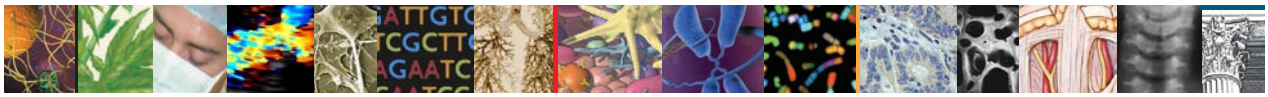

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Perspective

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INTERNATIONAL HEALTH CARE SYSTEMS

Transforming Turkey's Health System — Lessons for Universal Coverage

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In 2003, Turkey embarked on ambitious health system reform to overcome major inequities in health outcomes and to protect all citizens against financial risk. Within 10 years, it had achieved universal health coverage and notable improvements in outcomes and equity.

Health insurance was introduced in Turkey in 1945, at first covering blue-collar workers and later other groups. From 1960 onward, Turkey's 5-year development plans included universal health coverage as an objective; a new constitution in 1982 guaranteed rights to health insurance and health services; and a 1987 Basic Law on Health aimed to operationalize these rights. But the law wasn't implemented, universal coverage failed to materialize, and the poor and unemployed remained without effective coverage. Although the "Green Card" scheme was introduced in 1992 to cover low-income households, it wasn't integrated with existing insurance schemes and lacked a system for identifying potential beneficiaries; moreover, it provided limited financial assistance for inpatient care and none for outpatient consultations, diagnostic tests, or medicines; uptake was therefore low.

Battling economic instability, rampant inflation, rising unemployment, and a dissatisfied public, successive coalition governments between 1990 and 2002 did not prioritize health coverage and services. The Turkish health system faced insufficient and inequitable financing, a shortage and inequitable distribution of physical infrastructure and human resources, disparate health outcomes, and public dissatisfaction.

Then, in 2002, a new political party won a parliamentary majority and created a government committed to economic and social reforms. In 2003, it introduced a Health Transformation Program (HTP) that aimed to improve public health, provide health insurance for all citizens, expand access to care, and develop a patient-centered system that could address health inequities and improve outcomes, especially for women and children.[1] The 2003 Directive on Patient Rights defined citizens' rights to health insurance and choice of health care providers. It codified providers' obligations regarding information provision, confidentiality, and patient consent for interventions and established systems for citizens to express their views about health services.[2]

Health reforms introduced between 2003 and 2010 separated policymaking, regulatory, financing, and service-provision roles: the Ministry of Health would focus on policy and strategy development, while other agencies oversaw public health and delivery of personal health services. The Social Security Institution was established as a single payer, pooling both risk and funds from contributory health insurance and

Selected Characteristics of the Health Care System and Health Outcomes in Turkey.*

Variable	Value
Health expenditures	
Per capita (U.S.$)	665
Percentage of GDP	6.3
Out-of-pocket (% of private health expenditures)	64.4
Public sources (% of total)	73.9
Health insurance	
Rate in population (%)	98
Source of funding	Employers (7.5%) and employees (5%), government contributions for Green Card beneficiaries
Annual physician income (U.S.$)	
Salaried general practitioners	37,900
Salaried specialists	65,300
Generalist–specialist balance (%)	
Generalists	31.9
Specialists	68.1
Access	
No. of hospital beds per 10,000 population in 2011	25
No. of physicians per 1000 population in 2011	1.7
Life and death	
Life expectancy at birth (yr)	75
Additional life expectancy at 60 yr of age (yr)	21
Annual no. of deaths per 1000 population	6
Annual no. of infant deaths per 1000 live births in 2013	17
Annual no. of deaths of children ≤5 yr of age per 1000 live births in 2013	19
Annual no. of maternal deaths per 100,000 live births in 2013	20
Fertility and childbirth	
Average no. of births per woman	2.1
Births attended by skilled health personnel in 2009 (%)	95
Pregnant women receiving any prenatal care in 2009 (%)	95
Preventive care	
General availability of colorectal-cancer screening at primary care level	Yes
Children 12–23 mo of age receiving measles immunization in 2013 (%)	98
Rates of chronic diseases	
Diabetes prevalence (% of 2013 population 20–79 yr of age)	14.9
HIV incidence (cases per 100,000 population)	0.12
Prevalence of risk factors (%)	
Obesity in adults ≥18 yr of age in 2014	29.5
Overweight in children <5 yr of age in 2004	9.1
Underweight in children <5 yr of age in 2008	1.7
Smoking in 2011	27

* Data are from the World Bank, the Organization for Economic Cooperation and Development, the World Health Organization, and the Turkish Ministry of Health Statistics Year Book and are for 2012, except as noted. GDP denotes gross domestic product, and HIV human immunodeficiency virus.

the government-financed Green Card scheme; it was responsible for strategic purchasing from providers, and its mandate was to improve service quality and efficiency.

The introduction of the HTP coincided with a period of sustained economic growth, which enabled the government to increase health expenditures at an average annual rate of 9.1%. Public-sector funding increased from 63.0% of total health expenditures in 2000 to 75.2% in 2010, the highest in the E7 group of countries with emerging economies — including Brazil (47.0%), China (53.6%), India (29.2%), Indonesia (49.1%), Mexico (48.9%), and Russia (62.1%) — while health expenditures rose from 4.1% of the gross domestic product in 2002 to 6.1% in 2010.[3]

In 2004, Green Card benefits were expanded and new mechanisms introduced to identify potential beneficiaries. In 2006, the Social Insurance and General Health Insurance Law was ratified, though a court challenge by the Turkish Medical Association and medical professionals' unions resulted in amendments and delayed implementation. Between 2008 and 2012, Turkey's various insurance schemes were transferred to the newly established Social Security Institution and merged to establish general health insurance with a unified risk pool and a harmonized benefits package covering preventive health care and family medicine services (provided free at the point of delivery) plus targeted health promotion and prevention programs.

Between 2003 and 2011, the number of Green Card beneficiaries increased from 2.4 million to 10.2 million — 13.8% of the population, including more than 60% of those in the lowest in-

MYOCARDIAL INFARCTION

A 55-year-old man with no other serious health conditions has a moderately severe myocardial infarction.

Chest pain and breathlessness develop during the day in Mr. Öztürk, a civil servant who lives in a large city. His family calls an ambulance, which arrives within 10 minutes. He is assessed by the paramedical staff and stabilized with oxygen and painkillers. His electrocardiogram indicates a myocardial infarction. He is taken to the nearest public university hospital, which is able to administer 24/7 primary percutaneous coronary intervention (PCI) within 60 minutes after a patient with a heart attack arrives at the hospital. Mr. Öztürk is assessed in the emergency department and transferred to the cardiology unit for coronary angiography and PCI in two coronary arteries and a stent in one.

His recovery is uncomplicated, and the results demonstrated on echocardiography are not considered worrisome. Mr. Öztürk is discharged from the hospital after 2 days and is referred to a cardiac rehabilitation program at the hospital.

His hospital costs and the three new medications that he receives on discharge — an anticoagulant, a beta-blocker, and a statin — are covered fully by the Social Security Institution. He makes an appointment the following week to see his family physician and to receive a repeat prescription for the medicines, for which he pays 20% of the cost. He is seen in the university hospital outpatient clinic 6 weeks after his discharge, for which he incurs a small cost.

come decile (a further 24% of the lowest-decile population was covered by contributory health insurance). Insurance coverage also improved in all other income deciles, and 85 to 96% of people in the top deciles were covered by contributory health insurance by 2011.[4]

An interactive graphic is available at NEJM.org

Simultaneously, health services expansion was made possible by increasing the size of the workforce; improving its distribution by means of compulsory service, higher remuneration, and contracting; scaling up primary care services; strengthening emergency medical services; and enabling insured people (other than Green Card holders) to choose private-sector providers.

Family medicine–centered primary care was introduced in 2005. By 2011, the Ministry of Health had contracts with 20,000 new family medicine teams at 6250 centers, providing expanded primary care services including prevention, women's and pediatric health care, mobile health care for rural residents, and home care for the homebound (see table and case histories; to compare this country with others, see the interactive graphic). The number of primary care visits increased from 74.8 million in 2002 to 244.3 million in 2011.[4]

Hospital capacity was expanded from fewer than 2.0 acute care beds per 1000 population in 2000 to 2.6 per 1000 in 2011. By 2010, the Social Security Institution had contracted with 421 private hospitals (90% of large hospitals) to provide diagnostic and curative care and complex emergency services such as burn care, intensive care, cardiovascular surgery, and neonatal care. Hospital visits, including inpatient admissions, increased from 124.3 million in 2002 to 337.8 million in 2011, even as active purchasing by the Social Security Institution drove efficiency gains by establishing tariffs for paying hospitals, reducing the average length of stay from 5.8 days in 2002 to 4.1 in 2010, and improving occupancy from 59.4% in 2002 to 65.6% in 2011.[5]

Utilization of maternal and child health services and child mortality improved significantly between 2003 and 2008, especially among rural and socioeconomically disadvantaged populations. Meanwhile, provision of free health care services for costly interventions and reduced cost sharing lowered out-of-pocket and catastrophic expenditures. And satisfaction with health services grew from 39.5% in 2003 to 75.9% in 2011.[4]

Several factors contributed to this transformation. Turkey's population was receptive to reforms that promised health rights and better, more accessible care, and such popular legitimacy helped to overcome the medical profession's resistance. Newfound political stability had invigorated Turkey after 20 years of ineffective governing coalitions, and the new government's absolute majority in the Grand National Assembly permitted swift development and implementation of legislation and policies. Economic growth and a broadened tax base provided Turkey's government with the means to expand its noncontributory insurance scheme, while rising employment levels helped increase coverage through contributory health insurance.

In addition, sustained support from the Council of Ministers helped to overcome opposition from medical professionals and the civil service. And a committed transformation team led by the health minister provided con-

PREGNANCY AND CHILDBIRTH

A healthy 23-year-old woman is pregnant for the first time.

Ms. Kaya and her family have recently enrolled in the Green Card scheme and registered with the new family medicine center when she discovers that she is pregnant. At the center, Ms. Kaya meets a nurse and the family doctor and receives advice on family planning, healthy nutrition, exercise, and risks associated with tobacco and alcohol use. During this visit, her pregnancy is confirmed.

In her first antenatal consultation, Ms. Kaya has her history taken; a general physical check; measurements of height, weight, and blood pressure; abdominal examination to determine the size of the uterus; and a hand-held Doppler test to assess the fetal heart rate. She has a urine examination for bacteria and protein and blood tests for hemoglobin, ferritin, and hepatitis B. Ms. Kaya also receives tetanus toxoid booster and vitamin D supplements. She is provided with general advice on pregnancy and referred to the new "mother-friendly hospital" for an ultrasound, which proves to be normal. Ms. Kaya has three further antenatal clinic visits and receives iron supplements. Her delivery at the hospital is uneventful.

Ms. Kaya has postnatal checks for herself and the baby before being discharged home 24 hours after delivery. During the 6-week postnatal period, she receives four home visits by the family nurse; at the first visit, the baby is given a heel-prick test for phenylketonuria, congenital hypothyroidism, and biotinidase deficiency. Ms. Kaya receives continued support for breast-feeding and checks for postpartum depression. The baby is registered in the family health center and receives, according to schedule, immunizations for 11 conditions.

tinuity and strategic direction for the HTP, mobilized provincial leadership, and addressed implementation challenges as they arose.

Turkey's experience offers five key lessons. First, universal health coverage may be best achieved through comprehensive improvements combining demand-side changes (health insurance) with supply-side changes (increased human resources and strong primary care). Second, reforms should be carefully sequenced, with flexible implementation informed by public receptivity to change. In Turkey, major policies were implemented when the sociocultural, economic, and political contexts were favorable, and tactical changes, such as reduced copayments and expanded choice of providers, were used to improve users' experience of the health system, increasing their satisfaction and support.

Third, implementation is facilitated when the transformation team works closely with field coordinators, who oversee day-to-day operations and gather real-time intelligence to rapidly address implementation bottlenecks by refining the scope, speed, and sequence of reforms. Turkey's transformation team drew on international experience and collaborated with agencies including the World Bank, the World Health Organization, and the Organization for Economic Cooperation and Development.

Fourth, it's important to focus on improving the system's responsiveness to citizens; public support provided legitimacy for Turkey's reforms and helped to overcome opposition. And fifth, swift policy formulation and decision making and carefully sequenced implementation can fend off organized opposition and bureaucratic resistance to reform.

But the sustained success of this new program faces hazards. Expectation of good government helped change the balance of power in Turkey in 2002. The transformations that advanced a right to health have increased expectations for an accountable, transparent, responsive executive. Citizens and opposition groups are better organized to scrutinize Turkey's health system, and the electorate has become more polarized. Problems in neighboring Iran, Iraq, Syria, Russia, and Ukraine threaten Turkey's political stability, and concerns regarding human rights, citizens' ability to voice grievances, and the growing democratic deficit exacerbate this fragility.

The continued global economic crisis and financial-market volatility threaten Turkey's strong economic growth, which is critical to sustaining investments in a health system facing increasing burdens of chronic illness and disability. To transition from a middle-income to a high-income country, Turkey needs to create a knowledge economy in which the health system plays a major part, but the life-sciences industry, universities, and the health system are not yet collaborating to generate meaningful research, development, and innovation.

Moreover, the reforms alienated many health care professionals. In designing and implementing reforms, the health ministry didn't always accommodate the views of such opponents, who have questioned the integrity of the ministry's data; more inclusive, broad-based reforms could foster a committed workforce and create an environment of shared values based on collaboration.

Turkey's experience shows that with committed leadership, mid-

dle-income countries can achieve universal health coverage and simultaneously improve population health, financial risk protection, and user satisfaction — health system goals to which all countries should aspire.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

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Reduced-Nicotine Cigarettes — A Promising Regulatory Pathway

Michael Fiore, M.D., M.P.H., M.B.A., and Timothy Baker, Ph.D.

Related article, p. 1340

In 1976, tobacco researcher Michael Russell wrote that "People smoke for the nicotine but they die from the tar"[1] — suggesting a potential regulatory pathway for eliminating the key harms arising from tobacco use. That is, by reducing or eliminating nicotine from combustible-tobacco products, we might be able to dramatically reduce their use and smokers' dependence on them, averting the harm they caused.

More than 30 years later, in June 2009, President Barack Obama signed legislation that permits the reduction of levels of nicotine, tobacco's primary addictive agent. Section 917 of the Family Smoking Prevention and Tobacco Control Act states that the Tobacco Products Scientific Advisory Committee of the Food and Drug Administration (FDA) shall provide advice, information, and recommendations to the secretary of health and human services on several issues, including "the effects of the alteration of the nicotine yields from tobacco products" and "whether there is a threshold level below which nicotine yields do not produce dependence on the tobacco product involved." The legislation also contains a provision that prohibits the FDA from "requiring the reduction of nicotine yields of a tobacco product to zero."

Benowitz and Henningfield first proposed a systematic reduction in nicotine content as a means of weaning Americans off cigarettes, estimating in 1994 that a limit of 0.4 to 0.5 mg of nicotine per cigarette might prevent or limit the development of addiction.[2] Such very-low-nicotine cigarettes would be fundamentally different from earlier "light" or "low-tar-and-nicotine" cigarettes in that the tobacco itself would contain so little nicotine that smokers could not extract substantial levels no matter how they smoked. By contrast, "light" cigarettes developed and marketed by the tobacco industry in the 1970s and 1980s included design features for which smokers could compensate (e.g., by covering ventilation holes) in order to obtain more nicotine.

A nicotine-reduction proposal put forth by Benowitz and colleagues in 1998 was intended to both prevent the development of tobacco dependence among young people and wean current smokers off cigarettes. Its premise, supported by considerable research, was that smokers would not smoke very-low-nicotine cigarettes over the long term.[3] The proposed reduction was to occur gradually, so as to minimize the hardship of withdrawal in current smokers. Recent research, however, suggests that a long weaning period may be unnecessary. In addition, given evidence that if other combustible tobacco is available, smokers will use it to supplement low-nicotine cigarettes,[4] a nicotine-reduction policy would probably have to encompass all types of combustible tobacco.

Reducing the nicotine content of combustible tobacco is not without risks. For instance, people who are already addicted to conventional cigarettes might compensate for reduced nicotine yield by smoking more cigarettes or smoking them more intensively. Such compensation might increase smokers' exposure to the harmful toxicants of combusted tobacco, including tar, carbon monoxide, and other carcinogens. However, studies, including the one by Donny et al. in this issue of the *Journal* (pages 1340–1349),