BY ANUSUYA CHATTERJEE

Heart disease, adult-onset diabetes and obesity are widely viewed as plagues of affluence that take a disproportionate toll on Westerners who exercise too little and eat too much. Health experts call these noncommunicable diseases (NCDs), and they are certainly a major problem in Europe and the United States. But related deaths are, in fact, proportionally much higher in emerging markets.

Moreover, mortality from NCDs is expected to rise most rapidly in Africa, Asia and the eastern Mediterranean in coming decades. So, realistic strategies for prevention and management should be a priority for economic as well as humanitarian reasons.

Here, I focus on India, one of the countries where the rise in NCD prevalence threatens to undermine gains from sustained economic growth. In 2008, combined death rates from cardiovascular diseases and diabetes totaled 669 per 100,000 people in India – more than double the rate in the United States and almost four times the rate in Japan.

What's more, there's good reason to believe that these big numbers will get much bigger. In 2012, 63 million adult Indians suffered from diabetes; by 2030, the total is expected to top 100 million. If NCDs remain unchecked, India will pay a very high price.

OBESITY AND MALNUTRITION: MANAGING A DUAL BURDEN

Obesity is the leading cause of many chronic diseases, including hypertension, diabetes and even some forms of cancer. As the Indian economy transitions from agriculture to an urban-based service economy, it is hardly surprising that the rate of obesity has more than doubled in the past 20 years, growing from 0.7 percent in 1998 to 1.9 percent in 2008. Alert readers will note, of course, that these figures are tiny by comparison with virtually any middle- or upper-income country. But the impact of obesity on the prevalence of NCDs is expected to be disproportionately large because India faces the dual burden of under- and overnutrition – often sequentially, in the same individuals.

Actually, the collateral damage from growing affluence threatens to become far worse than one might expect. Before India's economy took off, its public health issues were comparable to those of any other developing economy, with high levels of poverty leading to widespread malnutrition. Today, however, India faces extremes of both poverty and affluence – and thus disproportionately large problems with chronic illness.

In 2006, 20 percent of Indian children under age five were acutely malnourished and 48 percent were stunted by chronic malnour-

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ishment. There is solid evidence suggesting inadequate nutrition is a major risk factor for developing metabolic disorders that can lead to both type 2 diabetes and cardiovascular diseases. In particular, it can damage the fetus in ways that permanently affect the normal course of metabolic development.

Fortunately, malnutrition among children has decreased over the last decade, as the impact of economic growth has trickled down to the very poor. But with 42 percent of children still significantly underweight, hunger remains a very big issue.

If malnutrition were the only cause of glucose intolerance (the primary cause of adult-onset diabetes) among Indians, the problem would both be manageable and would shrink with time. Yet growing obesity layered on top of existing malnutrition will create havoc in a society that suffers from the two extremes. Children born and brought up in poverty may never develop diabetes if they remain undernourished throughout life. However, if their food intake subsequently rises to excess, that calorie imbalance puts them at a higher risk for obesity and impaired glucose tolerance than children born to affluence.

Complicating the picture further, excess weight may affect Indians' health more than others. Indeed, there is growing concern that the body mass index (BMI) definition of obesity used by the World Health Organization understates the health impact of weight gain for Asians. Indians, on average, are less muscular and have a relatively higher percentage of body fat than people of European and African descent. Hence, Indians are at a higher risk of obesity-related diseases even before they reach the WHO threshold for obesity. Recently, a panel of WHO experts concluded that the risk of type 2 diabetes and cardiovascular disease is substantial for Asians even at BMIs lower than the existing WHO definition of excess weight. The current cutoff point is 25, but Asians may face greater risk at BMIs as low as 22. Still, even measured by the BMI-less-than-25 benchmark, nearly one Indian in four is expected to be overweight in 2015.

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We lack the data to estimate the economic burden for India implied by the health consequences. But there is certainly enough indirect evidence to conclude that the impact in terms of higher medical care costs, lost productivity and lower quality of life will be soberingly high. In the United States, where

DEATHS FROM CARDIOVASCULAR DISEASES AND DIABETES

AGE-STANDARDIZED, PER 100,000 POPULATION, 2008

COUNTRY	NUMBER OF DEATHS, MILLIONS
India	669
Thailand	623
China	572
Germany	341
U.S.	312
South Korea	283
U.K.	268
Spain	226
Japan	183

SOURCE: World Health Organization

ADULT DIABETICS

MILLIONS

COUNTRY	2012	2030	GROWTH (2012-2030)
India	63.0	101.2	61%
Thailand	3.4	5.5	60%
Japan	7.1	10.2	43%
China	92.3	129.7	41%
South Korea	3.3	4.3	31%
U.S.	24.1	29.6	23%
Spain	3.2	3.9	21%
United Kingdom	3.3	3.6	9%
Germany	5.2	5.6	6%

SOURCES: International Diabetes Federation; Milken Institute

data is available, the combination of treatment cost and lost productivity from diabetes and heart disease is projected to exceed $900 billion a decade from now. And while the cost per case of illness will be smaller in India than in the United States because the opportunity cost of labor is lower in India, the proportion of the population affected will be much higher in India – ensuring that productivity loss and medical care costs will translate into a slower rate of GDP growth in a country that can ill afford it.

WHAT NEXT?

Dual-burden households share sociodemographic profiles with households that suffer

PREVALENCE OF OBESITY IN SELECT COUNTRIES

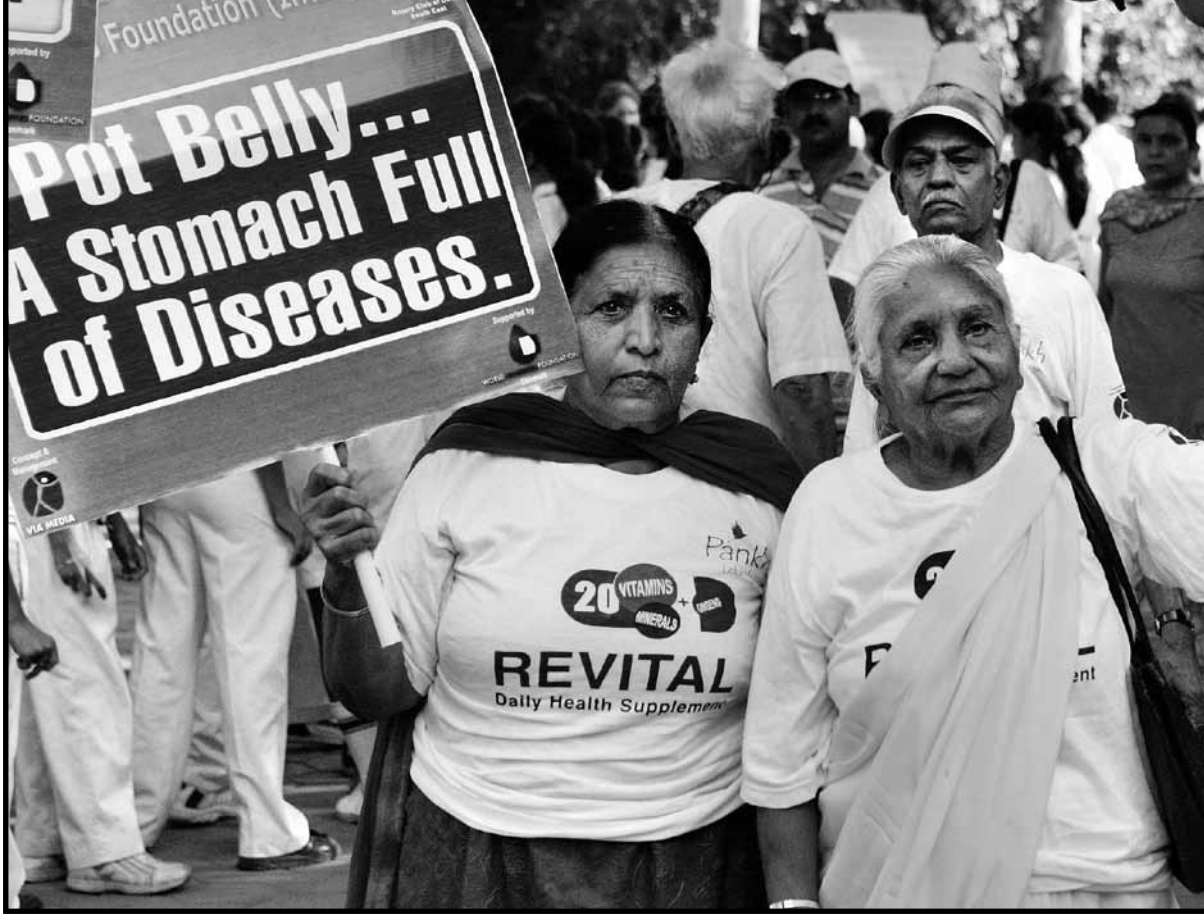
COUNTRY	OBESITY RATE (% ADULT POPULATION)	LAST YEAR REPORTED
U.S.	33.8%	2008
Mexico	30.0	2006
New Zealand	26.5	2007
Australia	24.6	2007
Canada	24.2	2008
U.K.	23.0	2009
Greece	18.1	2008
Spain	16.0	2009
Germany	14.7	2009
Switzerland	14.7	2009
France	11.2	2008
Sweden	11.2	2009
Italy	10.3	2009
Norway	10.0	2008
China	5.7	2008
Japan	3.9	2009
South Korea	3.8	2009
India	1.9	2008

SOURCES: International Diabetes Federation; Milken Institute

only from obesity, raising concerns that underweight individuals may inadvertently become the focus of obesity-prevention initiatives. Hence, a sound public policy should include both improving nutrition in households that are short of calories and reducing energy-dense food intake and inactivity in obese households.

Both public and private efforts are underway in India to combat the widely recognized problem of malnutrition. But more attention needs to be paid to the other side of the coin. And with the country still in the early stages of an obesity epidemic, a bold initiative now could save it a boatload of grief later on. Among the measures that make sense:

Aggressive promotion of health literacy. Malnutrition may occur even in middle-income households because the members who do the shopping are not aware of the nutritional values of various foods. And, as in many rapidly developing economies, purveyors of



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nontraditional snack foods and the like are marketing aggressively for a piece of consumers' discretionary income. An effort at countermarketing might make a real difference.

Adding disclaimers to energy- and sugar-dense food and drink. Even people who are aware of the health effects of snacks and fast foods may not know the content of what they are eating. India has done a great job in making people aware of the dangers of tobacco, with "smoking kills" notices on every cigarette pack. It is time to require the food industry to provide parallel disclaimers.

Encourage physical activity. India is far less mechanized than advanced countries. But the people who need exercise most – middle-income service workers with sedentary jobs and plenty of discretionary income to purchase junk food – are no more active than their counterparts in the United States. Along with public information campaigns, one could imagine specific incentives to encourage exercise – for example, requiring bike lanes in new industrial developments and subsidies for after-school sports programs for children.

Build innovative programs at the local level. Indian cultures are immensely diverse. It thus stands to reason that antiobesity programs tailored to regional diets and interests are likely to be more effective than one-size-fits-all measures.

Evolution takes no account of the massive changes in society that are largely responsible for the pandemic of degenerative, noncommunicable diseases sweeping the planet. And countries like India, where incomes are only beginning to catch up with the West, are exceptionally vulnerable. But, unlike in the West, where the habits of affluence are deeply ingrained, it may be possible to reverse this spread before it undermines economic growth and quality of life. India has taken a giant step to contain tobacco use. Now it's time to tackle diet and exercise. M