

Resolve to Save Lives

*Partnering with Countries to Scale Up
Cardiovascular Disease Prevention*

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When does

$50 + 30 + 0 = 100?$

Globally, we can save
100 million lives over
the next 30 years



Increase global control of
blood pressure from 14% to
50%



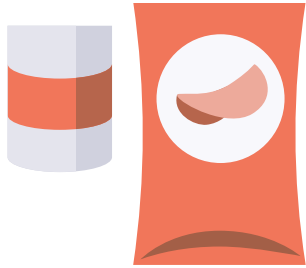
Reduce global dietary sodium
intake by
30%



Eliminate artificial trans fats
0%

Cardiovascular Health

A Global Movement Gains Momentum



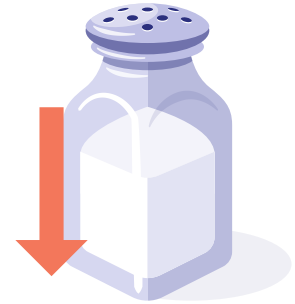
REPLACE trans fat

Eliminate toxic contaminant from global food supply



Hypertension treatment

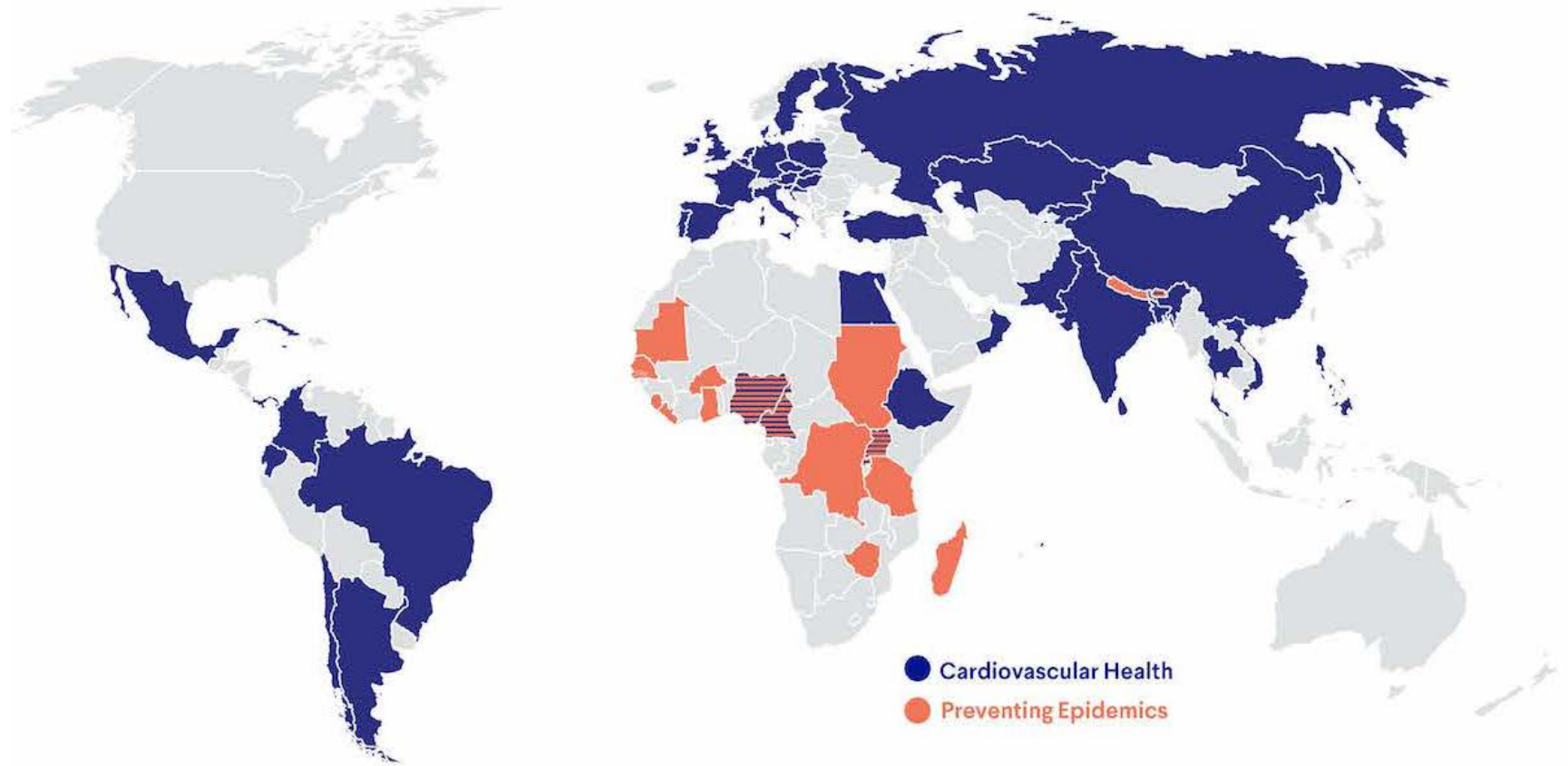
New programs in India, China, Thailand, Bangladesh, Vietnam, many Latin American countries



Sodium reduction

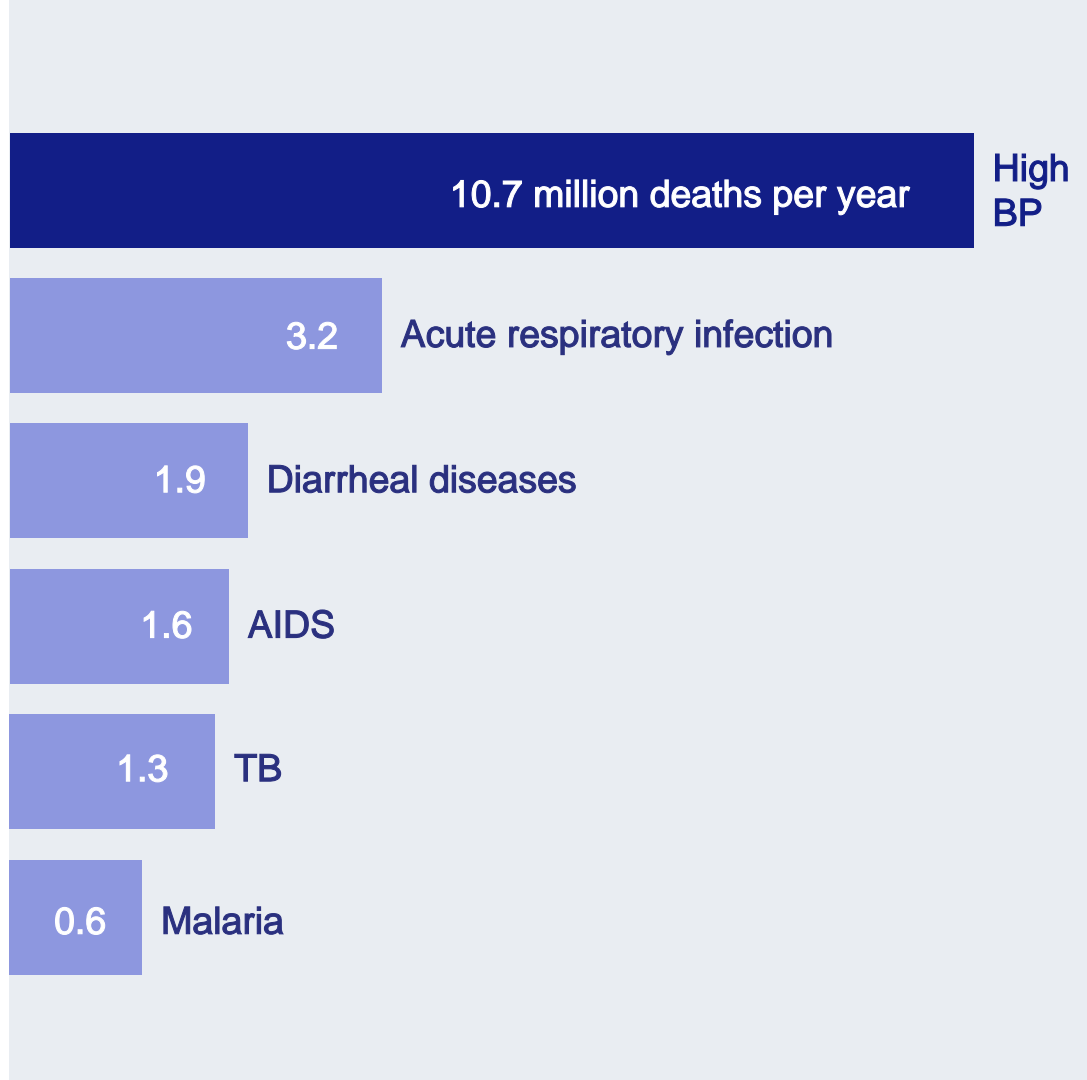
Best practices from Chile, South Korea, United Kingdom

Resolve to Save Lives' Global Activities



Hypertension is the leading risk factor for preventable deaths worldwide.

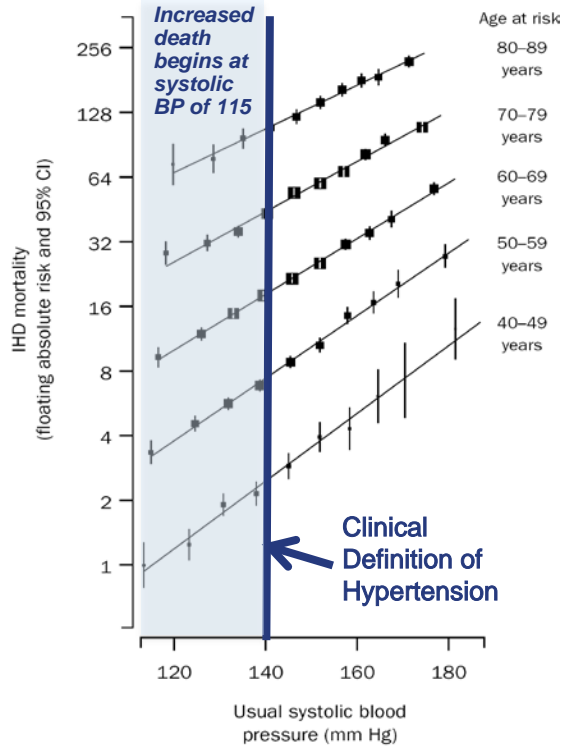
It kills more than any other condition and more than all infectious diseases combined.



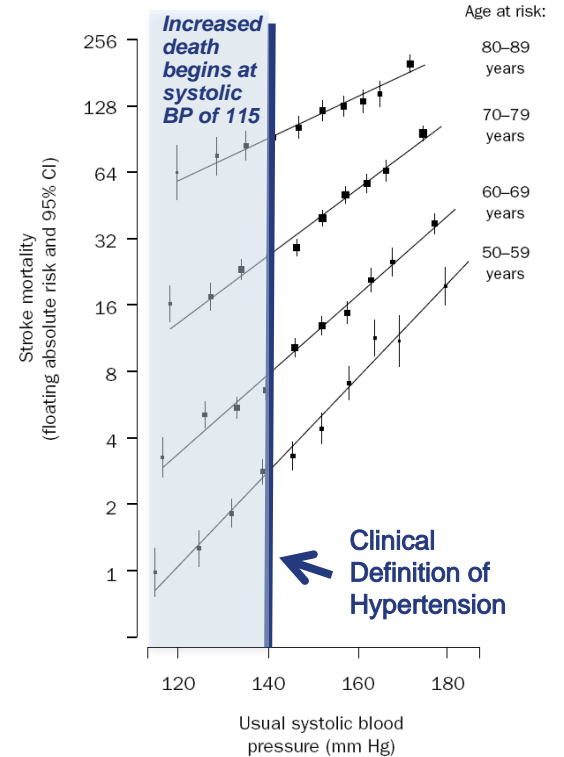
For every 20 mm Hg increase in systolic blood pressure, stroke and heart disease mortality doubles

Beginning at systolic BP of 115!

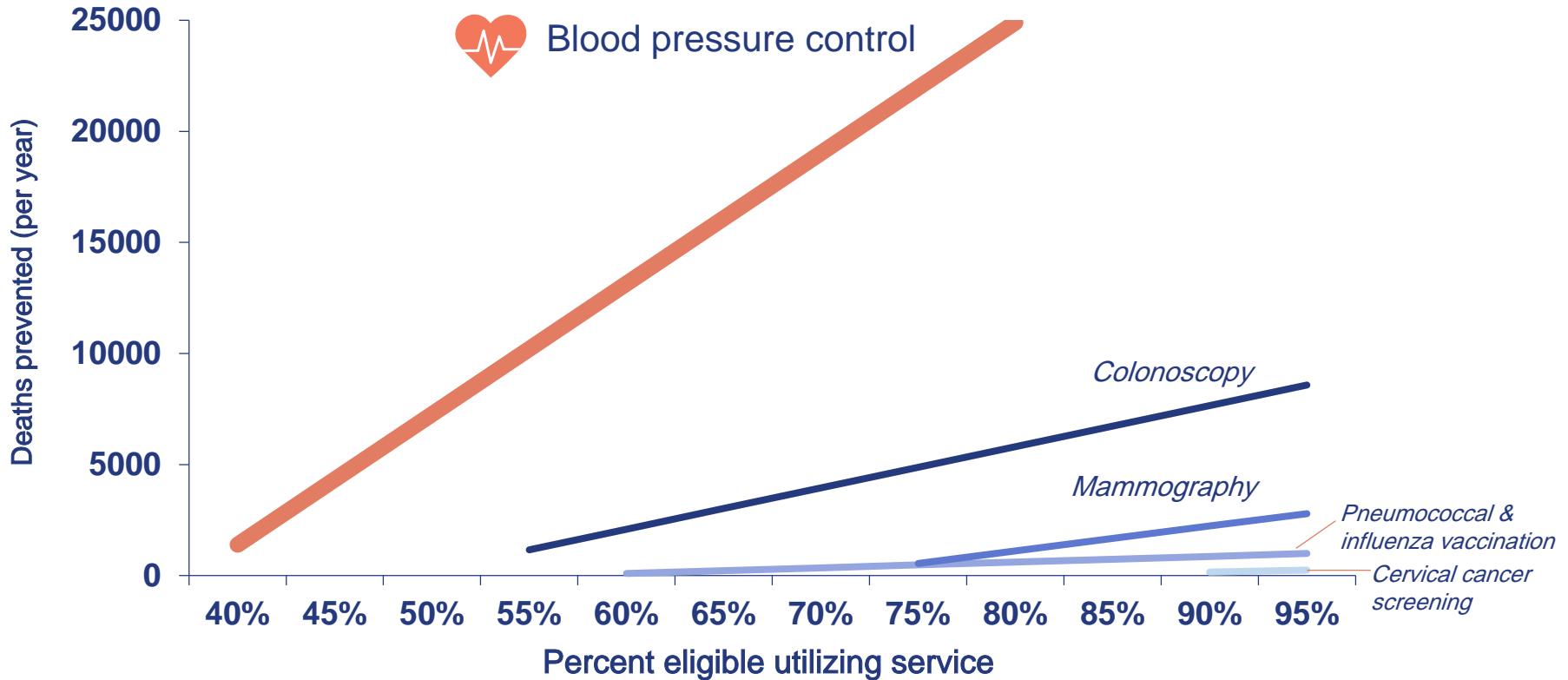
Ischemic Heart Disease mortality



Stroke Mortality

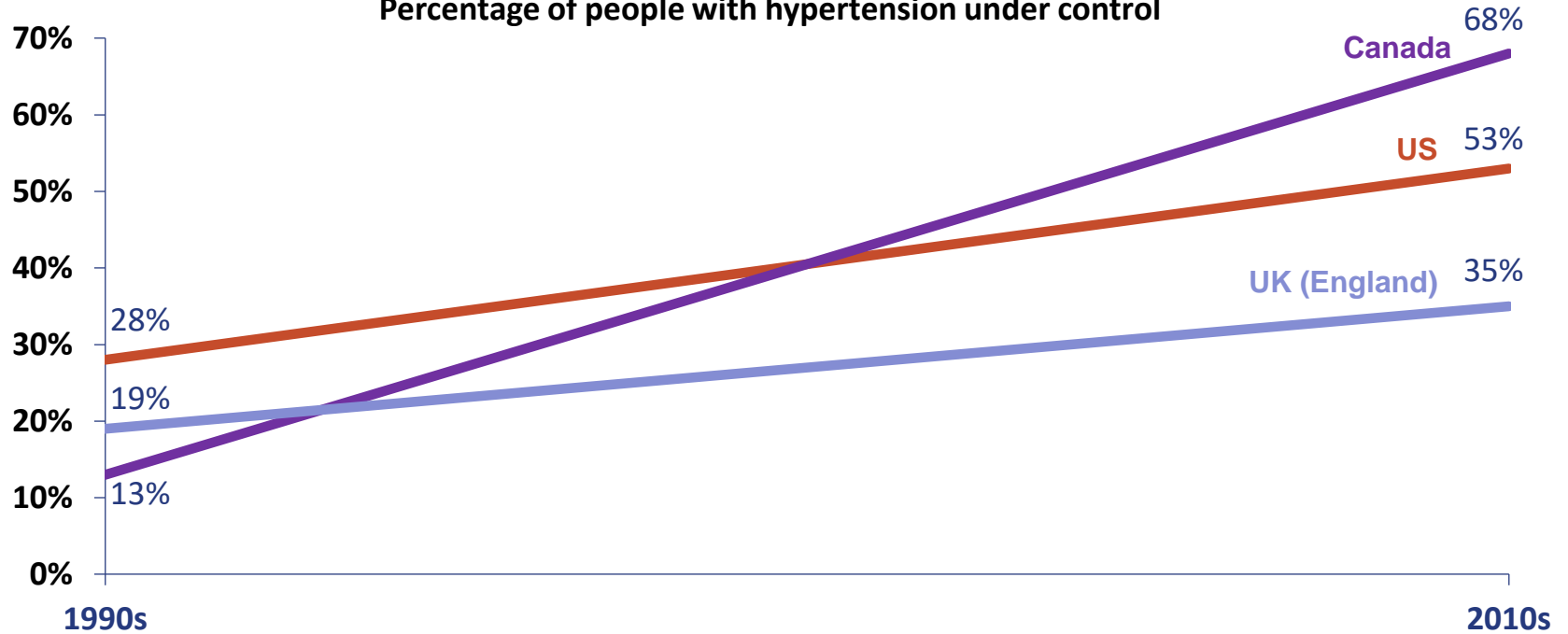


Of All Adult Primary Care Interventions, Improvement in Hypertension Control Can Save the Most Lives



Some Countries Do Better than Others

Hypertension control in the US, Canada, and the UK
Percentage of people with hypertension under control

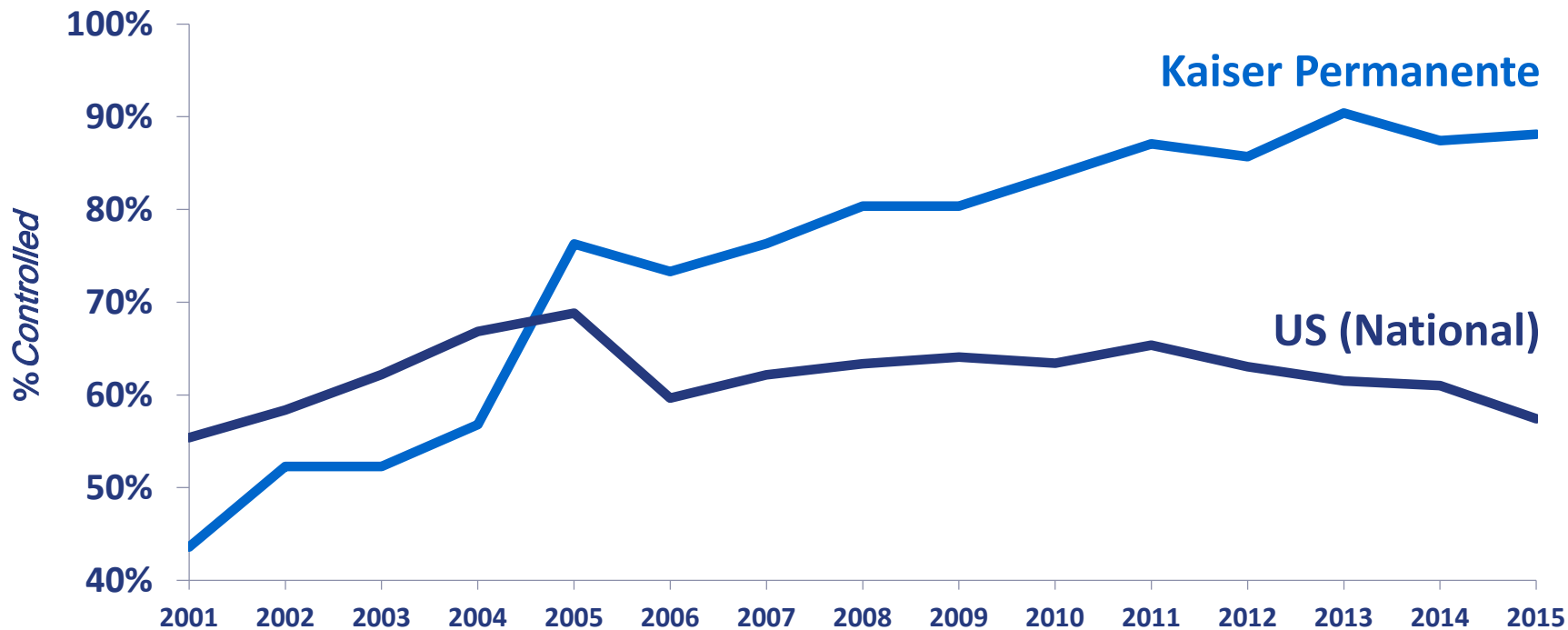


Data for Canada: McAlister et al. *CMAJ*, June 14, 2011, 183(9) & Padwal RS et al. *Can J Cardiol* 2016;32:687-694.

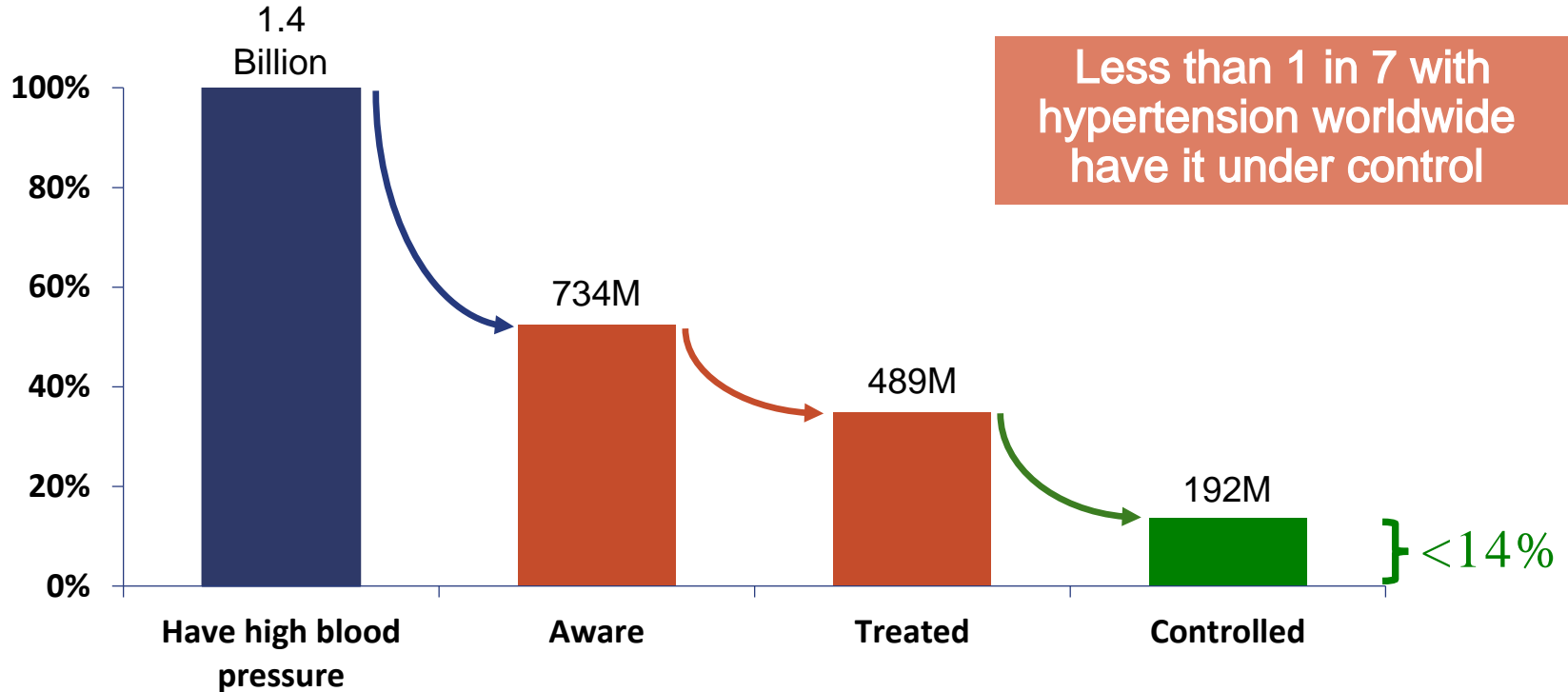
Data for UK: Ramsey et al. *BMJ* 1999;319:630-635 & Health Survey for England 2015.

Data for US: CDC Vital Signs, Sept. 2012; NHANES 2003-2010 & NCHS Data Brief 220, November 2015.

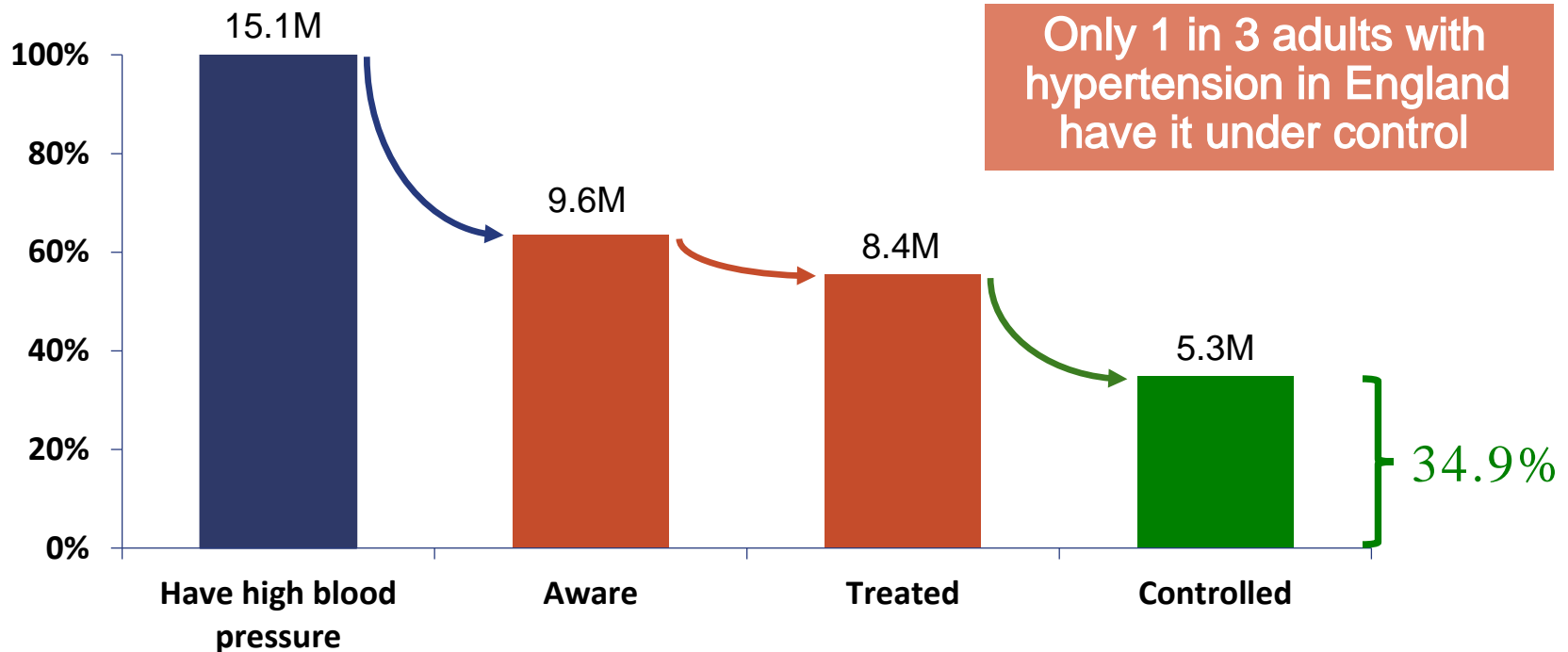
Some Health Systems Do Better than Their Countries



Most People With Hypertension Globally Do Not Have It Under Control



3 in 10 of England's Adults Have Hypertension – And 5 Million People with Hypertension are Hiding in Plain Sight



Hurdles to Blood Pressure Control



DIAGNOSIS

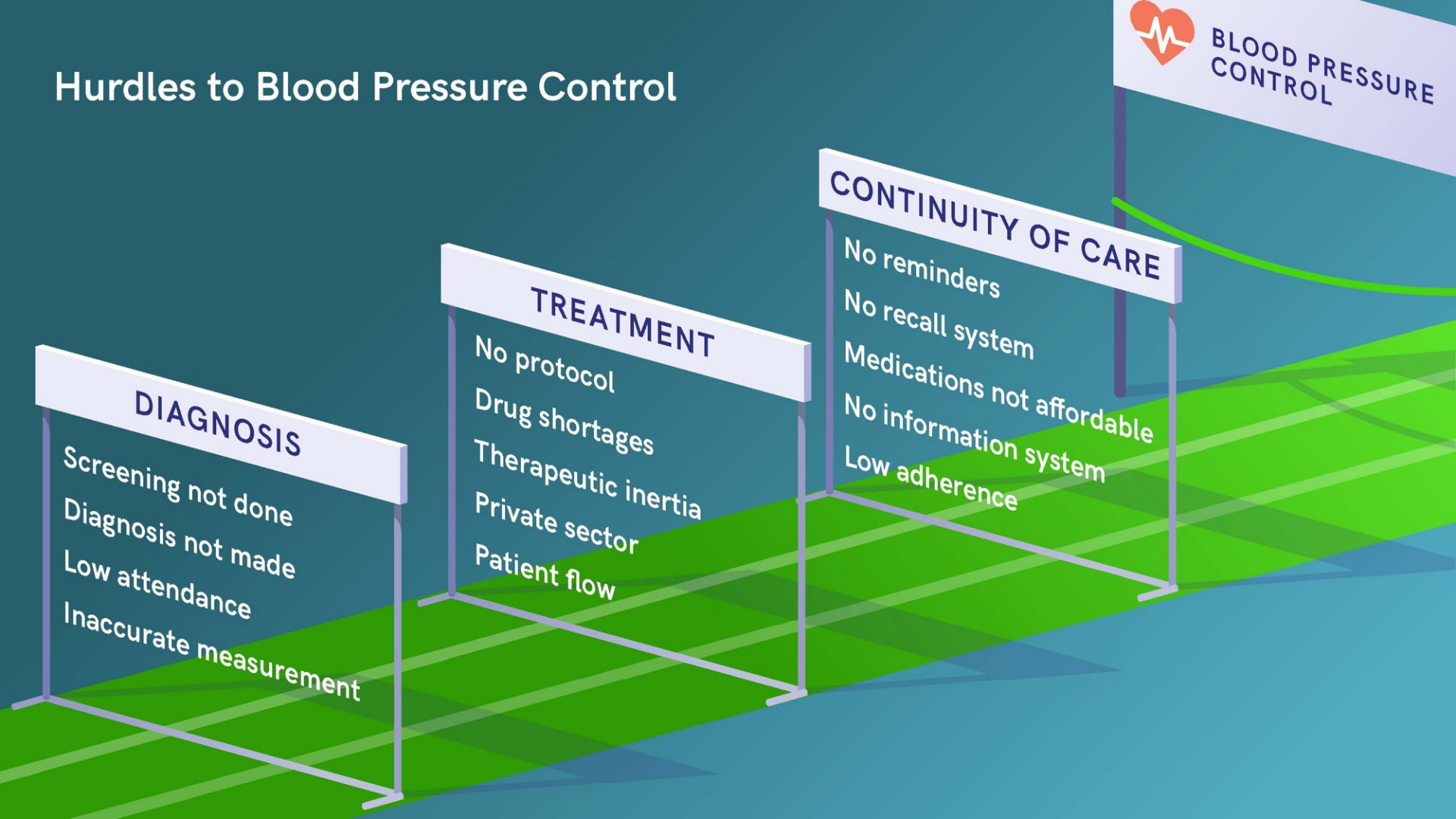
- Screening not done
- Diagnosis not made
- Low attendance
- Inaccurate measurement

TREATMENT

- No protocol
- Drug shortages
- Therapeutic inertia
- Private sector
- Patient flow

CONTINUITY OF CARE

- No reminders
- No recall system
- Medications not affordable
- No information system
- Low adherence

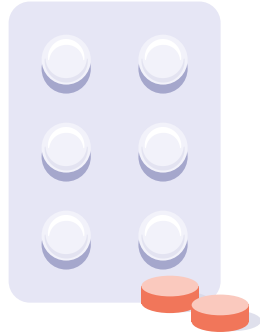


Effective Hypertension Care As Pathfinder for Universal Health Coverage



Simple, Practical Protocol

Manage other chronic conditions; improve evidencebased care; reduce costs



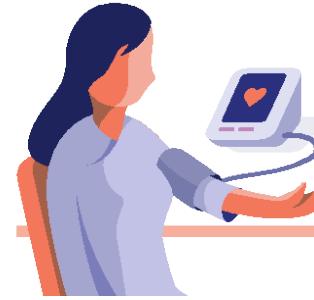
Medication and Equipment Supply

Improve purchasing and supply chain management



Team-Based Care

Applicable to wide range of chronic health conditions



Patient -Centered Services

Improve patient support; access to and confidence in primary care; reduce reliance on hospital care; reduce financial and other barriers



Information Systems

Create feedback loops applicable to other conditions; strengthen data-driven culture of accountability and quality improvement

Treatment Protocols Improve Outcomes

- Precise protocols to establish standard treatment of patients
- Drug- and dose-specific, with schedule for titration or addition of medications if blood pressure not controlled
- Eases logistics, training, task-sharing, financing, supervision, evaluation, and future changes
- >15 consensus conferences, >10 countries – common themes

Treatment protocol: Punjab

Punjab

Hypertension Protocol



Measure blood pressure of **all adults over 18 years**

High BP: SBP \geq 140 or DBP \geq 90 mmHg

- Step 1** If BP is high:
Prescribe Amlodipine 5mg
- Step 2** After 30 days* measure BP again. If still high:
Increase to Amlodipine 10mg
- Step 3** After 30 days* measure BP again. If still high:
Add Telmisartan 40mg
- Step 4** After 30 days* measure BP again. If still high:
Increase to Telmisartan 80mg
- Step 5** After 30 days* measure BP again. If still high:
Add Chlorthalidone 12.5mg**
- Step 6** After 30 days* measure BP again. If still high:
Increase to Chlorthalidone 25mg**

... After 30 days measure BP again. If still high:
Check if the patient has been taking medications regularly and correctly. If yes, refer to a specialist.

- * If SBP \geq 180 or DBP \geq 110, refer patient to a specialist after starting treatment.
If SBP 160-179 or DBP 100-109, start treatment on the same day.
If SBP 140-159 or DBP 90-95, check on a different day and if still elevated, start treatment.
- ** Dose of anti-hypertension medications can be titrated at 15 days frequency if required.
- ** Hydrochlorothiazide can be used if Chlorthalidone is not available (25 mg starting dose, 50 mg intensification dose).

Pregnant women and women who may become pregnant

- ▲ DO NOT give Telmisartan or Chlorthalidone.
- Statins, ACE inhibitors, angiotensin receptor blockers (ARBs), and thiazide/thiazide-like diuretics should not be given to pregnant women or to women of childbearing age not on effective contraception.
- Calcium channel blocker (CCB) can be used. If not controlled with intensification dose, refer to a specialist.

Diabetic patients

- Treat diabetes according to protocol.
- Aim for a BP target of < 140/90 mmHg.

Heart attack in last 3 years

- Add beta blocker to Amlodipine with initial treatment.

Heart attack or stroke, ever

- Begin low-dose aspirin (75mg) and statin.

People with high CVD risk

- Consider aspirin and statin.

Chronic kidney disease

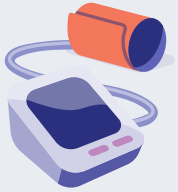
- ACEI or ARB preferred if close clinical and biochemical monitoring is possible.

Lifestyle advice for all patients

- Avoid tobacco and alcohol
- Exercise 2.5 hr/week
- Reduce salt under 1 tsp/day
- Eat less fried foods
- Eat 5 servings of fruits and vegetables per day.
- Avoid papads, chips, chutneys, dips, and pickles.
- Use healthy oils: E.g. sunflower, mustard, or groundnut.
- Limit consumption of foods containing high amounts of saturated fats.
- Avoid added sugar.
- Reduce weight if overweight.
- Reduce fat intake by changing how you cook:
 - Remove the fatty part of meat
 - Use vegetable oil
 - Boil, steam, or bake instead of fry
 - Limit reuse of oil for frying
- Avoid processed foods containing trans fats.



Primary health care most needed, most neglected



Providing effective hypertension treatment services *requires* and *facilitates* establishment of effective primary health care systems

Universal health coverage must be more than a slogan



Excessive Salt Increases Blood Pressure

99% of adults worldwide are above the WHO recommendation of 5g of salt per day

1.6 MILLION Lives could be saved each year by reducing sodium intake by 30%

Sodium Reduction



HIGH IN SODIUM
Ministry of Health

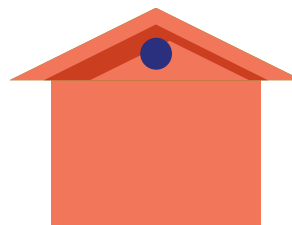
Chile model



Low sodium salts,
industry
engagement



Food-specific
targets as in
United Kingdom



Government
buying standards



Educational
approaches

Intervention Strategies Depend on the Sources of Salt



PACKAGED FOOD

- Front-of-pack warnings
- Reformulation by industry



AWAY-FROM-HOME FOOD

- Food procurement policies
- Interventions that address restaurants and vendors



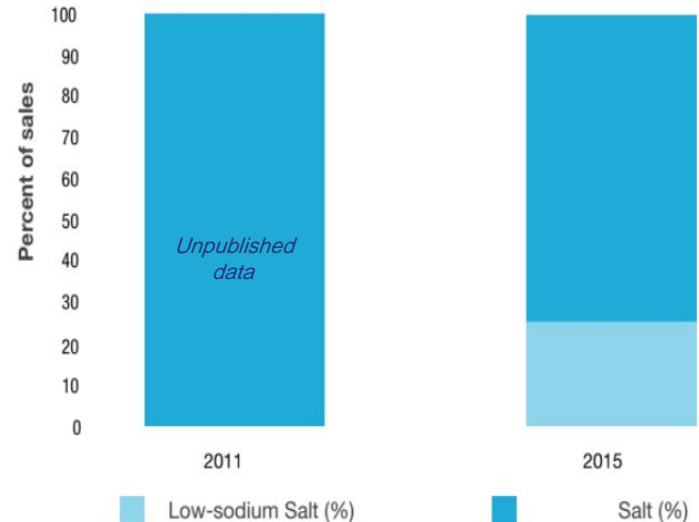
HOME

- Behavior change campaigns
- Promotion of low-sodium salt substitutes

Salt Substitutes

- Salt substitutes reduce blood pressure
 - 5.5 mmHg Systolic BP / 3 mmHg Diastolic BP
- Subsidies work
 - +30% increase in use compared with promotion alone
- Strong evidence of benefit
 - Kitchens in retirement home randomized to either regular sodium chloride or 50/50 potassium chloride/sodium chloride
 - Potassium salt group
 - 41% less likely to die of CVD
 - Spent less on health care

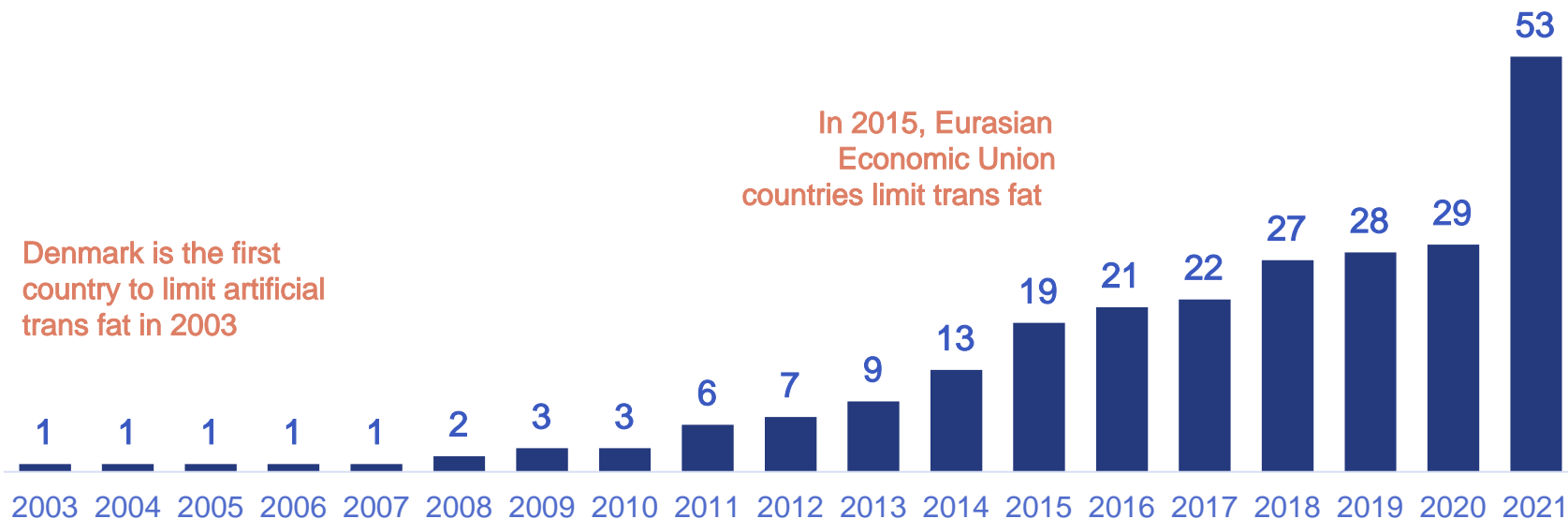
Sales of low-sodium salt increased during Shandong Province Initiative



Global Trans Fat Elimination Is Gaining Momentum

At this pace, global elimination is achievable by 2023

In 2021, trans fat limits go into effect in the European Union



Public Food Procurement Policies for a Healthy Diet

Require healthy nutrition standards for all food and beverages

- Purchased or subsidized with government funds
- Served or sold by government agencies either directly by the government itself or through private vendors or caterers



Promote Core Nutrition Standards

- ✗ Trans-fat
- ✗ Sugar-sweetened beverages

↓ Sodium
↓ Sugar
↓ Saturated fat

↑ Fruit and vegetables
↑ Whole grains



Venues

Government Settings

- Hospitals
- Schools
- Childcare centers
- Military bases
- Prisons
- Public parks and community centers
- Senior programs

Government Retail Outlets

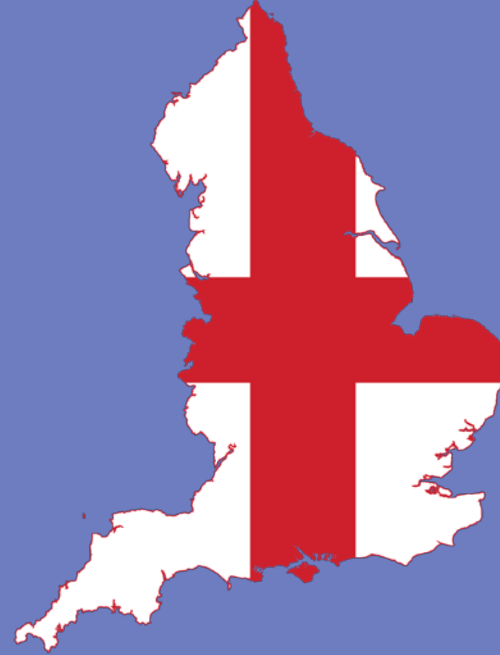
- Cafeterias/Canteens
- Vending machines
- Kiosks, tuck shops

10 Lessons from Our First 2½ Years

- 1 Intense interest from countries:** Don't need convincing, need partnership, technical support, funds
- 2 World Health Organization:** Branding/reputation key, implementation often delayed
- 3 World Bank:** Funding key, spending is difficult
- 4 Resolve is doing more direct implementation** and sub-granting with a wider range of partners than anticipated
- 5 Donor flexibility** has been crucial for rapid progress
- 6 In-country teams** essential for rapid progress and to build capacity
- 7 For sodium reduction and blood pressure treatment, industry engagement has so far been unfruitful**
- 8 We can accelerate progress, but there are partner, country, and topical speed limits**
- 9 Prototyping** is powerful and has helped build a revolutionary digital tool for blood pressure treatment and has potential for other areas
- 10 Improving hypertension treatment requires and facilitates** improved primary health care

ENGLAND

*A Tale of Two Countries
in CVD Prevention*



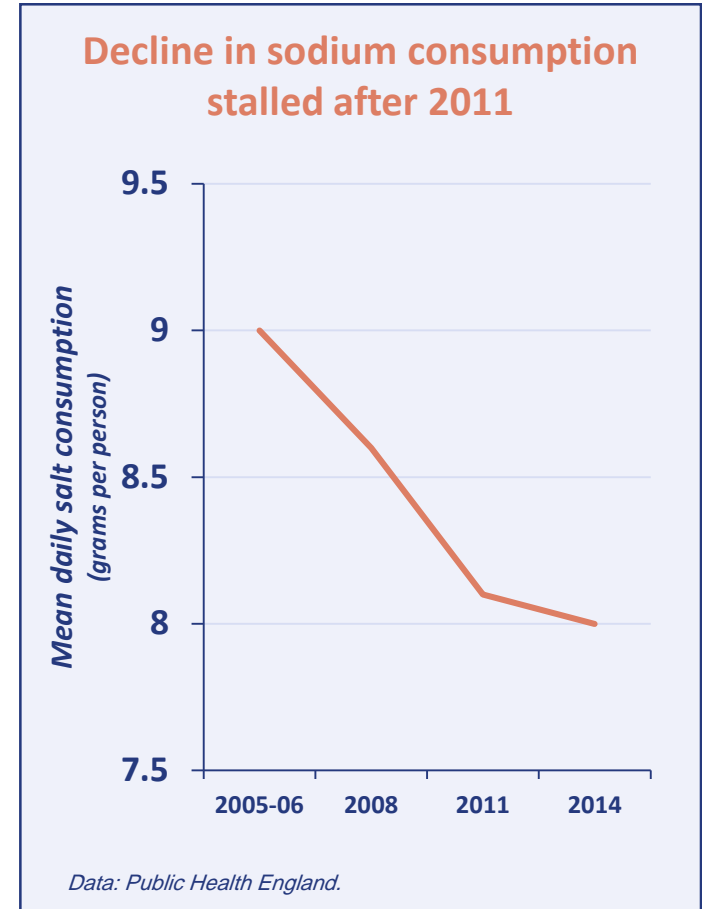


Progress

- Legacy of John Snow– father of modern epidemiology
- Dawson INTERIM Report, 1920 – outlined role and structure of future NHS
 - Recognized importance of primary care and team-based care
- NHS– a national treasure
 - Model for many country health systems
 - Most valued national institution
- University of Oxford, Imperial College and others – impressive work on CVD
- Pioneer in sodium reduction – NYC and others sought guidance from England

Unfinished Business

- Universal access to healthcare hasn't translated to high rates of hypertension control or optimal other cardiovascular prevention
- Despite strong tobacco control policies, 6 million people continue to use tobacco
- Stall in sodium reduction after initial progress appears to have resulted in thousands of additional heart attacks and strokes each year
- Unfinished business of complete trans fat elimination





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