PROGRAMME DES PRODUITS THÉRAPEUTIQUES
THERAPEUTIC PRODUCTS PROGRAMME

How Drugs are Reviewed in Canada

How are drugs reviewed in Canada?

Drugs are authorized for sale in Canada once they have successfully gone through the drug review process. This process is the means by which a drug application is reviewed by scientists in the Therapeutic Products Programme (TPP) of Health Canada, and on occasion, outside experts, to assess the safety, efficacy and quality of a drug.

Throughout the process, the safety and well-being of Canadians is the paramount concern.

What is the Therapeutic Products Programme?

Health Canada's TPP is the national authority that regulates, evaluates and monitors the safety, efficacy, and quality of therapeutic and diagnostic products and vaccines available to Canadians. These products include drugs, medical devices, blood, tissues, organs, disinfectants and sanitizers with disinfectant claims. The TPP also plays a national role in the control of illicit drugs and related substances in Canada.

What is considered to be a drug?

Drugs include both prescription and nonprescription pharmaceuticals; biologically-derived products such as vaccines, serums, and blood derived products; tissues and organs; disinfectants; and radiopharmaceuticals. According to the *Food and Drugs Act*, "a drug includes any substance or mixture of substances manufactured, sold or represented for use in:

a) the diagnosis, treatment, mitigation or prevention of a disease, disorder, abnormal physical state, or its symptoms, in human beings or animals,

b) restoring, correcting or modifying organic functions in human beings or animals, or

c) disinfection in premises in which food is manufactured, prepared or kept."

Natural health products, such as vitamin and mineral supplements and herbal products, for which therapeutic claims are made are also regulated as drugs.

How are drugs developed?

Research for new drugs begins with scientists developing various chemical or biological substances. Once a substance has been isolated and purified, it is administered to tissue cultures or to a variety of small animals to see whether or not there are significant changes. These changes may be biochemical, physiological or behavioural in nature.

If promising results are obtained from these initial studies, a variety of animal and laboratory tests are conducted to study other effects of the substance (e.g. how it effects the immune system or reproductive system) and to determine what dosage of the substance should be given to achieve a particular effect.

If these preclinical tests indicate that a substance produces the desired result and is not toxic, the sponsor (i.e. the person or company who takes responsibility for the application) will apply to the TPP for authorization to conduct a clinical trial.

What is the intent of a clinical trial?

The intent of a clinical trial is to research and gather information on a drug's dose, effectiveness and safety in humans. Trials are undertaken with informed and consenting human subjects according to good clinical practices. This provides a controlled environment where the procedures for drug administration and the evaluation of the results are closely monitored.

Does the TPP review clinical trials?

Prior to the commencement of a clinical trial in Canada, the TPP reviews the information submitted in the clinical trial application. This application requests permission to distribute the drug to responsible clinical investigators that are named in the application. Some of the information contained in a clinical trial application includes the results from preclinical tests, production methods, dosage form and information regarding the investigators who will be conducting the study.

What is done with the results from clinical trials?

If clinical trial studies prove that the drug has potential therapeutic value that outweighs the risks associated with its use (e.g. adverse effects, toxicity), the sponsor may choose to file a New Drug Submission with the TPP.

What are the steps in the review process for a drug?

1) When a sponsor decides that it would like to market a drug in Canada, it files a "New Drug Submission" with the TPP. This contains information and data about the drug's safety, effectiveness and quality. It includes the results of the preclinical and clinical studies, details regarding the production of the drug, packaging and labelling details, and information regarding therapeutic claims and side effects.

2) The TPP performs a thorough review of the submitted information, sometimes using external consultants and advisory committees.

3) The TPP evaluates the safety, efficacy and quality data to assess the potential benefits and risks of the drug.

4) The TPP reviews the information that the sponsor proposes to provide to health care practitioners and consumers about the drug (e.g. the label, product brochure).

5) If, at the completion of the review, the conclusion is that the benefits outweigh the risks and that the risks can be mitigated, the drug is issued a Notice of Compliance (NOC), as well as a Drug Identification Number (DIN) which permits the sponsor to market the drug in Canada and indicates the drug's official approval in Canada.

6) In addition, the TPP laboratories may test certain biological products before and after authorization to sell in Canada has been issued. This is done through its Lot Release Process, in order to monitor safety, efficacy and quality.

Why are some drugs not approved?

If there is insufficient evidence to support the safety, efficacy or quality claims, the TPP will not grant a marketing authorization for the drug. All drugs granted marketing authorization in Canada are reviewed to ensure that they meet the requirements of the *Food and Drugs Act*.

What happens when a drug is not approved?

If the TPP decides not to grant a marketing authorization, the sponsor has the opportunity to supply additional information, to re-submit its submission at a later date with additional supporting data, or to appeal the TPP's decision.

How long does the drug review process take?

The TPP has set internationally competitive performance targets for its conduct of reviews. The length of time for review depends on the product being submitted and the size and quality of the submission, and is influenced by TPP's workload and human resources. Currently, the process for the review of a drug takes an average of 18 months from the time that a sponsor submits a New Drug Submission until the TPP makes a marketing decision.

What is the TPP doing to improve the efficiency of the drug review process?

The TPP has been and continues to be committed to ensuring the drug review process is as efficient as possible. To do this, the TPP has implemented and is pursuing several initiatives to streamline the process including:

- use of electronic drug submission templates;
- participating in the development and implementation of internationally agreed upon products such as technical guidances, a common format and content standard for drug submissions, and standards for the electronic exchange of information;
- implementing and strengthening a team approach to product reviews;
- upgrading and expanding information technology capabilities;
- effective use of external expertise; and
- strengthening scientific resources.

Are some drugs reviewed more quickly?

The TPP has a Priority Review Process in place which allows for a faster review to make available promising drug products for life-threatening or severely debilitating conditions, such as cancer, AIDS, or Parkinson's Disease, for which there are few effective therapies already on the market.

Can important therapies or drugs be obtained prior to market authorization in Canada?

The Special Access Program, administered by the TPP, allows physicians to gain access to drugs which are not currently available in Canada. Following approval by the Special Access Programme, a physician may prescribe such a drug to specified patients, if it is the physician's belief that conventional therapies have failed or are inappropriate. The drug is only released after the TPP has determined that the need is legitimate and that a qualified physician is involved.

Once a drug has been approved, how is it monitored?

Once a new drug is on the market, regulatory controls continue. The distributor of the drug must report any new information received concerning serious side effects including failure of the drug to produce the desired effect. The distributor must also notify the TPP about any studies that have provided new safety information.

The TPP monitors adverse events, investigates complaints and problem reports, maintains post-approval surveillance, and manages recalls, should the necessity arise. In addition, the TPP licenses most drug production sites and conducts regular inspections as a condition for licensing. However, certain products such as natural health and homeopathic remedies, some veterinary drugs and vitamin and mineral supplements are not subject to these requirements.

For Further Information

Write: Therapeutic Products Programme
Health Canada
Holland Cross, Tower B
1600 Scott Street, 2nd Floor
Address Locator 3102D1
Ottawa, Ontario K1A 1B6

or visit our website:

www.hc-sc.gc.ca/hpb-dgps/therapeut

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The Therapeutic Products Programme is the national authority that evaluates and monitors the safety, effectiveness, and quality of drugs, medical devices and other therapeutic products available to Canadians; and plays a national role in the control of illicit drugs and related substances in Canada.

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