

Introduction

Health Economics

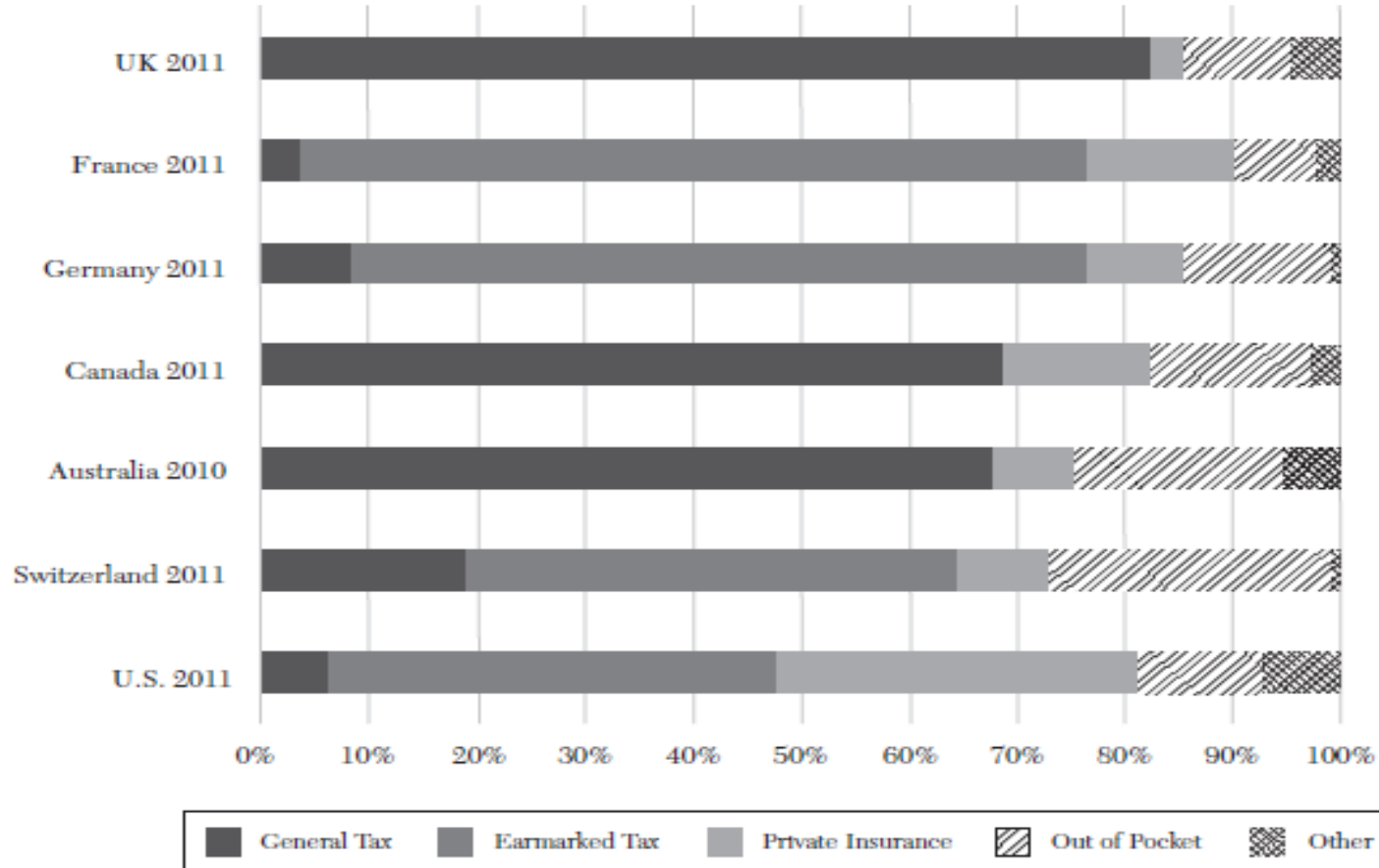
- A course in applied microeconomics, which uses microeconomics to understand the healthcare system or the market for healthcare services.
- Some issues we'll discuss include:
 - Production and Cost
 - Insurance
 - Demand and Supply

- What makes healthcare so special?
 - It's a market that contains some "unusual" features that make it slightly different from other markets.
 - Other markets might contain some of these features but not with sort of concentration as in the market for healthcare.
 - Broadly speaking, there are four principal characteristics of the market for healthcare that make it "special".

1. The Extent of Government Involvement

- In most countries the government is involved in the provision of healthcare.
 - For example, in the U.S. the government provides Medicare, health insurance for the elderly (65 and older), and Medicaid, health insurance for those receiving social assistance; all other healthcare is private or employer provided
 - In Europe, the government is deeply involved in the market for healthcare services in most countries.

Extent of Government Involvement: Selected OECD Countries



International comparison of health spending

	Canada	OECD average	Canada's OECD ranking	Canada's rank among peer countries Table 2.2 Footnote a
Total health expenditure as a % of GDP	10.2	8.9	10/34	7/11
Total health expenditure per capita	\$4,351	\$3,453	10/34	7/11
Public expenditure on health per capita	\$3,074	\$2,535	13/34	8/11
Public share of total health expenditure	70.6%	72.7%	22/34	8/11
Hospital expenditure per capita	\$1,338	\$1,316	15/29	9/9
Physician expenditure per capita	\$720	\$421	4/27	4/8
Drug expenditure per capita	\$761	\$517	2/31	2/9

Table 2.2 Footnotes

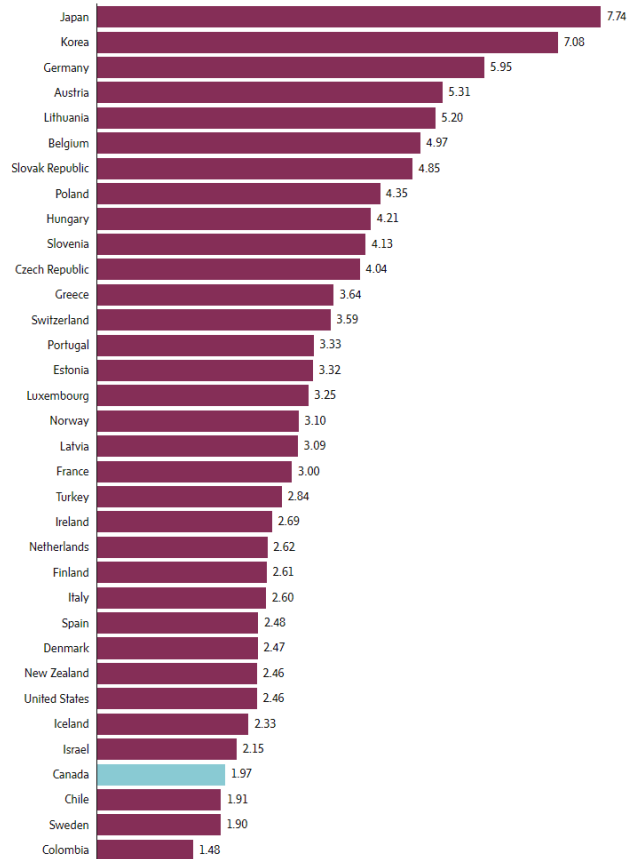
Footnote a Notes: Peer countries consist of Australia, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, US, and UK.; Rankings are ordered from highest to lowest expenditure; Based on 2013 data where available or next available preceding year; All figures are in \$US and adjusted for purchasing power parity.

Source: OECD Health Statistics 2015

[Return to footnote a referrer](#)

Comparing Canada vs Other Countries

Acute care hospital beds per 1,000 people for OECD countries
 Latest year data available, 2018 to 2020

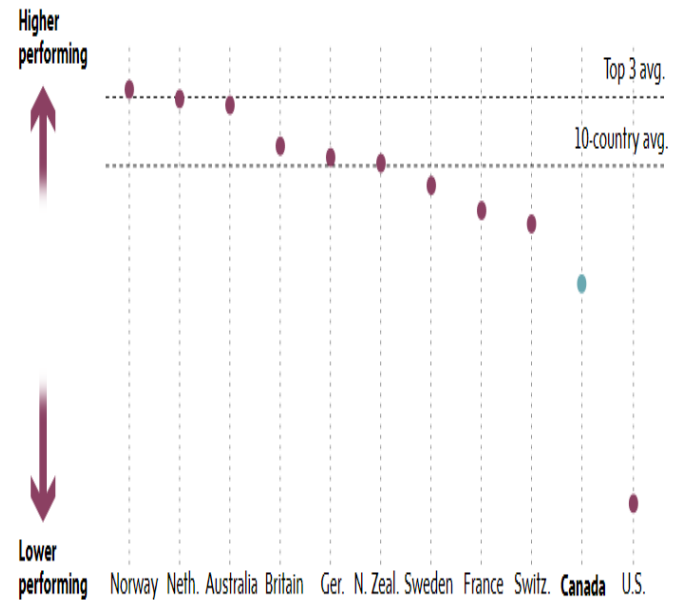


THE GLOBE AND MAIL, SOURCE: ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

DATA SHARE

Comparing health care system performances in 2021

The Commonwealth Fund, a think tank, ranked and scored the overall performance of 11 high-income countries' health care systems based on access to care, care process, efficiency, equity and outcomes. Canada ranked second-to-last, ahead of the United States.



THE GLOBE AND MAIL, SOURCE: THE COMMONWEALTH FUND

1. The Extent of Government Involvement

- In Canada, universal healthcare is provided by the government; all or almost all healthcare (physician) services are paid for by the government;
- Healthcare is cost shared by the Federal and provincial governments
 - Healthcare is usually the biggest share of the government budget
 - For example, in 2021 the government of Ontario spent about \$186.1 billion, with \$69.8 billion for health care (37.5 % of total expenditures and about \$4730 per person) and \$8.3 billion for COVID-19 expenses; in the budget for 2023-2024 fiscal year total expenditures are expected to be \$204.7 billion, with healthcare expenditure accounting for \$81 billion (39.6%).

2. Uncertainty

- Healthcare is characterized by uncertainty, which ranges from understanding who gets sick to how well treatments work:
 - How do we treat back pain?
 - Physiotherapy
 - Rest for a few days and take some advil
 - How do we treat cancer?
 - Misdiagnosis rate for medical conditions is about 40%, and has been relatively stable over time.
 - Some people might respond well to a drug others might have side effects, but don't know ahead of time how it will work out.

3. Imperfect Information

- There can be large differences in knowledge between healthcare providers and their patients, the consumers of healthcare.
 - Doctors can over prescribe treatments, which are not medically necessary; they don't necessarily reduce the health of the person but they do increase the income of the doctor.
 - How does the patient know the doctor is acting in their best interests and protect the patient?

4. Externalities

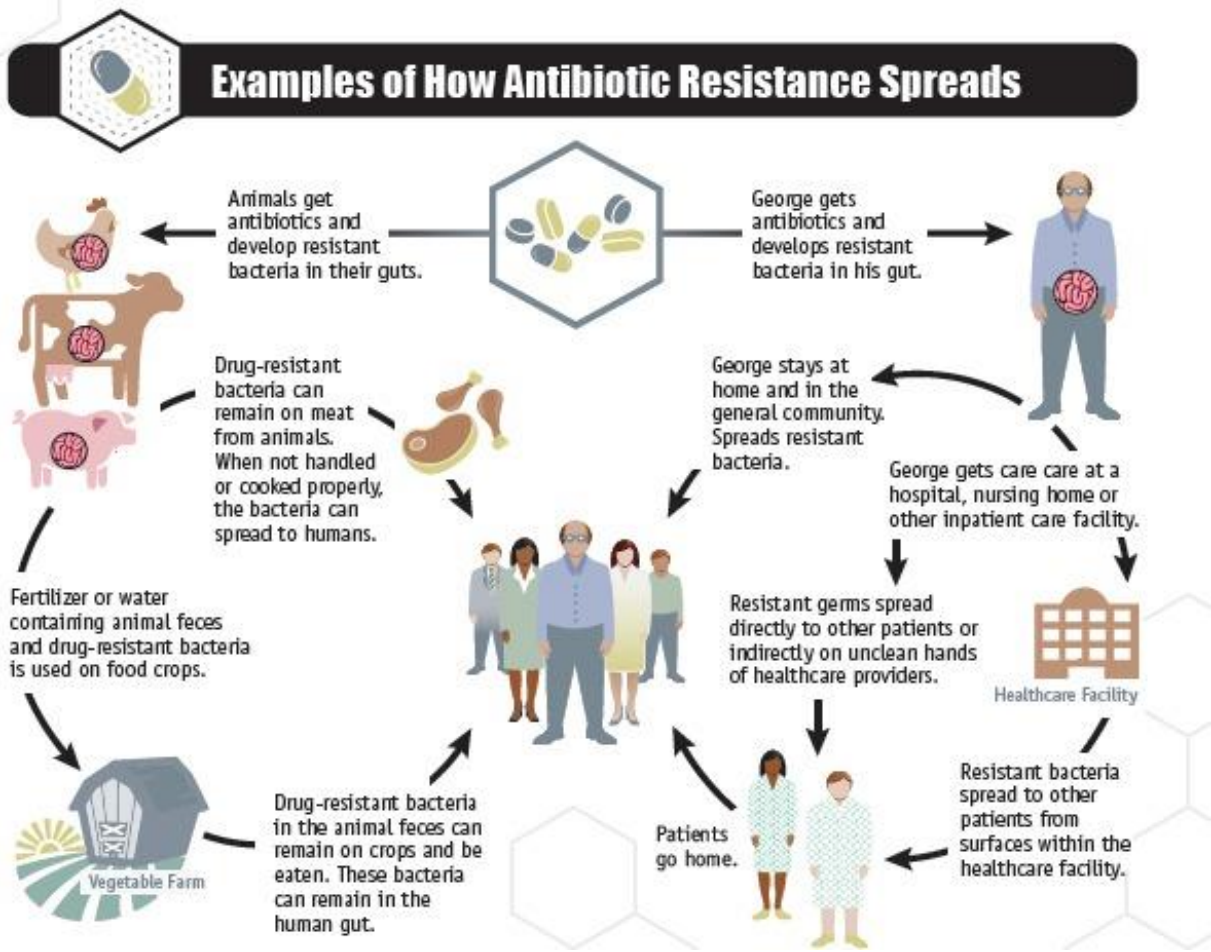
- The actions of individuals that impose costs or create benefits for other individuals.
 - Positive Externalities:
 - Public Health programs from all levels of government that reduce the spread of diseases (e.g., clean drinking water, reducing the spread of mosquito borne diseases)
 - Quarantine programs to stop the spread of disease
 - Immunization programs for children

4. Externalities

– Negative Externalities:

- Antibiotics: when an antibiotic is used there is a non-zero probability that a drug resistant strain of the virus/bacteria will develop.
- In the U.S. about 35,000 people died because of superbugs, i.e., drug resistant strains of a infection/virus in 2022; about a decade ago there were 23,000 deaths.
- How does it happen?

4. Externalities



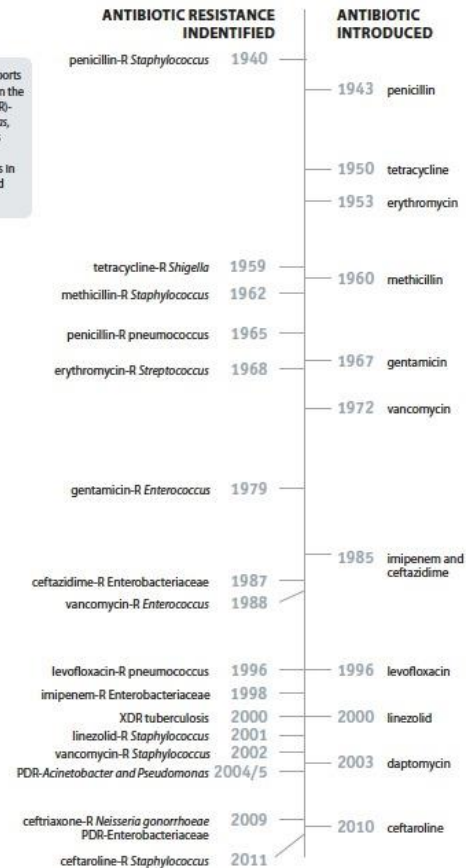
4. Externalities

- Drug resistant strains of diseases can also happen when a drug is not used properly, e.g, effective treatment of tuberculosis requires taking medication for 9 months; if a shorter treatment is used a drug resistant strain can develop.

Developing Resistance

Timeline of Key Antibiotic Resistance Events

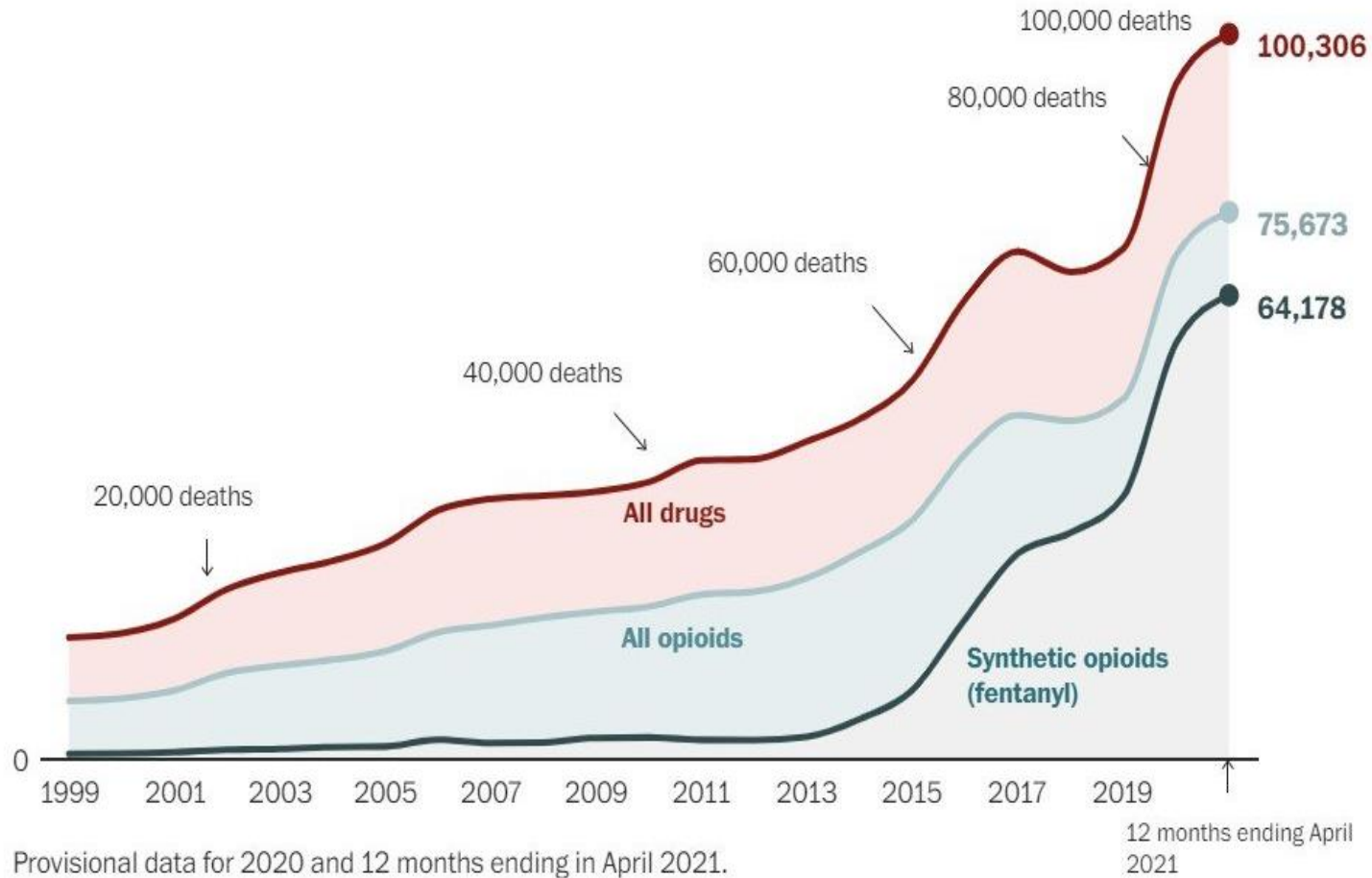
Dates are based upon early reports of resistance in the literature. In the case of pan drug-resistant (PDR)-*Acinetobacter* and *Pseudomonas*, the date is based upon reports of healthcare transmission or outbreaks. Note: penicillin was in limited use prior to widespread population usage in 1943.



4. Externalities

- Side effects from drug treatments, e.g., addiction
- Pain management
 - In the 1970s, opiates, which are derived from poppies, which are also used to create opium and heroin, were primarily given to terminally ill cancer patients to manage pain; More recently, synthetic versions of opiates, opioids, are prescribed more often to treat other sorts of chronic pain.
 - Examples of medical opiates and opioids include: Tylenol 3 with codeine; morphine; hydro-morphone (5x more potent than morphine); Actiq, a raspberry-flavoured lollipop that contains fentanyl, which is 80x more potent than morphine.
 - Deaths from opiates/ opioids have risen dramatically overtime.
 - Prescription drugs, Oxycodone, Percocet, Fentanyl (various forms) contribute much more to overdose deaths than more traditional opiates (heroine).

Drug Overdoses in US, 1999-2021



4. Externalities

- Treating ADHD
 - Amphetamines, medical equivalent of methamphetamine, i.e., crystal meth
 - The methyl group molecules in amphetamines break down into dextroamphetamine, the dominant salt the leading ADHD drug, Adderall
 - In U.S. amphetamine prescriptions total about \$10 billion, about 80% of the world's total sales.
 - In California, abuse of Amphetamines is leading cause of admission in substance abuse clinics.