Dr Peter Murray

Medical Advisor Registrar

PHARMAC

Friday, June 9, 2017

(Room 10)

14:00 - 14:55 WS #53: Funding Pharmaceuticals - What's the Problem?

15:05 - 16:00 WS #65: Funding Pharmaceuticals - What's the Problem? (Repeated)

PHARMAC
Pharmaceutical Management Agency

PHARMACEUTICAL FUNDING - What are the problems?

Dr Peter Murray

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PHARMAC

New Zealand Government

Key messages

1. Fundamental issue is how we use and prioritize our limited resources

2. There are many competing factors underpinning a pharmaceutical funding decision

3. Quality of study design is more important than the results

4. PHARMAC uses evidence and commercial mechanisms to get the best value for NZ

New medicines are important

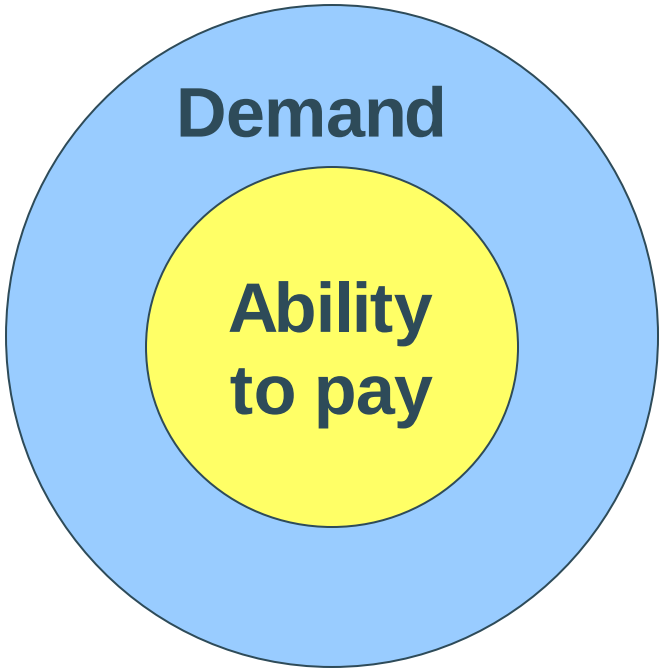
New medicines that offer value are important for

- Managing disease with no current treatments
- Improving the management of disease with existing treatments

Bringing a medicine to market costs money/time/resources

Pharmaceutical companies are critical for bringing new medicines to the market

Fundamental issue



… so choices need to be made

Pharmaceutical funding decisions are very complex

What makes the issue complex?

International medicine pricing – going up!

Public expectations (internet and media)

The evidence – its more than the results

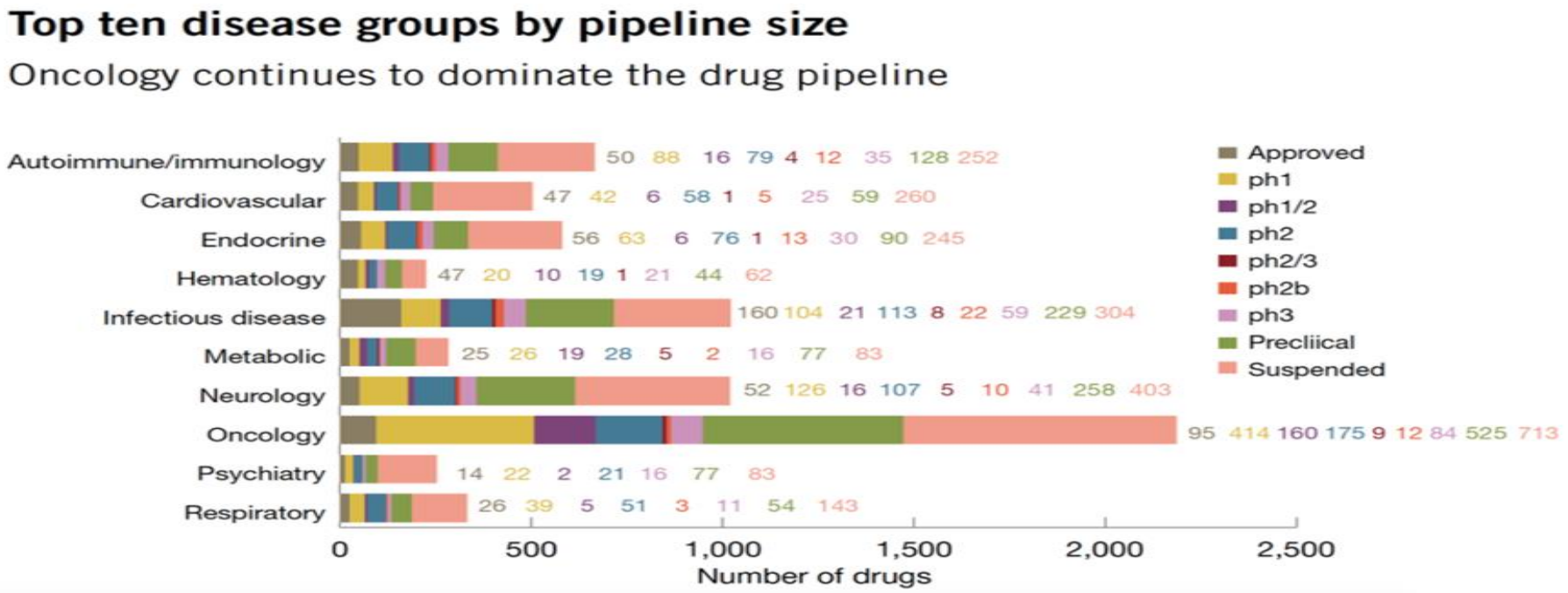
Competitive marketplace

Pricing – All R&D?

After paying all research costs and other costs of doing business, pharmaceutical manufacturers earn **profits** that average close to 20 percent of sales. The industry has consistently ranked as one of the **most profitable industry** sectors with returns that are more than double the median return for all industries.

Engelberg, A. "Memo to the President: The Pharmaceutical Monopoly Adjustment Act Of 2017". Health Affairs (2016). URL: http://healthaffairs.org/blog/2016/09/13/memo-to-the-president-the-pharmaceutical-monopoly-adjustment-act-of-2017/

Pricing – R&D is focused in certain therapeutic areas



DeFrancesco, L. "Drug pipeline Q4 2015." Nature biotechnology 34.2 (2016): 128.

Pricing – Intrinsic value?

As high prices are hard to justify based on research and development costs, drug companies have been turning to a different line of defence:

they argue that their prices are **proportionate to the intrinsic value** of the drugs—that is, the costs to society if a disease was not treated, or if treated with the second best therapy available.

Mazzucato M. "High cost of new drugs." BMJ 354.4136 (2016).

Intrinsic value – A critique

‘People with cancer are **living longer** now than 40 years ago… But how much do we attribute to drug treatment? Not much … the nearly **20% improvement in five year survival** over the last four decades is probably due to improved **early diagnosis** and **treatment** rather than development in cytotoxic chemotherapy’.

Godlee, F. "Too much chemotherapy." BMJ 355 (2016): i6027.

Intrinsic value – A critique

A study published in 2015 in the *Journal of Economic Perspectives* examining a sample of 58 cancer drugs approved in the US between 1995 and 2013,…….

Over two thirds of new medicines reaching the market **do not represent any therapeutic advance for patients**, with many patents based on a reshuffling of old combinations or on additional uses for existing ones.

Mazzucato M. "High cost of new drugs." BMJ 354.4136 (2016).

Intrinsic value – All benefit?

Our prescription drugs are the **third leading cause of death** after heart disease and cancer.

Based on the best research I could find, I have estimated that psychiatric drugs alone are also the third major killer, mainly because antidepressants kill many elderly people through falls.

What makes this tragedy particularly absurd is that the vast majority of the deaths can **easily be prevented**.

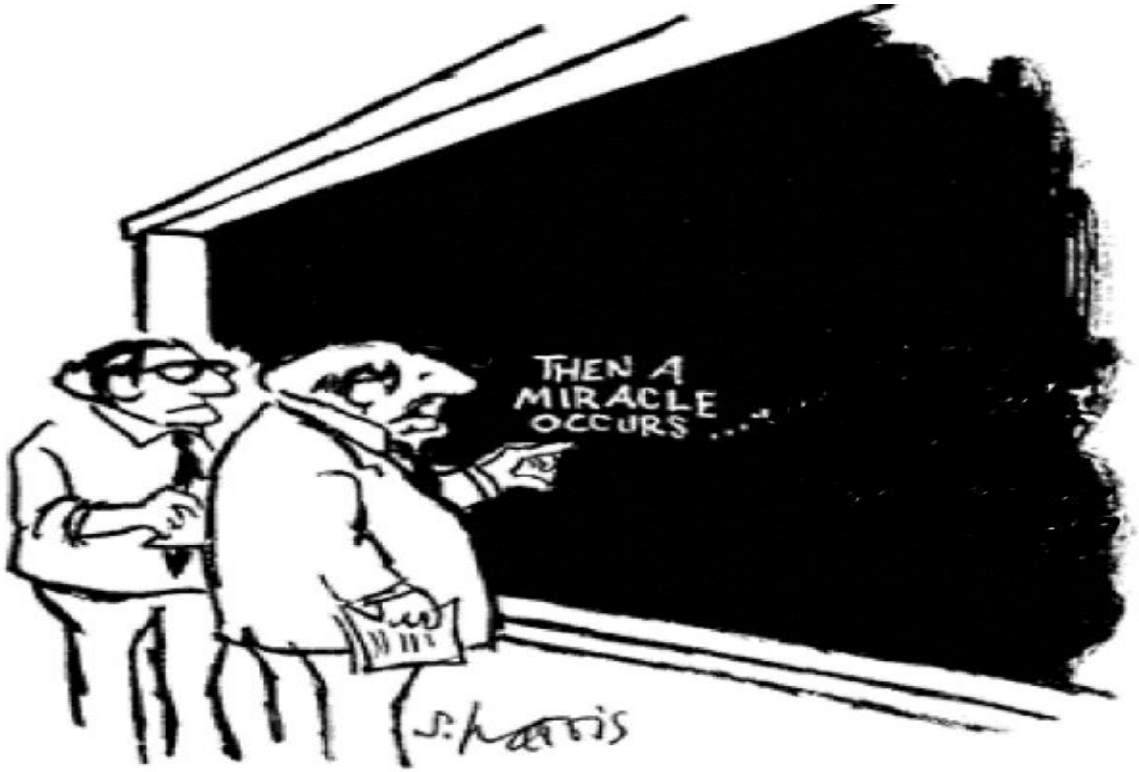
Gøtzsche, P. "Too much medicine – Prescription drugs are the third leading cause of death." BMJ Clinical Evidence Blog (2016). URL: http://blogs.bmj.com/ce/2016/06/16/too-much-medicine-prescription-drugs-are-the-third-leading-cause-of-death/

Expectations – Hype and PR

“In 1991, I didn't know... **we would cure breast cancer... in 2005**, I'm convinced we have” (Jo Anne Zujewski of the US National Cancer Institute)

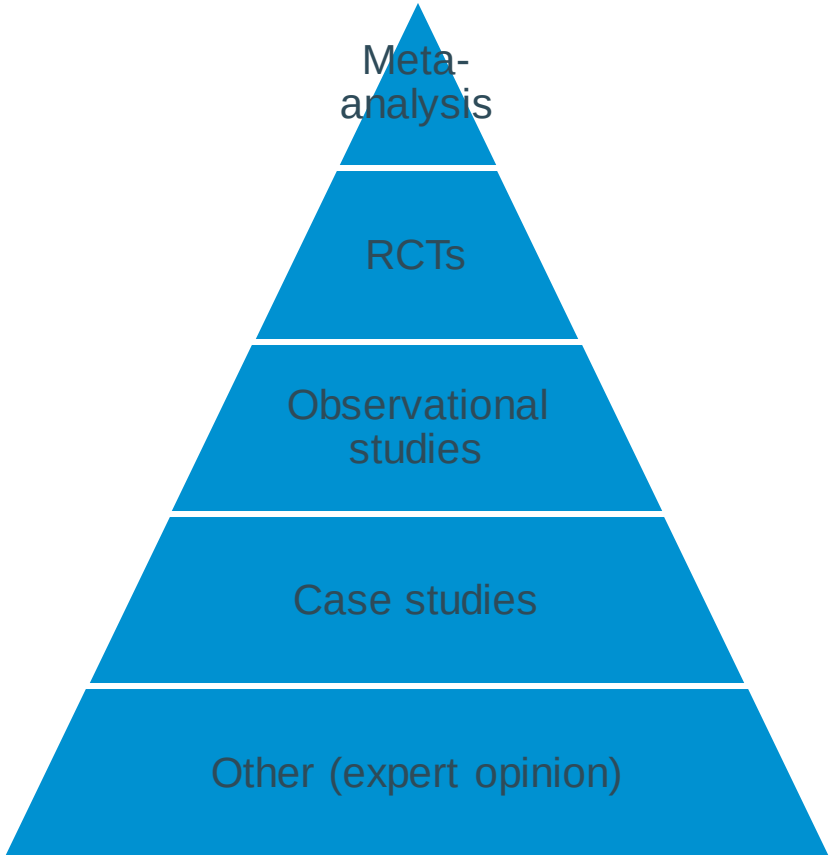
“The results are **simply stunning**… This observation suggests a dramatic and perhaps permanent perturbation of the natural history of the disease, maybe even a cure.” “Clearly, the results reported in this issue of the Journal are **not evolutionary but revolutionary**” (NEJM editorial by Hortobagyi, 2005)

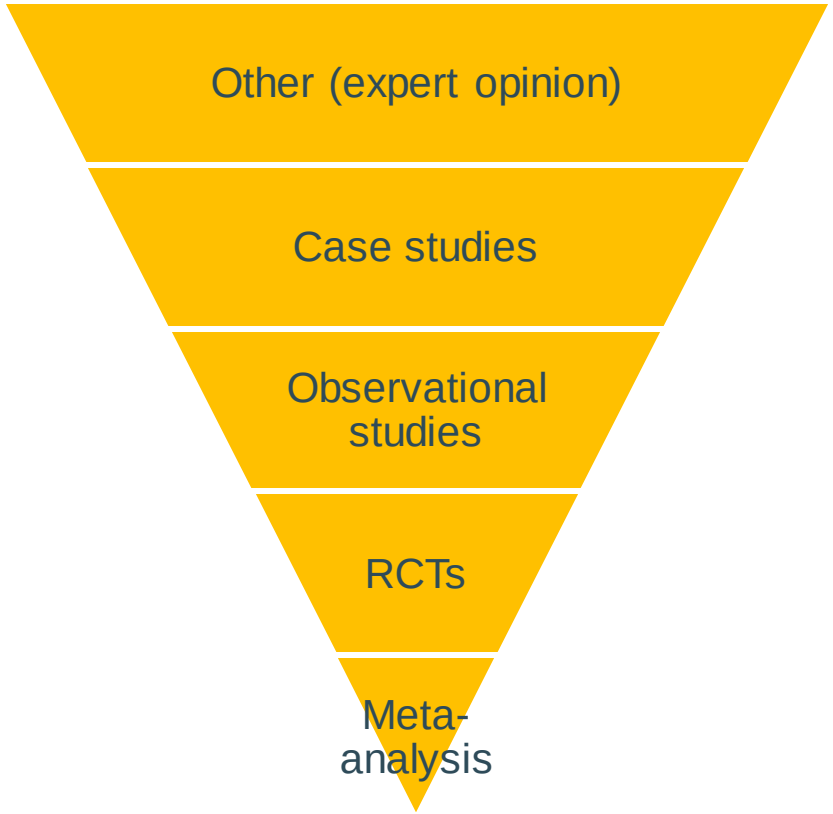
Issues with Evidence



"I think you should be more explicit here in step two."

Hierarchy of evidence





Perspectives of Evidence

Quality and design of a study are more important than the results of a study

- As Doctors we're more interested in the results - read the heading, then go straight to the conclusion!!

Primarily studies are designed to get drugs onto the market, not to give optimal use, place in treatment paradigm or relative value

A tension exists between then need to do something for my patient versus the true benefit of the intervention

Challenges with evidence

We need to look beyond the ‘results’ and the media headlines

We need to carefully consider the impact of study design and conduct

Particular challenges – Study design

What was the study designed to do?

- What is trying to be measured?
  - Many trials are shorter in duration so key outcomes can be missed
  - Is it primarily safety or efficacy?

Example – using early small trial data in lieu of well-designed large trials

Particular challenges – Who is being studied?

Often studies choose low risk and unrepresentative populations

This impacts the relevance of the findings

- Do trial results from a USA study translate into NZ with its different ethnic profile?
- Will the results replicate in real life?

Particular challenges – Analysis and results

The more the data is cut the more likely a positive result

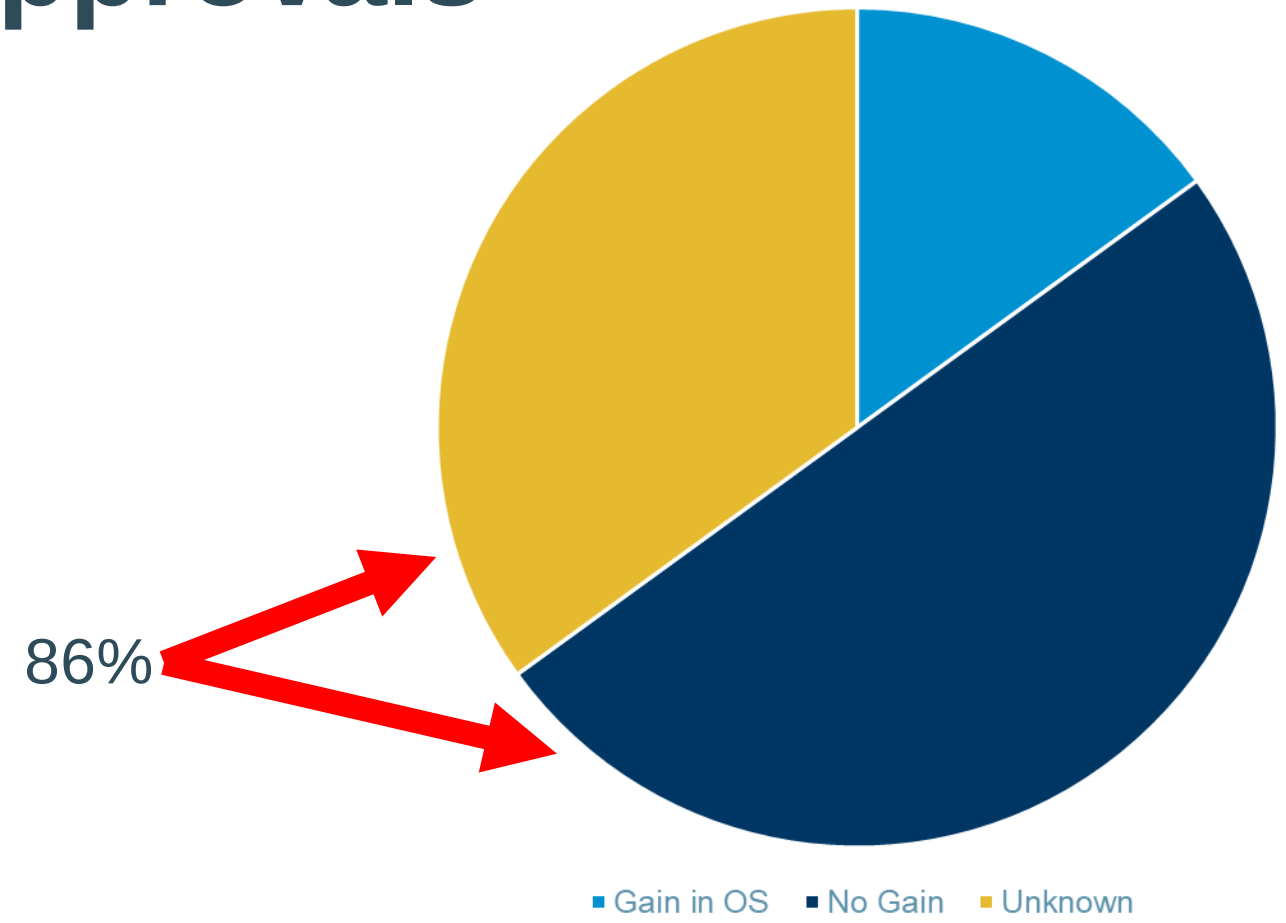
How are the results reported

- Relative/Absolute
- Example: Rosuvastatin JUPITER study

Use of surrogate markers

- Does the endpoint = real outcome
- Example: PVCs as surrogate for CVD mortality in anti-arrhythmics.

Cancer – Surrogate Markers and Approvals



Kim & Prasad JAMA Intern Med 2015;175(12):1992-4

The evidence – Issues for funding agencies

Funding agencies need to look beyond results

Need to consider the quality and strength of evidence

Requires critiquing study methodology and results

How do we manage the pharmaceutical funding issue?

Spend more taxpayer money?

Table 1. Life Expectancy and Health Expenditures Worldwide[3]

Country	Life Expectancy (female-years)	Total Expense per Person (US $)	% of GDP
Australia	83	2,519	9.5
Canada	83	2,669	9.9
Ireland	81	2,860	7.3
Japan	86	2,662	7.9
Monaco	85	4,587	9.7
Singapore	82	964	4.5
Spain	83	1,541	7.7
Switzerland	83	5,035	11.5
United Kingdom	81	2,428	8.0
United States	80	5,711	15.2

Abbreviation: GDP, gross domestic product.

World Health Organization 2006

Shift the existing money around?

NZ Doctor 12 March 2008


Shift gut money to cancer, says gut doc

Formally assess the new technologies?

Most countries have set up pharmaceutical (or health technology) assessment agencies:

- Australia (PBAC)
- UK (NICE)
- Canada (CADTH)
- New Zealand (PHARMAC)

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PHARMAC versus other assessment agencies

Function	PHARMAC	Others eg. PBAC
Assess medicines		
Fund medicines		
Manage fixed budget		

PHARMAC versus Medsafe

Two different roles

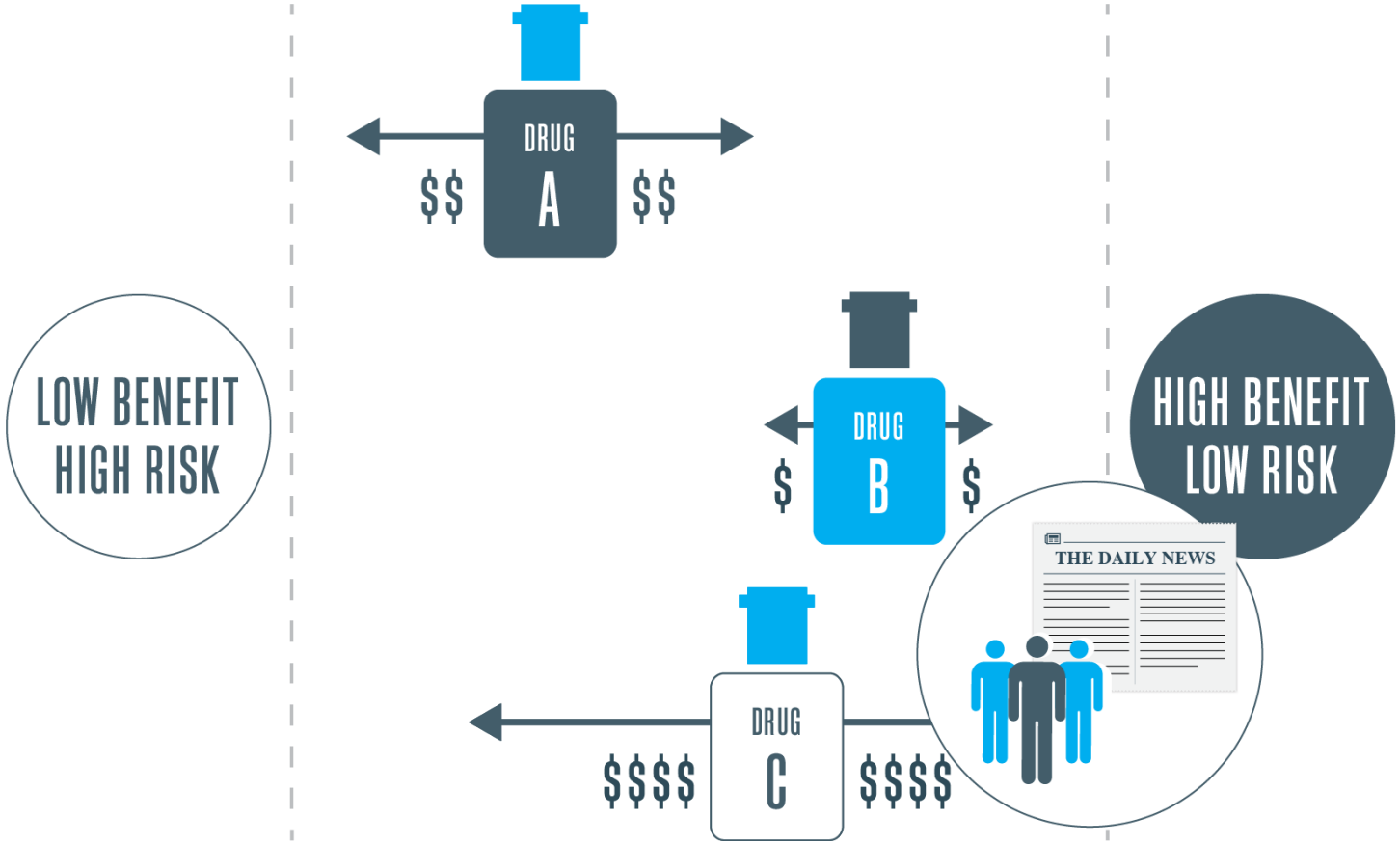
Medsafe

- **Efficacy + Safety**

PHARMAC

- **Efficacy + safety + value**

What does PHARMAC consider?



PHARMAC's value add

Appraise the evidence

Seek expert advice

Commercial negotiation

Target funding

Why PHARMAC Exists: The Patient

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Beyond the brand

New Zealand Government

www.learnonline.health.nz

QUESTIONS