



**GENERIC DRUGS
SAME QUALITY
BETTER PRICE**



CANADIAN GENERIC PHARMACEUTICAL ASSOCIATION

GETTING TO MARKET IN THE GENERIC PHARMACEUTICAL INDUSTRY

DEVELOPMENT CONSIDERATIONS

Generic pharmaceutical manufacturers consider several factors when determining whether or not to develop and introduce a new generic product, including the following:

- **Demand size and competition:** The projected aggregate demand size of the reference brand product as well as the related therapeutic class, play important roles.
- **Development and Approval Costs:** An important part of entry decision is the evaluation of the total costs of introducing a generic drug to market. These costs relate to drug development, the need to conduct bio-equivalence and/or clinical studies and federal and provincial government approvals.
- **Timing:** The length of time it would take to develop the product and obtain approval from Health Canada is a crucial consideration. This is especially so if it results in the late release of a generic product after the relevant brand-name product loses patent protection.
- **Specialization and product portfolio:** A manufacturer that specializes in, for example, drugs of a certain therapeutic class or dosage forms (e.g. injectables, ointments, creams) might benefit from economies of scale or scope in production. Manufacturers may also wish to supply a drug to make their overall product portfolio more attractive to customers.
- **Legal challenge costs:** Challenging brand patents can be a costly and time-consuming process. A generic manufacturer already involved in legal challenges may decide not to enter into another challenge.

BARRIERS TO ENTERING THE SUPPLY OF A GENERIC PHARMACEUTICAL PRODUCT

In bringing a new generic pharmaceutical product to market, a manufacturer encounters various barriers to entry. Key barriers to entry relate to sunk costs associated with drug development, regulatory approval and provincial formulary listings.

DRUG DEVELOPMENT

The development of a new generic pharmaceutical product normally involves three key steps:

- 1. Securing the active pharmaceutical ingredient (API):** An API can be obtained through two sources: (a) international suppliers; or (b) internal sourcing through integrated arms of the manufacturer.
- 2. Pre-Formulation:** At this stage, generic pharmaceutical manufacturers engage their chemists to develop drug formulations based on an analysis of the product itself as well as its monograph (listing both the active and non-active ingredients).
- 3. Formulation:** This stage involves continuing research and development (R&D) and the actual preparation of test batches of generic versions, first in the laboratory and then in the manufacturing facilities.

Development costs for a new generic pharmaceutical product vary greatly from one to the next. Even in simple cases, costs may be around \$1.5 million. However, costs can be several times higher for more complicated products.

REGULATORY APPROVAL

In order to market a generic product in Canada, a manufacturer must obtain approval from Health Canada under the Patented Medicines (Notice of Compliance) Regulations. These regulations address two issues, first, whether the generic product is bio-equivalent to the Canadian brand reference product, and, second, whether the generic infringes any valid patents.

Bio-equivalency

To market a generic, the manufacturer must file an Abbreviated New Drug Submission (ANDS) with Health Canada, containing data that demonstrate the drug's bio-equivalence with the Canadian reference brand product. The ANDS must contain sufficient information for Health Canada to assess the bio-equivalence of the generic to the brand-name product, as well as evidence of tests conducted on potency, purity and stability of the new generic drug.

Standard bio-equivalence studies measure the rate and extent of absorption, or bio-availability, of a generic drug. This is then compared to the same characteristics of the reference drug product. The bio-availability of the generic product must fall within an acceptable range of the bio-availability of the reference product. Typical costs for conducting bio-equivalency studies are in the range of \$1 – 1.5 million per product.

Patent Infringement

After filing an ANDS with Health Canada, generic manufacturers are required under the NOC Regulations to serve a

Notice of Allegation (NOA) on the patentee that the generic will not infringe any patent rights. The patentee may then apply to the court for an order prohibiting Health Canada from approving the generic drug. Health Canada cannot issue its approval to the generic until 24 months have passed or the application has been dismissed. Therefore, the patentee can prevent a generic product from entering the market for up to 24 months simply by alleging patent infringement.

In addition to the NOC Regulations, the patentees may initiate a patent lawsuit as a threat to the marketing of a generic drug. In such cases, a generic might succeed under the NOC Regulations, market the drug and then be sued by the brand-name manufacturer for patent infringement. Generic manufacturers face double jeopardy regarding patent infringement in Canada.

Patent challenges under the NOC Regulations are a normal part of bringing a generic pharmaceutical product to market. Legal costs for the first generic to challenge are commonly in excess of \$1 million and can be much higher in complicated cases.

Provincial Formulary Listing

Once the generic product has received Health Canada approval it can be sold anywhere in Canada. However, in order to be reimbursed under provincial drug programs and obtain significant sales volumes the generic product must be listed on provincial drug benefit plan formularies. This process can take several months from the time of Health Canada approval.

OVERALL COSTS

In sum, from the time a decision is made to produce a generic pharmaceutical product, manufacturers typically require between three to six years to bring the product to market. While costs can vary widely from case to case, they can be in the range of \$3.5 million (including costs for bio-equivalence studies, development and regulatory approval) even for a non-complex product.