk factors according to education status. One of your hypotheses might be, okay, well, it must be all about behavior. It must be that there are differences in behavior or lifestyle choices among people who are richer versus poorer or among people who more versus less educated. To some extent, there is truth to this. It's not true across the board necessarily, but let's just look at the example of smoking.

Men who have less than a high school education, that blue bar, are far more likely to smoke than are men that have at least a high school education. We also see that educational disparity for physical activity, with men who have less education less likely to engage in physical activity.

But there are other explanations that have also been put forth, and I invite you to read this interesting blog post from the New York Times that suggested that scientists have put forth one subjective explanation that this might be more about status and stress than about behavior.

Here, the author says, the more helpless one feels when facing a given stressor, the more toxic that stressor's effects. The sense of control tends to decline as one descends the socioeconomic ladder, with potentially grave consequences. Those on the bottom are more than three times as likely to die prematurely than those at the top. They're also more likely to suffer from depression, heart disease, and diabetes.

So if you think back to that example from the British civil servant study, you can think about the stresses that might come with being an unskilled laborer who has less autonomy or control but plenty of demands in their job, versus a professional who is free to come and go in their job and who has the autonomy to make decisions about the way their work day, their work week, their

work life will go. So there are other aspects of status and place in the hierarchy that may also influence our susceptibility to stress and therefore to disease.

It's important to track these disparities in health to understand who is at greatest risk, and it's also important to ask why. Why do these differences exist? Why do the conditions for health vary so much from place to place and across population groups?

What I would propose to you is that these differences in health status in population health are not an accident. They are established in our policies. Not just in health policy, but also in policies regarding the funding of schools, the provision of price supports for certain foods and not others, and the marketing of foods and tobacco, for example. The social determinants of health are deeply entwined with our policies and programs on a national level, on a local level, and even closer to home in our schools and in our workplaces.

Here are a few examples from the Healthy People 2020 objectives that relate to the social determinants of health, and as you look through the Healthy People 2020 objectives, you'll start to see how policies can act as social determinants of health.

Let's think about the role of school environments and school policies. Here's a specific objective to increase the proportion of schools with a school breakfast program, so programs to improve the nutritional options available to children in schools. Currently, about 68.6% of schools, including private and public elementary, middle and high schools, had school breakfast programs in 2006. The target is to raise that proportion to 75.5%.

Another school policy related goal is to increase the proportion of adolescents whose parents consider them to be safe at school. In 2007, a relatively high proportion of parents felt that their adolescents were in safe schools, but the target is to increase that so that 95% of parents of adolescents will feel that their children are safe at school. As a parent, I can say that I really hope for 100%, but we want to move the needle higher with the Healthy People 2020 objectives.

Another Healthy People 2020 objective is to increase the proportion of the nation's public and private schools that require daily physical education for all students. Here, I really was taken aback by the low proportion of schools that currently require daily physical education for all students. Only 3.8% of schools required daily physical education in 2006. The target is to get that to 4.2%.