OVERVIEW: WHAT IT TAKES TO GET A NEW CANCER MEDICINE FROM DISCOVERY TO PATIENTS

The process of getting a new medicine from discovery to patients is lengthy and involves several key steps. Each stage - from discovery through to trial, regulatory approval and subsidy - can vary depending on the medicine.

1. **PRE-CLINICAL RESEARCH:** Pharmaceutical companies and their innovation partners spend an average of four years developing new molecules.

2. **CLINICAL TRIALS:** New molecules that show promise in the lab are then tested in carefully controlled clinical trials. The various phases of clinical trials take an average of nine years to complete. Only a small number of medicines that enter the trial process are approved.

3. **REGISTRATION:** Pharmaceutical companies apply to the Therapeutic Goods Administration (TGA) to seek approval to market (sell) a new medicine in Australia. The TGA regulates the supply, import, export, manufacturing and marketing of all therapeutic goods in Australia.

4. **RECOMMENDATION FOR REIMBURSEMENT:** In Australia, most prescription medicines are subsidised by the Commonwealth Government through the Pharmaceutical Benefits Scheme (PBS) to ensure they are affordable. An independent expert group, the Pharmaceutical Benefits Advisory Committee (PBAC), evaluates new medicines to determine their cost effectiveness and recommends to the Government which medicines should be added to the PBS.

5. **MINISTERIAL OR CABINET REVIEW:** The Government reviews PBAC recommendations and reaches a decision (e.g. to add a new medicine to the PBS).

6. **PBS LISTING DATE:** The Health Minister decides when new medicines will be added to the PBS.

7. **NEW USE:** Should clinical trials suggest a medicine is effective in treating another condition (referred to as a new indication), pharmaceutical companies begin a fresh round of the regulatory and reimbursement processes detailed above.

HOW DO CLINICAL TRIALS WORK?

In Australia, clinical trials are regulated by laws and codes of conduct to protect the patients who volunteer to participate and ensure the integrity of the research. All trials must be approved by a Human Research Ethics Committee.

New cancer medicines are usually compared to something else, known as a control. This can be a placebo (which contains no medicine) or a treatment already in use (usually the current standard of care). The most reliable data – often referred to as ‘gold standard’ – comes from trials where patients are randomly assigned to two or more groups and where neither patients nor researchers are aware of which group a patient has been assigned to.

Some clinical trials monitor patients for many months, or even years, to collect data before a final report can be submitted for regulatory approval.

Various organisations can be involved in the clinical trial process, including government departments and agencies, research groups, foundations and charities. However, most clinical trials for a new medicine are sponsored by a pharmaceutical company.

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2 Ibid
WHAT TYPES OF CLINICAL TRIALS ARE THERE?

Clinical trials for cancer medicines are conducted in phases as outlined on the Government’s clinical trials website (www.australianclinicaltrials.gov.au).

In early phase trials, a new medicine is tested in a small number of people. If the results suggest it is safe, the sponsor undertakes further trials with more participants to collect more information on effectiveness and possible side effects.

Clinical trials of new medicines typically proceed through four phases.

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<tr>
<th>PHASE</th>
<th>Description</th>
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<tr>
<td>I</td>
<td>Test a new medicine for the first time in a small group (usually between 20-80 people) to evaluate safety, including determining a safe dose and identifying side effects.</td>
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<tr>
<td>II</td>
<td>Test new medicines in a larger group of people (up to several hundred) to determine efficacy (that is, whether the medicine works as intended) and to further evaluate safety.</td>
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<td>III</td>
<td>Test the efficacy of a new medicine in large groups of trial participants by comparing the new medicine to other treatments. Phase III studies also collect information that will allow the medicine to be used safely.</td>
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<td>IV</td>
<td>Take place after a medicine has been approved. These studies are designed to monitor the effectiveness of the approved medicine in the general population and to collect information about any adverse effects associated with widespread use over longer periods of time.</td>
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HOW DO I BECOME INVOLVED IN A CLINICAL TRIAL?

- If you are interested in participating in a clinical trial, you should speak with your doctor about your options and what is appropriate.
- Pharmaceutical companies in Australia are guided by a Code of Conduct that limits the information they are able to share directly with patients. More information about the Code, and a link to the current edition can be found at the Medicines Australia website: https://medicinesaustralia.com.au/code-of-conduct/

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HOW IS A CANCER MEDICINE APPROVED FOR USE IN AUSTRALIA?

- Australian law requires all medicines marketed for human use to be registered by the TGA. Medicines approved for registration are listed on the Australian Register of Therapeutic Goods (ARTG): https://www.tga.gov.au/australian-register-therapeutic-goods
- The TGA applies scientific and clinical expertise to assess evidence of the benefits and risks of therapeutic products.
- For a medicine to be registered by the TGA, it must have a sponsor which is usually the patent holder. The sponsor’s application includes information about a product’s safety, efficacy and quality.
- The process for registration and feedback from the TGA, through to the announcement of a registration for successful applications, can take up to 12 months and is managed through a number of milestones. You can view the schedule on the TGA website: http://www.tga.gov.au/prescription-medicines-registration-process
- More information about the TGA and its processes can be found at http://www.tga.gov.au

WHAT IS THE PBS AND WHO MAKES THE DECISIONS?

- The PBS subsidises the cost of medicines for the community. It is an Australian Government program administered by the Department of Health: http://www.pbs.gov.au/pbs/home
- The PBAC is an independent, expert statutory body which reviews submissions from the sponsors of new medicines (generally pharmaceutical companies) for PBS subsidy: http://www.pbs.gov.au/info/industry/listing/participants/pbac
- The PBAC makes recommendations to the Government about whether to subsidise new medicines. The PBAC’s recommendations inform the Government’s decision about which medicines to list on the PBS.
- The PBAC may reject an application or choose to make specific recommendations regarding a medicine’s uses and any conditions or restrictions on those uses.
- The Health Minister cannot add a medicine to the PBS without the PBAC’s recommendation. A medicine must be approved by the TGA for a specific use (indication) before it can be added to the PBS.

WHAT IS THE APPLICATION PROCESS FOR GETTING A NEW CANCER MEDICINE ON THE PBS?

- The PBAC meets three times a year in March, July and November to review submissions to list new medicines on the PBS.
- To lodge a submission, pharmaceutical companies must follow strict guidelines. The PBAC evaluates submissions according to the clinical benefit and cost-effectiveness of a new medicine when compared to existing medicines or products for the same condition.
- The PBAC process is well defined and can be found on the PBAC website: http://www.pbs.gov.au/info/industry/useful-resources/pbs-calendar
- The key steps are:
  - The company (sponsor) makes a submission for the PBAC’s review four months prior to the PBAC meeting.
  - The PBAC agenda is published 10 weeks prior to the meeting.
  - Members of the public and healthcare professionals can submit comments about a submission to the PBAC from the date the PBAC agenda is published until one month prior to the meeting.
  - PBAC recommendations are published six weeks after the meeting: http://www.pbs.gov.au/pbs/home
  - If the PBAC rejects a submission, it will explain why and the sponsor may resubmit, if and when it believes it can address the PBAC’s concerns.
• Under special circumstances, the Government may agree to subsidise the cost of a medicine on a provisional basis. This process is known as the “managed access program”. The PBAC will agree to a managed access program for medicines:
  - Where patients have a high and urgent clinical need.
  - There is enough evidence to show the benefit of the medicine, but not enough to demonstrate cost-effectiveness.
  - Where the sponsor will be able to provide more evidence in a reasonable time period so the PBAC can undertake a full assessment of its value.
• The managed access program does not guarantee that a medicine will be listed on the PBS indefinitely. The PBAC may recommend “de-listing” based on its assessment of further evidence about the efficacy and safety of the medicine.4

DO PATIENTS HAVE A SAY IN THE PBAC REVIEW PROCESS?
• Anyone interested in a particular medicine and the decision on whether it should be subsidised (listed on the PBS) can have their voice heard. This includes those living with a disease, a loved one who has been impacted by the disease, members of the public, carers, family members, healthcare professionals and patient or consumer groups.
• The PBAC meeting agenda, which includes a list of submissions to be considered, and a link to the consumer comments form can be found on the PBS website: http://www.pbs.gov.au/info/industry/listing/elements/pbac-meetings/agenda
• Organisations and individuals can also access the consumer comments form through the Department of Health website: http://www.health.gov.au/internet/main/publishing.nsf/Content/PBAC_online_submission_form

WHAT HAPPENS AFTER THE PBAC MAKES ITS RECOMMENDATIONS?
• The Health Minister (or delegate) considers the PBAC’s recommendations and the Health Department’s advice on the cost to the PBS, which is developed following negotiations with the sponsor.
• The decision to subsidise a medicine goes to Cabinet if the cost is expected to add more than $20 million a year to the PBS. If Cabinet approves the subsidy, the decision on when to add the medicine to the PBS is made by the Health Minister.
• The timing for the Cabinet or Ministerial review can vary. Typically, the Cabinet or Minister makes a decision within six months of the PBAC recommendation.

HOW CAN A PATIENT GET ACCESS TO A MEDICINE PRIOR TO REGISTRATION OR SUBSIDY?
• Prior to approval by the TGA, most medicines are not available to patients.
• In certain cases, there is a regulatory process – known as a Special Access Scheme – which enables doctors to request an unapproved medicine on behalf of their patients once the patient has exhausted all other approved treatment options. More information can be found here: https://www.tga.gov.au/form/special-access-scheme
• Some pharmaceutical companies also offer Patient Access Programs for medicines that are approved by the TGA before they are listed on the PBS. In these programs, patient eligibility is determined by the company and there may be a cost to patients.
• Only doctors can request medicines on behalf of their patients. Pharmaceutical companies in Australia are guided by a Code of Conduct and are limited in what information they can share directly with patients about these programs.