



IUFOST Scientific Information Bulletin (SIB)
September 2010

Regulation of Natural Health Products¹

Defining what exactly is “complementary medicine”, in regards to both products and practice, has many challenges, strongly influenced by exactly who the audience is. For example, traditional Chinese medicine may be complementary in Canada but is considered within the conventional norm in China and many countries in South East Asia. The National Institutes of Health in the United States defines complementary and alternative medicine (CAM) as:

“a group of diverse medical and health care systems, practices, and products that are not generally considered to be part of conventional medicine. While scientific evidence exists regarding some CAM therapies, for most there are key questions that are yet to be answered through well-designed scientific studies—questions such as whether these therapies are safe and whether they work for the purposes for which they are used”.

While complementary therapies and products are somewhat interlinked, most especially historically, the focus of this information bulletin will be the regulation of the products element. This sector goes by many names, complementary medicines in Australia, natural health products in Canada and dietary supplements in the USA. In many countries they are considered as separate sectors such as homeopathic products, herbal products and nutritional supplements. While intuitively people think they know what is captured by this definition, in practice this is more complicated and less precise. While many people would consider products captured under a structured form of traditional form of medicine such as traditional Chinese medicine to be ‘complementary’, what about a product that simply falls outside of conventional health care practice such as glucosamine sulphate or melatonin? What if an herbal medicine used for millennia within a traditional form of health is shown through a randomized controlled trial to be effective and included within western health practices. Is it still a complementary medicine or is it a conventional medicine? Should tradition determine a product as being complementary, should access, should usage or should evidence?

¹ The term Natural Health Products has been defined by Health Canada as: vitamins and minerals; herbal remedies; homeopathic medicines; traditional medicines such as traditional Chinese medicines; probiotics, and other products like amino acids and essential fatty acids. <http://www.hc-sc.gc.ca/dhp-mps/prodnatur/index-eng.php>

In response to the growing market and in consideration of the complexity of the subject, increasingly jurisdictions around the world are exploring how to better regulate these types of products. To gauge the market, in 2005, the World Health Organization (WHO) Traditional Medicines initiative conducted a survey of member nations titled "*National Policy on Traditional Medicine and Regulation of Herbal Medicines*". This survey was intended to identify trends in one type of complementary medicine, in this case herbal medicines. While this survey did show a definite trend towards regulation, it also showed that countries are taking a myriad of ways to do this. Some consider herbal medicines to be simply conventional medicines and apply the same regulations, while some others consider these products to be a distinct category with their own regulatory framework. Certain jurisdictions allow herbal medicines to be prescription medicines for serious claims, while others restrict them to over-the-counter use for self-limiting conditions or health promotion.

Many reasons exist for this increased attention to regulation, notably the need to ensure products are of high quality, safe and make legitimate health claims. Recently a number of safety issues have been seen with complementary medicines/natural health products related to direct toxicity and risks associated with inappropriate use. While some of these concerns have arisen from the product itself, increasingly products that have been adulterated with pharmaceutical drugs or have been made in a substandard fashion, have come to light. Unfortunately, this reflects the increased market and profitability of these products. A challenge faced by the regulator is balancing these risks with the need to respect consumer's need to access products, together with a respect for traditions of health and healing not within the conventional norm for that country. Increasingly the informed choice question has been one of the guiding principles, with the intent of regulations to provide consumers with the information and assurances necessary to decide to take, or as importantly not take, a complementary medicine.

As mentioned above, the focus of this information bulletin is on 'complementary products' rather than 'complementary therapies' such as acupuncture, herbalism or massage therapy. It will provide information and insight related to defining the actual sector; exploring the role and form of regulation taken internationally; identify some common challenges; and outline recent developments in the field.

Defining the field or topic

Defining this sector is more complex than may appear. There is no universal way in which these products are regulated, with a number of different frameworks applied between jurisdictions. Consequently there is no clear and unequivocal definition of what or what is not a natural health product/complementary medicine/dietary supplement. A simple starting point maybe to consider these products in the context of three perspectives; the products themselves, the reason why they are being used, and the way they are accessed or obtained.

Considering the products themselves, as stated above, when asked what people mean by a complementary medicine or natural health product, many consumers can intuitively respond. Typically products included in this definition are herbal medicines, vitamins, minerals, essential fatty acids and other nutritional supplements, traditional medicines and homeopathic products. Given the global nature of the market and different geographic contexts, this base 'catch all' will differ between countries. For example, while Ayurvedic medicines maybe considered as a complementary medicine in Australia, in India where they originate they are considered a central pillar of health care practice. From a regulatory standpoint, only a few countries, notably Canada and Australia, regulate complementary products within an umbrella definition with others regulating specific types of complementary medicines/natural health products as separate product lines.

Considering the definition of complementary medicine/natural health product/dietary supplement in the context of the reason why it is used, there are a number of reasons why they may be used. These include to:

- Promote physiological or biochemical structure and function such as strengthening bone structure, supporting bowel function, enhancing the immune system;
- Prevent or reducing disease risk such as cardiovascular disease or incidence of the common cold;
- Treat a disease or condition such as coughs, colds, headaches etc; and
- Supplement perceived dietary deficiencies, e.g. of vitamins or minerals

Individual jurisdictions use the reason a product is used as a key element in the definition of complementary medicine/natural health product. While some will allow natural health products to make a full spectrum of claims ranging from self limiting conditions such as the treatments of coughs and colds to serious conditions such as cancer and depression, the majority do not. In these jurisdictions, complementary medicines/natural health products making claims to treat or mitigate serious conditions are automatically regulated as conventional medicines and regulated accordingly.

Depending on the country, products in this sector can be obtained either with or without practitioner intervention. In most countries, when a regulatory framework specific to these products exist, it reflects the fact that they are used for self limiting conditions or prevention and so are limited to products available over the counter in many developed countries, complementary medicines/natural health products/dietary supplements make up a significant, and some cases majority, of the total over-the-counter market. Notably exceptions to this, such as the prescribing of certain traditional Chinese medicines in China, reflect the very developed regulatory framework for practitioners practicing traditional Chinese medicine in that country.

An increasingly important element within this sector relates to those products simply identified as being outside of the conventional health care market. These products do not fit within any established form of traditional form of health and healing such as Ayurvedic medicine or traditional Chinese medicines but rather the complementary and alternative health care model. Examples of these are products are glucosamine salts, melatonin and certain amino acids and their derivatives. This specific sector has undergone a rapid increase over recent years especially in North American markets. In some cases, these products are regulated as conventional health care products and some jurisdictions, such as Canada and the USA, can be captured within the category of natural health care product or dietary supplement, respectively.

Role and Type of Regulation

As was mentioned above, an increasingly important theme behind regulations of complementary medicines/natural health products/dietary supplements is the need to provide consumers with the ability to make an informed choice. As with their definition, there is no universal way in which these products are regulated. Regulations are developed and implemented with a national context reflecting the needs of the domestic population. However there are some common themes and a number of models used.

Common principles

Typically, regulations are developed and balanced between three key elements a) ensuring that products are of high quality b) ensuring products can be taken safely c) providing for reasonable access to the market place. Countries with developed frameworks for complementary medicines/natural health products include a fourth element of evaluating efficacy and relating this to the claim or indication which can be made. Inclusion of this fourth element is particularly

challenging given the broad range of types and forms of evidence available. This is discussed below

Umbrella category or separate categories

Countries can either regulate these products as a distinct and discrete sector or they can apply specific regulations to individual types of complementary medicines/natural health products. Canada and Australia have taken the lead in regulating these products as a distinct group referring to them to natural health products, dietary supplements and complementary medicines respectfully. The guidelines developed to support the implementation of the regulations reflect the broad nature of the sector with some elements generally applying across the board and other specific to an individual type of complementary medicines/natural health products. For example, in the case of Canada, labeling provisions for homeopathic medicines are not exactly the same as those for herbal medicines, reflecting the differences between the two types of products. While there is some appeal in the regulation of these products as a distinct group, most countries have separate sets of regulations specific to individual types of complementary medicines/natural health products. The sophistication of these regulations usually reflects the traditional use within that country and the respective market place. For example, while a number of European countries where homeopathic medicine is used have a structured regulatory framework for homeopathic medicines, the way in which traditional Chinese medicines are regulated is less sophisticated. The opposite exists in China, where Chinese Proprietary Medicines have a very structured and progressive regulatory framework and homeopathic medicines are either unregulated or fall within the general regulation of therapeutic products. Typically, when an umbrella term such as natural health products or complementary medicines do not exist, the types of complementary medicines/natural health products with specific regulatory frameworks are:

- Herbal medicines and substances;
- Homeopathic medicines
- Traditional medicines such as traditional Chinese medicines and Ayurvedic Medicines
- Dietary or nutritional supplements including vitamins, minerals and essential fatty acids

Common elements

Irrespective of differences between jurisdictions, regulatory frameworks developed specifically for complementary medicines/natural health products have a number of common elements:

- Provisions for a product license or approval;
- Provisions for a site license or approval related to where the product is manufactured including Good Manufacturing Practices (GMPs);
- Provisions related to advertisements and the ways in which products can be promoted
- Provisions for the reporting of adverse events and drug interactions;
- Provisions for labeling including indications, contraindications and warnings;
- Provisions for records
- Provisions related to claims which can be made related to the evidence provided

While regulations exist for all of these elements in a few countries such as Canada and Australia, in most countries the elements which exist relate to the scope and breadth of the framework in place. For example, if a specific country does not allow a product to make a claim, then the provisions for evidence are sparse.

As with other therapeutic products, it is rare for one set of regulations to capture all elements related to one type of product. A more usual approach is for a number of different regulatory frameworks to apply to any type of therapeutic product, some specific and some general. For example, in many countries, a common set of advertising guidelines exist for all products with

complementary medicines/natural health products being captured by them as with other types of therapeutic product.

Is the substance a food or drug? Typically sets of regulations are grounded in existing legislation. Often this is more important than the regulations themselves. While there are a very few exceptions, typically the big question is whether complementary medicine/natural health products are considered a subset of drugs or a sub-set of foods. Irrespective of the regulations themselves, this fundamental question impacts on how complementary medicines/natural health products are considered. Some countries consider that since complementary medicines/natural health products are therapeutic, they should be considered as a subset of the existing drug legislation with regulations developed specifically for this category. This allows products to be able to make more specific and broader therapeutic claims including treatment and allow for provisions to regulate them in a more appropriate manner. Examples of countries which regulate complementary medicines/natural health products as an inclusive category and that have followed this course action are Canada and Australia. Other jurisdictions such as the United States and the European Union, consider dietary supplements to be a subset of the existing food legislation. This restricts the claims that can be made and the amount of regulatory oversight thought necessary. Given that most countries do not regulate complementary medicines/natural health products as a discrete category, different subsets of complementary medicines/natural health products are regulated in either way. For example, in the European Union vitamins and minerals are considered from a regulatory standpoint to be a type of food, whereas certain herbal medicines are considered to be a type of drug.

This complex and often confusing international regulatory milieu can give rise to a number of issues, notably with regards to how and when international food and drug standards and agreements apply globally. A regulatory question being faced by all regulatory agencies is distinguishing between complementary medicines/natural health products and foods. With the health claims being more frequently allowed for foods, together with the increasing functional food market, the gray area between a complementary medicine/natural health products and a food is a major issue being faced by all regulatory agencies. While some are trying to distinguish based on format, that is substances presented as tablets or capsules would be considered to be complementary medicines/natural health products, more needs to be done before a clear distinction can be made between the two.

Pre-market vs. Post Market model

Regulations can either be applied before the product comes to market (pre-market) or after it is on the market (post-market). In a fully pre-market system, the applications for both a product license and a site license are received and reviewed before a product can be sold. In a fully post-market system, the product is allowed on the market without any sort of pre-market review. In this case, there is typically some sort of post market review with manufacturers required to hold a file containing specifications related to their product which can be audited by the regulatory agency. The resource intense nature of a completely pre-market approach and the relatively limited impact of a fully post-market approach have resulted in a combination of the two being the considered by many regulatory agencies. The determining factor on which is applied being determined by the risk of the product. In essence, a new or novel product with limited history of use would be more suitable for a pre-market assessment, with one with an established low risk being more suitable to more of a post-market approach. This model is increasingly being referred to as a life cycle approach and is considered more dynamic and suitable to the market place. In jurisdictions where new regulatory regimes for these products have been introduced, measures have had to be implemented to address the complementary medicines/natural health products already on the market. In many cases, this reflects many thousands of products. In many cases a pragmatic approach has been taken with all or most of the products, those deemed to be "low risk", on the market being "grandfathered".

Concise details of the approaches taken by different countries and jurisdictions can be found in table 1

Role of Regulatory Cooperation

Increasingly the marketplace for complementary medicines/natural health products is becoming global in nature, with products frequently being manufactured overseas from the place they are sold. This has become increasingly problematic notably with regards to safety and quality issues. A number of examples exist where poor or adulterated products made in one country have had a large impact on many others. In response to this, there has been an increasing trend towards stronger links between regulatory organizations. While regulatory harmonization is a goal a long way off, enhanced regulatory cooperation between like minded agencies is rapidly becoming a reality. Though largely regional in nature, increasingly these collaborations are becoming global in nature. The WHO and its regional sister organizations have played a key role in this enhanced partnerships. An example of this relates to herbal medicine in particular. In 2005, in association with the WHO, Health Canada hosted a meeting on herbal medicines in Ottawa. The objective of this meeting was to identify common issues facing agencies regulating herbal medicines and to develop strategies which they could address. It was decided that a new network should be created called the International Regulatory Cooperation on Herbal Medicines (IRCH). Since that meeting, three further meetings have been held in China, Malaysia and Canada, with membership of IRCH has grown to over 20 and mechanisms for regular communications have been established.

While enhanced regulatory cooperation came out of increased concerns about safety and quality of products, it has also provided an opportunity for regulatory agencies to start to collaborate on addressing common challenges together.

Conclusion

As consumers continue to desire to include complementary medicines/natural health products/dietary supplements in the health care options, countries throughout the world will need to develop and implement appropriate regulatory frameworks. These frameworks will need to balance the question of access with the need to ensure that products are safe and of high quality. While regulatory frameworks will need to reflect domestic needs, other needs will have to be addressed in order to reflect the global nature of the marketplace. These include, but are not restricted to, the need to standardize and harmonize such issues as: efficacy testing and labeling, as well as –enhanced regulatory cooperation and harmonization of regulatory standards among countries. Addressing the latter will undoubtedly aid the use of natural health products as being a credible and viable strategy within a complementary health care option.

Table 1

Country	Details of the Regulatory Framework
Australia	Products are referred to as complementary medicines and are legally present as either listed or regulated products. Listed complementary medicines are managed through the Electronic Listing Facility (ELF) with new substances evaluated for safety and quality pre-market. Evidence for efficacy is assured through a post-market audit system. Registered complementary medicines are evaluated pre-market for safety, quality and efficacy. Manufacturers of both Listed and Registered complementary medicines must undergo an on-site audit to ensure Good Manufacturing Practices (GMP).
Brazil	Herbal products are the primary type of complementary medicines/natural health products

	regulated in Brazil. In these cases a similar situation exists for these products as with other types of medicines. Efficacy and safety can be demonstrated by a number of means including clinical data, pre-clinical tests and in some cases traditional use. Producers must be GMP certified.
Canada	Products are known as Natural Health Products and undergo a full pre-market assessment for safety, quality and efficacy. This is done in part through an online submissions process and regulatory monographs. While appropriate GMP is necessary with a site licence required before a product is brought to market, an on site audit is not required.
China	In China, Traditional Chinese Medicines (TCMs) are regulated in a focused manner with mandatory GMP oversight. Claims and standards are referenced in part through a pharmacopeial process with significant resources put into science and research development. Products typically included in this category such as Western Herbal Medicines are not regulated under a specific product stream.
European Union	Countries within the European Union currently have different regulatory frameworks in place for the category of complementary medicine/natural health product. There are initiatives underway to harmonize these regulatory approaches. To date, the most advanced initiative refers to herbal medicines where a requirement of a common regulatory approach is identified under EU Directives 2004/24/EC amending 2001/83/E, due to be fully implemented by 2011 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:136:0085:0090:EN:PDF
United States	The vast majority of products in the category are referred to as dietary supplements and are regulated as a subset of foods. While there is no pre-market element to this regulatory approach, sponsors must keep evidence on hand with regards to their products. Dietary supplements can not make treatment claims and must carry a disclaimer that they have not been reviewed by the Food and Drugs Administration. In 2007, a post market site audit process was initiated together with reporting of Adverse Drug Reactions by manufacturers.

References

Australian Therapeutic Goods Administration <http://www.tga.gov.au/cm/cm.htm>

European Food Safety Authority. Guidance on Safety assessment of botanicals and botanical preparations intended for use as ingredients in food supplements - go to http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1211902880131.htm

European Food Safety Authority. Advice on the EFSA guidance document for the safety assessment of botanicals and botanical preparations intended for use as food supplements, based on real case studies - http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1211902880387.htm

Health Canada, Natural Health Products Directorate <http://www.hc-sc.gc.ca/dhp-mps/prodnatur/index-eng.php>

World Health Organisation. National Policy on Traditional Medicine and Regulation of Herbal Medicines. May 2005. Geneva

World Health Organisation (WHO), Traditional Medicine <http://www.who.int/medicines/areas/traditional/en/index.html>

US National Centre of Complementary Medicine, National Institutes of Health <http://nccam.nih.gov/>

Acknowledgements

Michael Smith, Head, Office of Complementary Medicines, Therapeutic Goods Administration, Australia is thanked for his help in writing this paper.

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