

# Pharmaceuticals: Lecture Outline

## Introduction

1. Historical Development of Pharmaceuticals
2. Modern Uses & Canadian Health Care

3. Doctors & Pharmaceuticals

4. Critiques of the Medical-Industrial Complex

Conclusion

# Historical Development of Pharmaceuticals

- ‘Pharm’ – from Greek – .
- plants – standard medical curriculum until 1900 – still used, i.e. cancer drug taxol
- early use of metals as therapeutic agents, i.e. copper, mercury, sulphur

# Historical Development of Pharmaceuticals

- 20th century shift from plants to chemicals
- era of therapeutic optimism
- 1950s-60s new medical innovations & increase in sales
- Stats: by mid-1950s US drug firms marketing 400+ new drugs per year; number of prescriptions nearly 4 times 1930s

# Historical Development of Pharmaceuticals

- **1921: Canadian Dr Frederick Banting & medical student Charles Best developed insulin**
- **1923: Banting won Nobel Prize**
- **beginning of series of hormonal discoveries & treatments**

# Historical Development of Pharmaceuticals

- **1928: Alexander Fleming, London medical researcher at London Hospital – grew mould spores found to be effective against infectious disease**
- **penicillin first mass-produced antibiotic**

# Modern Uses & Canadian Health Care

- **Canadian industry worth \$2 billion**
- **Huge growth post-1940s due to antibiotic revolution + meds for psychiatric patients**
- **large scale production + increased globalization - Connaught Laboratories**
- **Profitable, low-risk manufacturing sector**

# Modern Uses & Canadian Health Care

- 300 million prescriptions written yearly in Canada
- Elderly & women mis-prescribed & over-prescribed
- 1/3 – 2/3 antibiotics unnecessary or inappropriate
- 5-23% hospital admissions from drug-related illnesses

# Modern Uses & Canadian Health Care

- Prescription drugs not under Canada Health Act
- Average Canadian family spends \$1,210. year on prescription drugs
- Drug expenditures rose from \$1.3 billion in 1980 to \$12.3 billion in 2001
- cost of drug-related hospital admissions = \$256 million to \$1 billion per year



# Doctors & Pharmaceuticals

- **Canadian doctors prescribe drugs to 21-86% office patients**
- **6-10 prescriptions given for each hospital visit**
- **doctors with higher prescription rates: males, isolated rural, solo practitioners**

# Doctors & Pharmaceuticals

- 41% Ontario doctors 'skilled' re use of antibiotics
- Pharmaceutical literature major source of information re drugs for 28% Canadian doctors
- Drug companies regularly give information, samples, gifts to doctors

- **The more likely they were to use drugs even when not using drugs was the best option**
- **The more often they sympathized with a 'commercial' view of the value of a given drug**
- **The more likely they were to prescribe antibiotics inappropriately**
- **The more likely were they to use more expensive medications when equally effective but less costly drugs were available**

# Critiques: The Medical-Industrial Complex

- Lobbying, promotion vs research
- Research focus on big-profit medications
- Costly variations on existing products

**“The development and introduction of ‘new’ drugs appears to have more to do with profitability than with medical value. From January 1988 to December 1991, a total of 271 new patented drug products were marketed in Canada for human use. Out of that number only 13, or less than 5%, were felt to be either “break through” medications or substantial improvements over existing therapies...”**

Joel Lexchin, 1991

# Critiques: The Medical-Industrial Complex

- **Role of federal government as industry regulator problematic - ties between Health Products & Foods Branch & Pharmaceutical Manufacturing Association**
- **increasing policy emphasis on market principles + globalization**
- **Canada in weak position due to branch-plant economy**

# Critiques: The Medical-Industrial Complex

- developing countries often cannot afford essential drugs, i.e. antibiotics, AIDS drugs
- drugs sometimes sent to countries without directions in native language
- drug-dumping on 3<sup>rd</sup> World - case of the Dalkon Shield IUD

# The Legacy of Thalidomide

- 125 Thalidomide babies born in Canada in 1962
- Drug not fully licensed so government liable - money paid to victims 1992
- DES synthetic estrogen hormone for women – serious health problems for 400,00 Canadian DES offspring



[http://archives.cbc.ca/health/public\\_health/topics/88/](http://archives.cbc.ca/health/public_health/topics/88/)