

[MUSIC PLAYING]

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To follow the lectures, there are some basic things that you need to learn and that will give you a conceptual framework for the rest of the course. You're now familiar with Professor Hans Rosling's Gapminder graph showing how money is linked to health in the countries around the world. And to give you that conceptual framework, we'll look at the graph more in detail.

If you have forgotten, on the horizontal axis, here, we have money. And on the vertical axis, we have health, measured by life expectancy. The size of the bubble is still the size of the population. And color still represents geographical region.

We can clearly see that not all countries are the same. There's a huge variation between the countries. From the countries in this corner down here all the way up to the countries in the healthy and the wealthy corner, the variation is huge. And in order to better understand this variation, we group countries together.

But how should we group the countries? If you were to divide the world on this graph into two groups, where would you draw that line? There used to be two distinct groups, and it used to be quite easy to draw a line between them and call the countries on this side for developing, and the countries on the other side for developed. As you can see in the graph now, in 2015, it's not very easy nor intuitive to decide where to draw the line anymore. There are just not two clear groups.

So to reflect the bigger variation and the continuity between countries today, we use four groups, the four World Bank income groups. Let me show you what that looks like.

First, in this corner, we have countries which have little money. And people live short lives. Life expectancy is only 59 years. These countries are called low income countries. We can find a country like the Democratic Republic of Congo in this group. In total, 1 billion people live in low income countries.

In the next group, as you can see, countries have a little bit more money, and people live a little bit longer. Life expectancy is 67 years. And we call this group the lower middle income countries. You find a country like India here in this group where some people are very well off, but far from everyone. And many people still live in poverty. 2.5 billion people live in lower

middle income countries.

Then we have upper middle income countries where another 2.5 billion live. In this group you find China. Income is going up, and people live longer and longer. And as you can see, life expectancy is 74 years in upper middle income countries.

Finally we have the high income countries. Here we can find countries like Japan, the US, and many European countries. Most people here live long and have a high income. Life expectancy is 79 years. In total, 1 billion people live in high income. But, remember, there are still big differences between the countries in each group, and also very big differences in health and wealth within each country.

Now we know how countries are grouped by income. And we saw again how money is linked to health. So let's take a closer look at what people get sick of and even die from, and how it differs in our four income groups. To help us with this, we use a tool, the Global Burden of Disease Compare Tool from the Institute of Health Metrics and Evaluation at the University of Washington in the United States.

The Global Burden of Disease is a description or a measure of the collective disease burden produced by all diseases around the world. This tool will help us understand what diseases and injuries make people sick, shorten their lives, and even kill them. It's like an overview, like a map you could call it, of what makes people unhealthy around the world. And you will get to use it yourselves later on in one of the assignments.

The Global Burden of Disease Tool is made up of three proportional boxes. We have the blue box, the red box, and the green box. In the blue box, you can find diseases like heart diseases and cancer. And we call these diseases noncommunicable diseases. In the red box, you can find communicable diseases or infections, but also illnesses related to pregnancy, diseases that affect newborn babies, and diseases related to nutrition. Finally, the green box, here you can find conditions caused by injuries and disasters.

Together, these three boxes represent the total disease burden of a country. If one box is getting smaller-- for example, fewer children die from measles thanks to measles vaccination-- the other boxes will grow in size since they are proportional to each other.

The Global Burden of Disease Compare Tool can be used in several ways. It can show what people die from in a country, for example. But we can also use it to show something we called

disease burden, which is a more complex measure. It includes what makes people sick, like back pain or mental illnesses that do not primarily kill you, but can severely disable a person, and stop her or him from living a full healthy life. It also takes into account the impact of someone dying too early from a disease, like a child dying from measles and therefore never growing up to become old.

So we measure this so-called disease burden where these two things are included-- what makes people sick, and the impact of people dying too early in something we called disability adjusted life years, or DALYs. And we will be using DALYs in several of the lectures in this course.

So now let me show you the disease burden, represented by DALYs, in the four income groups. Here, in the low income countries, can you see how big the red box is in comparison to the blue box? That means that in these countries, more people are getting sick and dying of infections compared to people getting sick and dying of noncommunicable diseases. The green box is also quite small, meaning that in relation to the huge disease burden caused by the diseases in the red box, the burden of injuries from, for example, traffic accidents, is quite small.

What about the next group, the lower middle income countries? Take a look at the box here. And you can see that it looks slightly different. The red box is still the largest. But the blue box is getting bigger.

In the upper middle income countries, the group where we find China, we can see that the blue box has overtaken the red box, meaning that more people get sick and die from noncommunicable diseases than from infections.

And the trend continues in the final group, in our high income countries. The blue box is much bigger than the red box. In a country like Sweden, for example, 90% of the DALYs come from noncommunicable diseases, and only 10% from the red box and the green box combined. So we can clearly see here that when a country becomes richer all along the income scale, the types of the diseases that causes disability and death change. And you will learn more about the content of the boxes throughout the course. But first it is time to look at how we measure the content of the boxes using health indicators.