Complications of hypertension are associated with an estimated 9.4 million deaths worldwide every year [1]. In 2008, globally, the overall prevalence of hypertension (including those on medication for high blood pressure) in adults aged 25 and over was around 40% [2]. On average, global population systolic blood pressure decreased slightly between 1980 and 2008 [3, 4], although the worldwide prevalence of obesity has nearly doubled during this period. In 2008, the global prevalence of high cholesterol was 40% and prevalence of diabetes was 10% in adults over 25 years [1].

Most people with diabetes and hypertension also have other cardiovascular risk factors such as raised lipids [1, 2]. To reduce the prevalence and consequences of hypertension and diabetes a complimentary mixture of population-wide and individual interventions is required. To ensure optimal coverage of the population with these interventions implementation of public health policies has to be complemented with a health system which addresses hypertension through affordable strategies [2, 5]. An approach that relies mainly on the overall risk of individuals is likely to be more cost effective than one focused solely on blood pressure levels or targets.

There are many barriers to the control of hypertension and diabetes in low- and middle-income countries. They include the double burden of communicable and noncommunicable diseases, inadequate investment in health and prevention, fragile health systems particularly at primary care level, and lack of or maldistribution of health workers. Several countries spend less than 50 USD per capita per year on health. This low level of investment is inadequate to effectively address noncommunicable diseases in a sustainable manner [2].

To address cardiovascular disease, diabetes, and noncommunicable diseases a set of core interventions (Table 1) have been identified which are highly cost effective, affordable, and feasible to implement even in resource-constrained settings [6]. These interventions address diabetes, hypertension, and their key underlying risk factors—unhealthy diet, harmful use of alcohol, and physical inactivity. Some of these interventions are feasible in primary care even in low-resource settings. For example, people at risk of heart attacks and stroke usually have a modest elevation of multiple risk factors, such as smoking, raised blood pressure, raised cholesterol, and/or diabetes. Such people who have medium or high cardiovascular risk can be treated with a multidrug regimen and behavioral modification to reduce the risk of developing future heart attacks, strokes, cardiac failure, and kidney disease. This integrated intervention applied to individuals with an overall moderate or high cardiovascular risk based on integrating risk based on age or several risk factors is more cost effective than conventional vertical approaches to single-risk-factor interventions [5].

Further, the development and deployment of a cadre of nonphysician health workers, by removing cultural and legal barriers, will facilitate screening for hypertension and diabetes. This can lead to prescribing a limited number of safe, proven, and affordable medicines by nonphysician
Table 1: A core set of very cost-effective interventions for prevention and control of noncommunicable diseases including cardiovascular disease [6].

<table>
<thead>
<tr>
<th>NCD core intervention set (best buys)</th>
<th>Population-based interventions addressing NCD risk factors</th>
<th>Reducing tobacco use</th>
<th>(i) Excise tax increases; (ii) smoke-free indoor workplaces and public places; (iii) health information and warnings about tobacco; (iv) bans on advertising and promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing harmful alcohol use</td>
<td>Reducing tobacco use</td>
<td>(i) Excise tax increases on alcoholic beverages; (ii) comprehensive restrictions and bans on alcohol marketing; (iii) restrictions on the availability of retailed alcohol</td>
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<tr>
<td>Promoting healthy diets and promoting physical activity</td>
<td>Reducing harmful alcohol use</td>
<td>(i) Salt reduction when high, reduced salt content in processed foods; (ii) replacement of transfats with polyunsaturated fats; (iii) public awareness media campaign about diet and physical activity</td>
<td></td>
</tr>
<tr>
<td>Individual-based interventions addressing NCDs in primary care</td>
<td>Reducing complications in individuals with CVD and diabetes</td>
<td>(i) Drug therapy (including glycaemic control for diabetes mellitus) to individuals who have had a heart attack or stroke, and to persons with a high risk (&gt;30%) of a CVD event in the next 10 years; (ii) providing aspirin to people having an acute heart attack.</td>
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</tbody>
</table>
tackle the growing burden from NCDs, particularly in low- and middle-income countries.

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References


