University Health Network

Economics, Ethics and Muda:

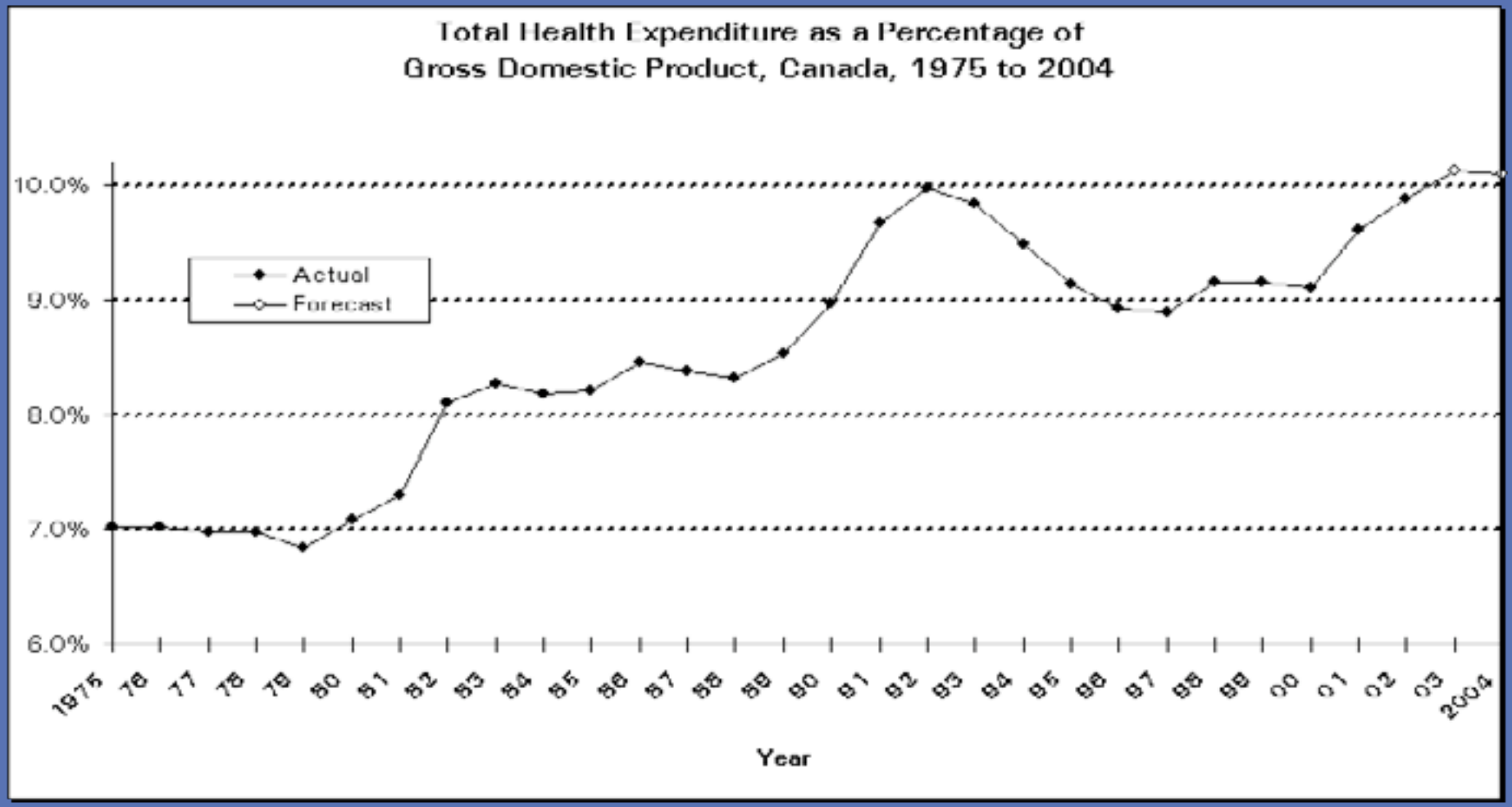
A New Appreciation for Ontario's Health Care System and Academic Health Sciences Centres?

Dr. Bob Bell, President & CEO

Breakfast with the Chiefs

October 19, 2005

Health care Spending in Canada



“What’s Good for General Motors is Good for America”

-Charles Wilson, GM Chairman, 1955 Senate hearings

GM Assembly Plant, Flint Mi., 1956

GM Assembly Plant, Flint Mi., 2001

What Ails GM?

By George F. Will, Washington Post (May 1, 2005)

"And the cost of providing health coverage for 1.1 million GM workers, retirees and dependents is estimated to be $5.6 billion this year. Their coverage is enviable -- at most, small co-payments for visits to doctors and for pharmaceuticals but no deductibles or monthly premiums. GM says health expenditures -- $1,525 per car produced; there is more health care than steel in a GM vehicle's price tag -- are one of the main reasons it lost $1.1 billion in the first quarter of 2005. Ford's profits fell 38 percent, and although Ford had forecast 2005 profits of $1.4 billion to $1.7 billion, it now probably will have a year's loss of $100 million to $200 million."

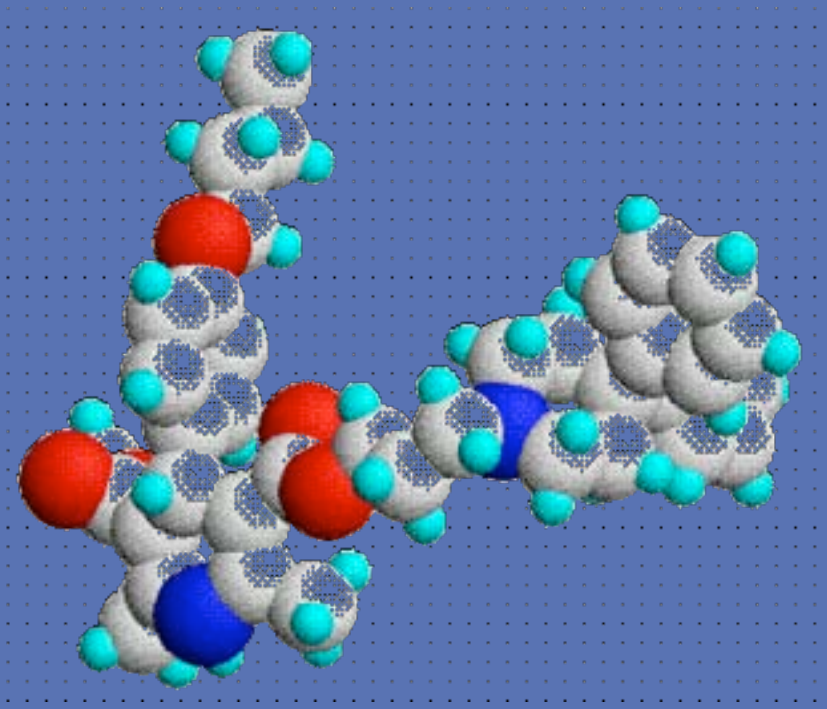
WOODSTOCK LANDS TOYOTA PLANT – Just the Beginning

As many as 9,000 spin-off jobs are expected from the huge undertaking, backed by $125 million in government money

Today's Economy

Toronto Medical Discovery Tower- The Economy of the Future?

New Drugs



THE Image-Guided Therapy GROUP

The Image-Guided Therapy (IGTx) Group

Ontario Cancer Institute, Princess Margaret Hospital, University Health Network
Departments of Radiation Physics, Radiation Medicine Program
Departments of Radiation Oncology, Medical Biophysics, University of Toronto

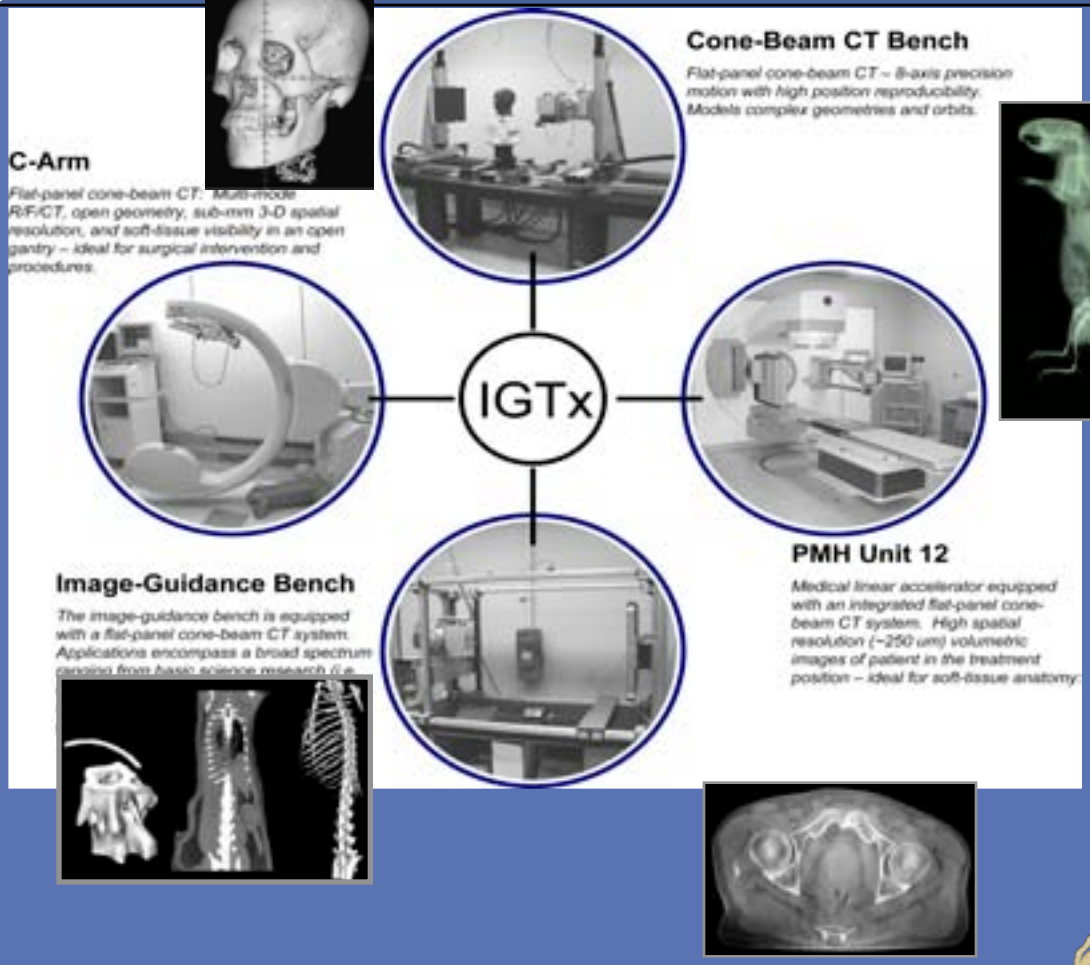
IGTx

Principal Investigators

- Dr. David A. Jaffray, Head, Radiation Physics
- Dr. Jeffrey H. Siewerdsen, Scientist, OCI

About IGTx

Contact Information



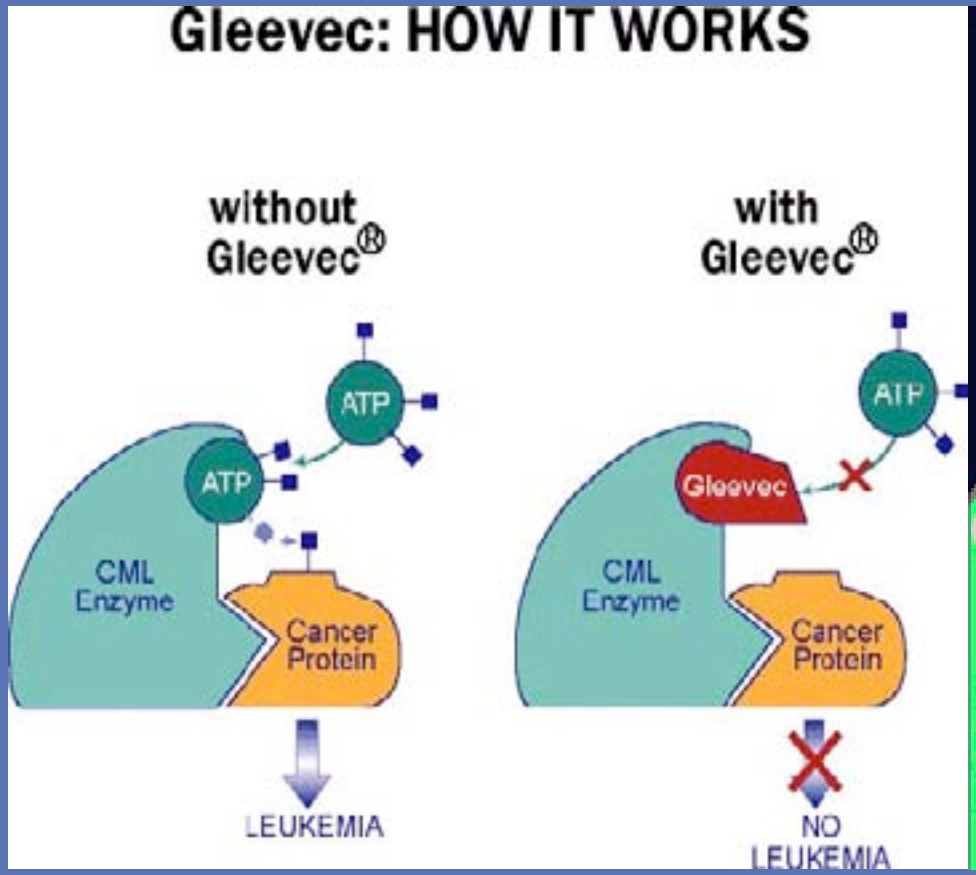
University Health Network
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

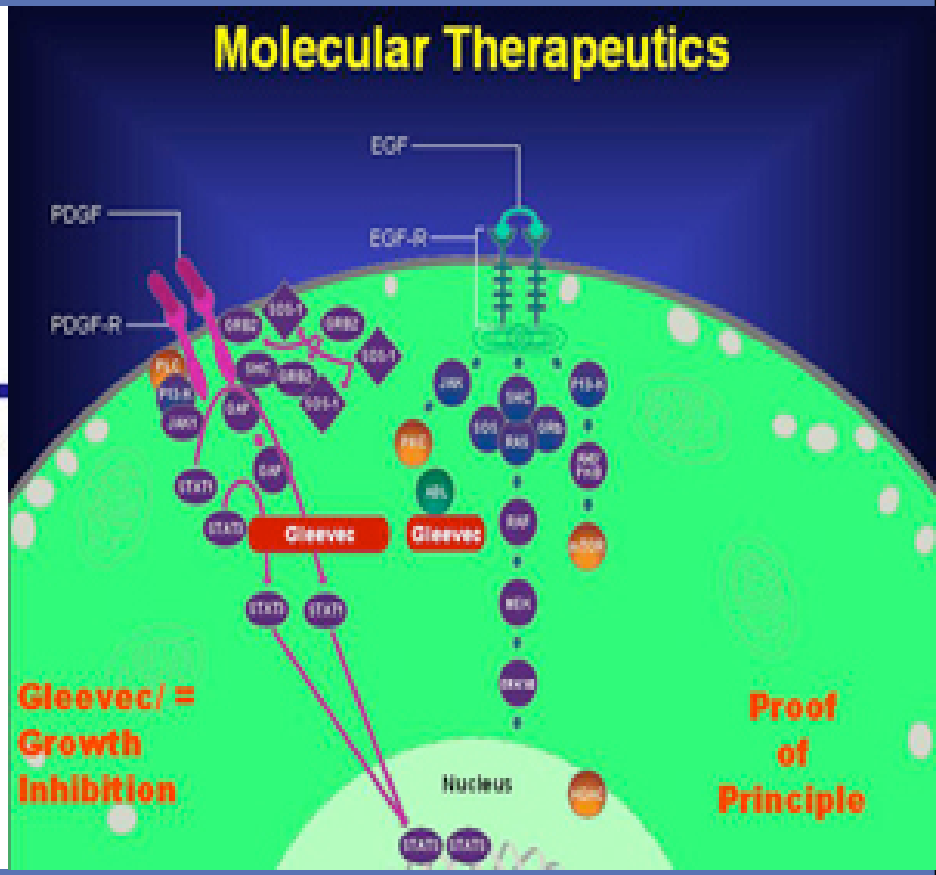
Ontario Health care System

- Our brand - an asset, not a liability
- Makes Ontario's economy competitive today
- Educated, mobile and healthy workforce
- Health science centers offer good jobs today & may offer tomorrow's economic drivers


MAY 28, 2001
TIME
THERE IS NEW AMMUNITION IN THE WAR AGAINST CANCER.
THESE ARE THE BULLETS.
Revolutionary new pills like GLEEVEC combat cancer by targeting only the diseased cells. Is this the breakthrough we've been waiting for?

Targeted Therapy

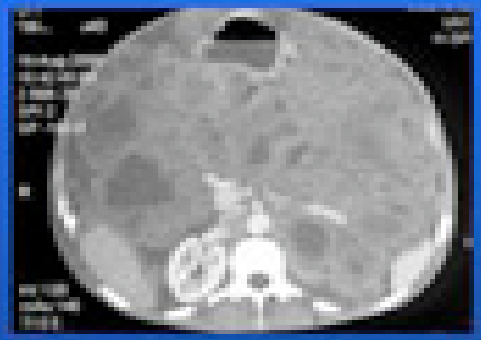




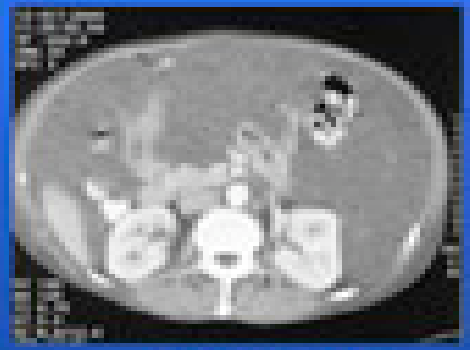
Leukemia **Sarcoma**

Sarcoma Response to Gleevec

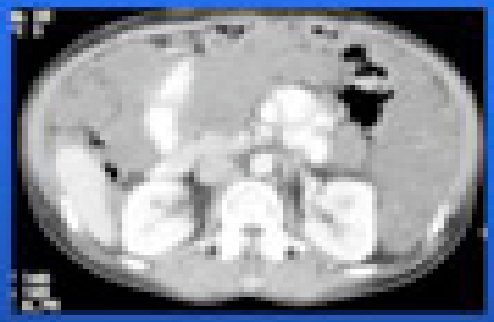
STI- Responder



baseline

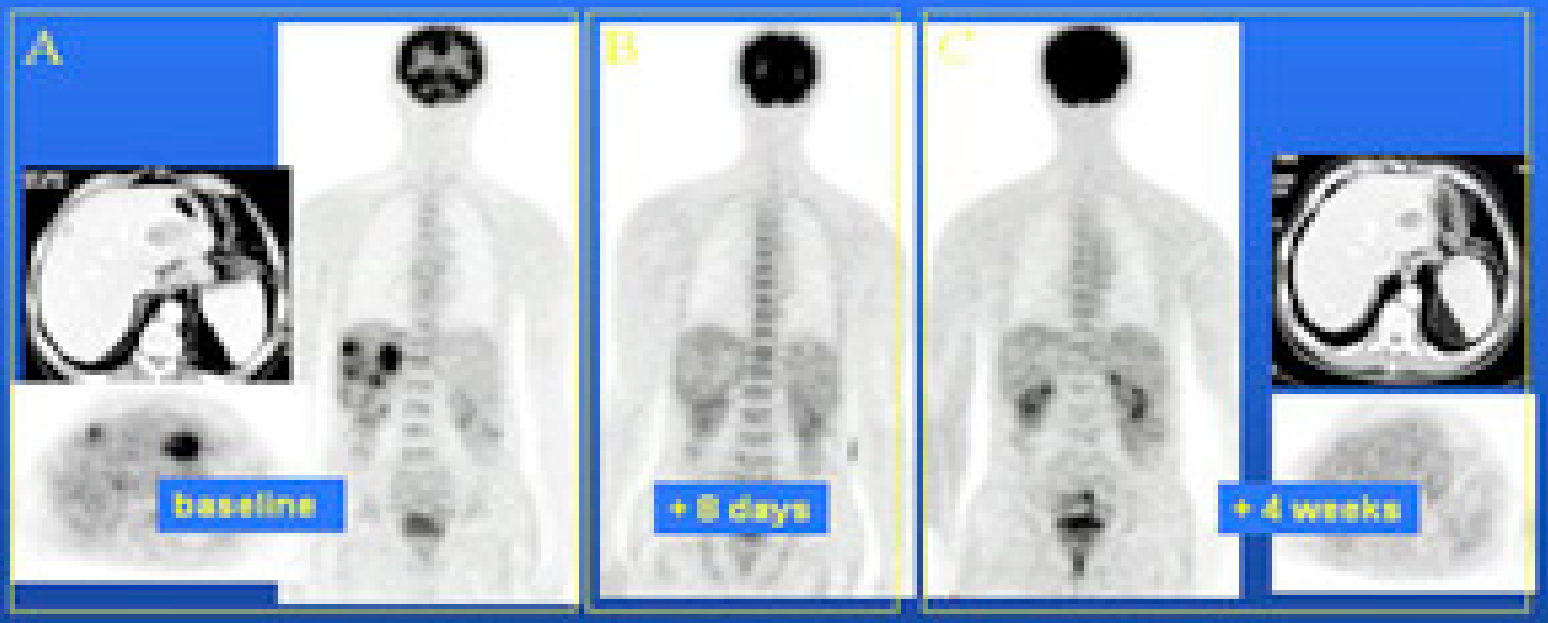


+ 8 weeks



+ 6 months

Sarcoma Response to Gleevec

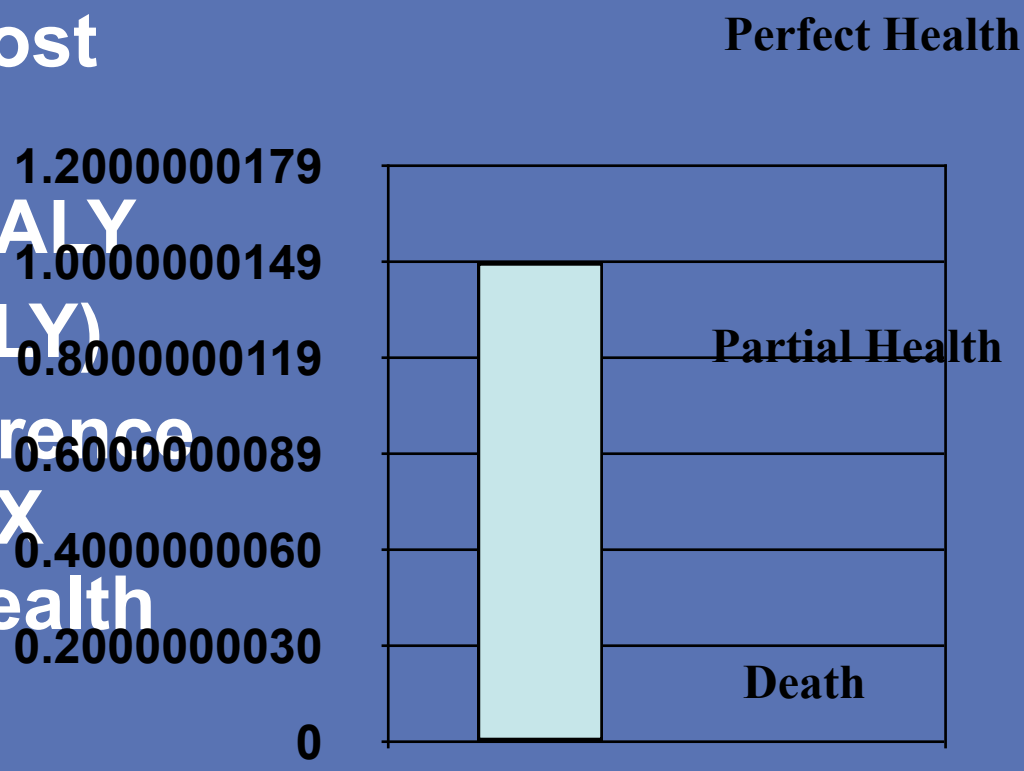


Proof of Principles

- Dissimilar cancers have common features
- Therapy targeted to molecular alterations is possible
- Cancer as chronic disease
- How do we assess cost of treatment?

Incremental Cost/QALY Gained

- Difference in cost
- Divided by difference in QALY
- (△ cost/△ QALY)
- △QALY = difference in years of life X difference in health status



Relative Benefit (NICE)

Table 4. Cost per QALY league table[1]

Intervention	Extra cost per QALY gained (1990 £)
GP advice to stop smoking	270
Hip replacement	1,180
Cholesterol testing and treatment (all adults aged 40–69)	1,480
Kidney transplantation (cadaver)	4,710
Home haemodialysis	17,260
Hospital haemodialysis	21,970
Erythropoietin treatment for anaemia in dialysis patients (assuming 10% reduction in mortality)	54,380
Neurosurgery for malignant intracranial tumours	197,780

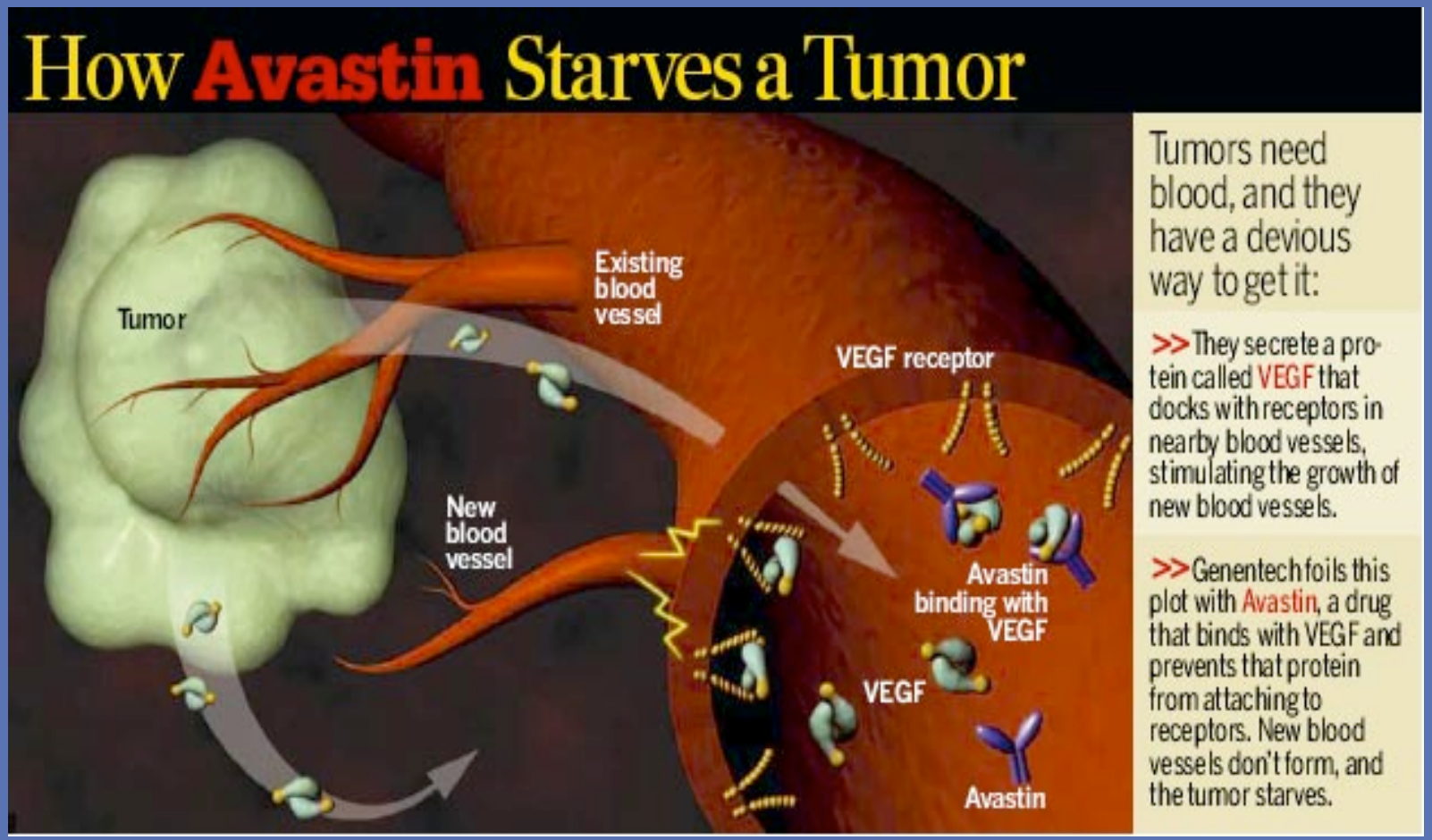
Level of Evidence Underlying Calculations

Evidence quality	Cost per QALY gained (£)			
	<£3K	£3–20K	>£20K	Negative
I. At least one randomised controlled trial	Strongly recommended	Strongly recommended	Limited support	Not supported
II. Well designed controlled trial	Strongly recommended	Supported	Limited support	Not supported
III. Expert consensus or opinion	Supported	Limited support	Limited support	Not supported
IV. Conflicting or inadequate evidence	Not proven	Not proven	Not proven	Not supported

Gleevec in GIST

- Incremental Cost- $45,000/year
- Incremental life years- 3
- Improvement Quality of Life- (.25 → 1.0)
- Incremental Cost /△ QALY= 45/4= $11,250/ QALY

Avastin - New Drug Starves Tumor Blood Supply



Avastin

- Approved for use in advanced colorectal cancer in September 2005
- Likely to cost at least $60,000 more per patient when compared to 5FU
- Survival advantage 5 months
- Assuming no degradation of quality of life - Avastin cost/QALY= 12/5 X 60,000= $144,000/QALY

Direct decompressive surgical resection in the treatment of spinal cord compression caused by metastatic cancer: a randomised trial – Roy A Patchell et al (Lancet 2005)

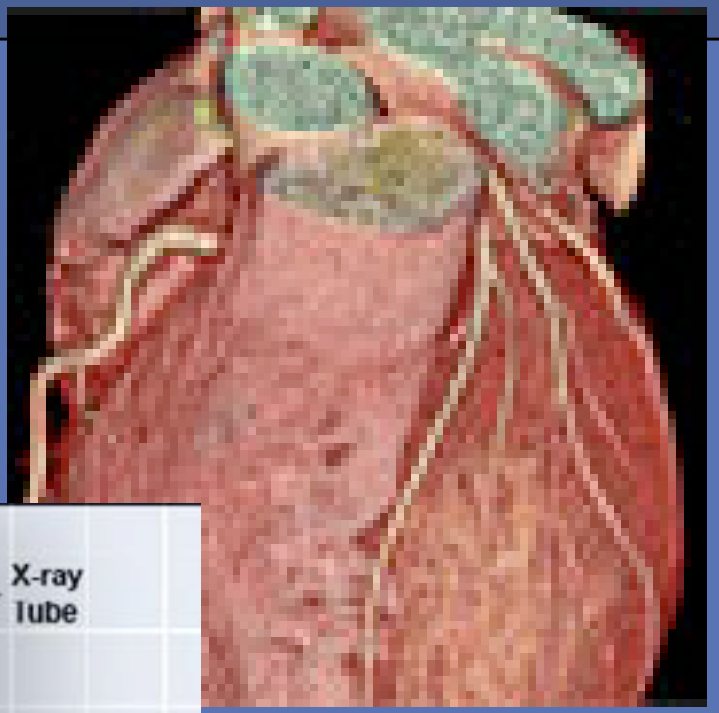
- Comparison of radiation ($3K) vs. surgery and radiation ($57K) for Rx of acute spinal mets- 27% improvement in walking
- Assume paraplegia = 0, walking =1, relative improvement in quality = .27
- However, life expectancy of entire group = 5/12- therefore, QALY = .27 X 5/12 = .1
- Cost per QALY = $54 K/.1= $540,000/QALY

Cost Effectiveness of Limb Salvage

- No data on change in health status
- No improvement survival
- Acute costs- Amputation ($1.5K) vs LS ($20K)
- Chronic costs- ($3K/ prosthesis)


SEPTEMBER 5, 2005
www.time.com AOL Keyword: TIME
CHINESE CYBERSPIES
COOL NEW SEARCH ENGINES
TIME
HOW TO STOP A HEART ATTACK BEFORE IT HAPPENS
Amazingly detailed new HEART SCANS help doctors spot trouble without surgery. How technology could save your life
Mike Fackelmann, 50, holds a scan of his heart, which revealed a major blockage of a coronary artery (arrow)

Cardiac Imaging



Resource Allocation & Priority Setting

- **Linda Wright** MHSc, MSW, RSW
  Eoin Connolly, MA

Ethical Issues

- We have a duty to care for all patients
- Need to treat all patients fairly
- Ethical challenge = To find a *fair* way to make tough decisions about scarce resources

Ethical Framework: Goals are legitimacy and fairness

- Legitimacy: who has moral authority to make priority setting decisions about available resources?
- Fairness: when does a stakeholder have sufficient reason to accept a priority setting decision as fair?

Ethical Framework: Accountability for reasonableness (A4R)

- **Relevance** – decisions based on reasons fair-minded people can agree are relevant under the circumstances
- **Publicity** – reasons publicly accessible
- **Revision** – opportunities to revisit/revise decisions & mechanism to resolve disputes
- **Empowerment** – optimise effective participation and minimise power differences
- **Enforcement** – to ensure *4* conditions met

A4R in action: Key elements

- Relevance

- Publicity
- Revision
- Empowerment
- Enforcement

Criteria

- Strategic fit
- Alignment with external directives
- Academic mandate
  - Education
  - Research
- Clinical impact
- Community needs
- Partnerships (external)
- Resource implications- cost effectiveness

(Gibson, Martin & Singer. 2004. “Priority setting in health care organisations: criteria, processes, & parameters of success.” *BMC Health Services Research* 4:25.)

Process Elements

- Ensure strategic alignment
- Identify decision-makers
- Define criteria Collect data/information
- Engage internal/ external stakeholders
- Develop an effective communication plan
- Communicate decision & its rationale
- Develop decision review processes
- Monitor/evaluate & improve
- Lead by example

Daniels & Sabin. 2002. *Setting limits fairly: can we learn to share scarce resources?* Oxford University Press. Gibson, Martin & Singer. 2005. Priority setting in hospitals: fairness, inclusiveness, and institutional power differences. *Social Science & Medicine* (in press)

Benefits of approach

- Board: due diligence, accountability
- Senior management: strategic operations, quality improvement, learning organization
- Staff: EBMx, political engagement
- Patients: fair treatment
- Community: sense of involvement
- Other health care organizations: shared lessons, system improvement
- Government: accountability

What happens if treatment does not meet the cost-effectiveness hurdle?

- Ignore
- Treatment in America?
- Treatment in “private” Canadian centers?
- “Private” treatment in public facilities?

Ethics, TPS & Muda

- Toyota is one of only two auto companies making money on cars
- Taiichi Ohno- father of TPS
- Institute for Healthcare Improvement- Berwick and Spear
- Lean techniques (elimination of muda) in health care

Principles of TPS- Elimination of Muda

- Standardize processes
- Pull, not push efficiency
- Efficiency pull comes from developing people
- Eliminate work that does not add value

100k *lives* Campaign

SOME IS NOT A NUMBER. SOON IS NOT A TIME.

Standardization - Six Changes That Save Lives

1. Deploy Rapid Response Teams
2. Deliver Reliable, Evidence-Based Care for Acute Myocardial Infarction
3. Prevent Adverse Drug Events (ADEs)
4. Prevent Central Line Infections
5. Prevent Surgical Site Infections
6. Prevent Ventilator-Associated Pneumonia

Three Sources of Muda in Health Care System

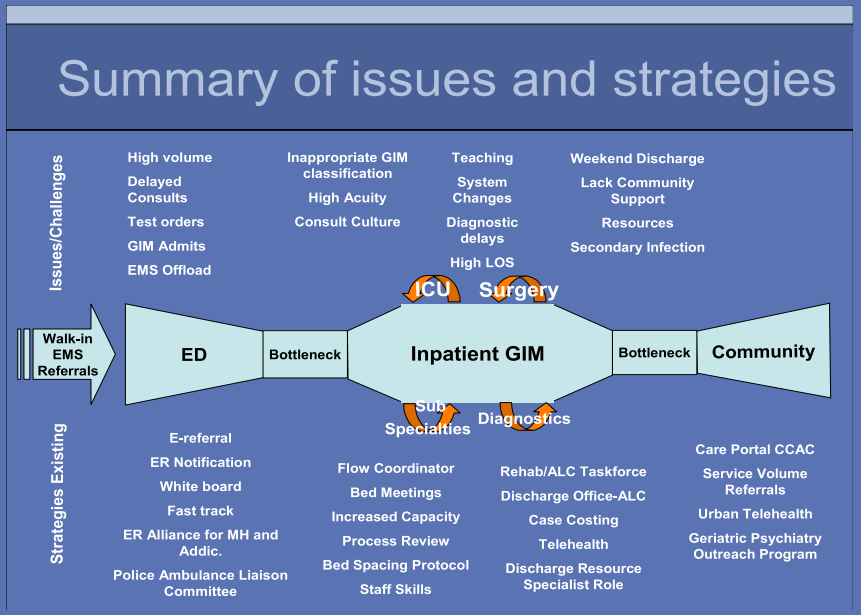
- Wrong level of care
- Difficult processes
- Inappropriate resource utilization

Right Patient - Right Bed

- Criteria for CC admission
- Criteria for acute care setting
- Criteria for community care

Processes

- ED overcrowding has little to do with ED
- Bottlenecks
- Scheduling
- Resources
- Processes around ED have major impact on ED waits



Resource Utilization

- The people who determine resource utlization are not our employees
- How do we get physicians to consider resources in therapeutic decision making?

Summary

- Health care is a critical economic asset
- We will face increasing complexity in deciding what services are funded
- We need an ethical framework for decision making
- We need to ensure that we are constantly examining opportunities for improving our systems and developing tools to measure efficiency

Questions or Comments?