

IN-DEPTH

Life Sciences Law

SINGAPORE

LEXOLOGY



Life Sciences Law

EDITION 12

Contributing Editor

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In-Depth: Life Sciences Law (formerly The Life Sciences Law Review) is an overview of the legal and regulatory frameworks governing pharmaceutical, biotechnology and medical device companies in key jurisdictions worldwide. It covers the major rules and restrictions throughout the life cycle of regulated products, from discovery to clinical trials, the marketing authorisation process and post-approval controls. It also examines the most consequential recent trends and developments in the sector.

Generated: March 4, 2024

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Singapore

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Introduction

The life sciences industry in Singapore is regulated by the Health Sciences Authority (HSA),^[2] operating under the oversight of the Singapore Ministry of Health (MOH). The licensing of healthcare services, healthcare institutions including hospitals, laboratories, clinics, are all licensed under the new Healthcare Services Act (HCSA). The HCSA and its subsidiary legislation set out detailed requirements for the provision of healthcare services, including both inpatient and outpatient, and through remote means such as telehealth. The HCSA was implemented in phases to replace the Private Hospitals and Medical Clinics Act (PHMCA). The third and final phase of the HCSA has just been implemented on 18 December 2023. With that, the PHMCA has been repealed.

Regulation of health products such as pharmaceuticals, cosmetics and medical devices falls under the purview of the HSA.

The regulatory framework for medicinal and other health-related products consists of the Health Products Act 2007 (HPA), the Medicines Act 1975 (MA), the Medicines (Advertisement and Sale) Act 1955, the Poisons Act 1938 and the Sale of Drugs Act 1914. The Singapore Medical Council (SMC) regulates registered medical practitioners.^[3] The SMC Ethical Code and Ethical Guidelines (ECEG 2016) set ethical benchmarks for medical practitioners.

Human biomedical research is regulated by the Human Biomedical Research Act 2015 (HBRA) and its subsidiary legislation. The legislation is supplemented by the Ethics Guidelines for Human Biomedical Research (the Ethics Guidelines) of the Bioethics Advisory Committee (BAC).

Year in review

To keep pace with the rapidly-developing covid-19 landscape, the HSA implemented the Pandemic Special Access Route (PSAR) in December 2020 to facilitate early access to critical novel vaccines, medicines and medical devices during a pandemic.^[4] The purpose was to start early evaluation of new vaccines, medicines and medical devices from early stages of clinical studies, as it starts the evaluation as and when real-time data is submitted by companies.

In the past year, given that both Pfizer-BioNTech and Moderna have both successfully obtained full registration, the HSA announced in April 2023 that it would no longer receive applications for interim authorisation under the PSAR.^[5] This is especially so given that covid-19 is now considered endemic (and no longer pandemic). It remains to be seen whether Sinovac-CoronaVac will also be applying for full registration, given that the National Vaccine Programme for it will lapse by 30 September 2024.^[6]

Telehealth has seen a prolific acceleration in the number of service providers and market penetration. Telehealth providers are coming on board to provide care not just for the common ailments such as coughs and colds, but also chronic diseases such as hypertension and diabetes, post-surgery care advice, cardiac rehabilitative care, physiotherapy and speech therapy, just to name a few. Previously, telehealth providers operated under a regulatory sandbox in 2018 (the Licensing Experimentation and

Adaptation Programme (LEAP) Regulatory Sandbox). The licensing of direct telehealth providers (doctors and dentists offering teleconsultations and organisations that provide such services) are now licensed under the phased implementation of the HCSA as of 26 June 2023.^[7] Regulatory guidance has been issued on the supply of registered therapeutic products through e-pharmacy, which prescribe requirements for the handling, storing and packing of medication and IT security, among other things.^[8] This marks the completion of Phase 2 of the HCSA.

A key concern for the digitisation of healthcare is data privacy and security. An Accenture survey showed that data privacy and security are priorities for Singaporeans, and the increase in virtual care during the pandemic has made them consider their data privacy and security needs.^[9] Since Singapore's worst cyberattack in 2018, which occurred within the database of Singapore's largest group of healthcare institutions and resulted in the theft of personal particulars of 1.5 million patients, the targeting of patient data remains a live threat. There have been numerous other examples, including ransomware attacks and data breaches, that have heightened public scrutiny on the frameworks in place to safeguard confidential data, especially with the increased prevalence of data use across the healthcare sector.

The Personal Data Protection Commission (PDPC) takes enforcement action regularly against both institutions and individuals where personal data has been compromised. In addition to offences under the Personal Data Protection Act 2012 (PDPA), individuals may also be liable for offences under Computer Misuse Act (CMA) for unauthorised access of computer material, unauthorised use of computer material and unauthorised modification of computer material. Healthcare practitioners such as doctors and dentists may also be liable for disciplinary proceedings by their respective professional boards for professional misconduct in relation to the unauthorised access and misuse of patient information. In more egregious offences, healthcare practitioners may even face suspension.

In fact, almost every year, there are reports where healthcare personal data has been compromised. For example, in June 2023, the Personal Data Protection Commission imposed a financial penalty on a leading healthcare group and its data outsourcing provider^[10] after its server was hacked in 2021 and the customer data (identity numbers, telephone numbers, financial details, health information) was found to be put up for sale on the dark web. The server breach impacted more than 150,000 patients, employees and corporate clients. In addition to the financial penalty, the healthcare group was also directed to, among other things, review its internal processes for collection of personal data. The decision underscores the 'need for organisations to conduct periodic security reviews of their IT systems'.

More recently, in November 2023, the websites of public healthcare institutions in Singapore were subject to an intentional and malicious distributed denial-of-service (DDoS) attack.^[11] A DDoS attack disrupts or prevents access to a website by flooding the server with unusually high volume of traffic. During this period of time, public users were unable to access the websites of public healthcare institutions. Fortunately, as patient data and information was kept separate from the public healthcare institutions' private data, the medical practitioners were still able to access patient data and information from the internal servers and continue clinical services and operations uninterrupted. This is a positive sign that the public healthcare institutions have implemented protective measures to ensure

that patient care is not compromised even when faced with malicious attacks on its external websites.^[12]

The year 2023 also witnessed novel inventions combining technology with healthcare. This year, a team of researchers from the National University of Singapore (NUS) and A*STAR's Institute of Materials Research and Engineering developed a thin, paper-like sensor patch to determine a patient's wound healing status within 15 minutes. The sensor patch measures biomarkers which are then analysed by an AI algorithm to ascertain the wound-healing status with 97 per cent accuracy. As of December 2023, the research team has filed an international patent for the sensor patch, and the plan is to advance to human clinical trials next.

The invention of the sensor patch has wider implications for Singapore as it potentially addresses some of Singapore's pressing concerns arising from the shortage of healthcare workers coupled with the ageing population. Firstly, it alleviates the physical stress on the healthcare system as doctors and patients can monitor a patient's wound more regularly and easily without the need for physical consultations. Secondly, the sensor patch will also help to meet the growing demand for convenient and timely management of injuries via remote means.

Regulatory regime

Control of all medicinal products, devices and substances falls under the purview of the HSA. The HPA governs the regulation of therapeutic products, medical devices, cosmetic products and cell, tissue and gene therapy products as part of the HSA's continuing efforts to consolidate the regulation of health products into one Act. The MA regulates medicinal products (such as complementary health products, including traditional medicines, homeopathic medicines and quasi-medicinal products). The Poisons Act regulates specific substances (excluding use in medicines supplied by medical practitioners),^[13] whereas the Sale of Drugs Act regulates the sale of any substance or mixture of substances used as a medicine.

Separately, healthcare professionals are governed by their respective professional boards, which fall under the auspices of the MOH. Each profession is self-regulated and the respective professional boards have issued their own guidelines and practice circulars to supplement the statutory framework.^[14] To ensure consistency across the regulation of all healthcare professionals, a single Secretariat of Healthcare Professional Boards (SPB) has been established to oversee the secretariat and operational functions of 11 professional boards with effect from 1 January 2020.^[15] The SPB is intended to streamline the regulatory framework for all healthcare professionals to bring about 'better efficiency and productivity across all the professional boards'.^[16]

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i Classification

The regulatory regime classifies relevant products into the following categories:

1. medicinal products used to treat or prevent disease, to diagnose disease, for contraception, to induce anaesthesia, etc.;^[17]
2. medical devices used for the diagnosis, prevention, monitoring, treatment or alleviation of disease not through pharmacological, immunological or metabolic means;^[18]
3. cosmetic products used on the external parts of the human body to clean, perfume, change appearance, etc.;^[19]
4. therapeutic products used for a therapeutic, preventive, palliative or diagnostic purpose that is constituted by certain specified chemical and biological active ingredients, etc.;^[20]
5. cell, tissue and gene therapy products;^[21] and
6. complementary health products, including Chinese proprietary medicines and traditional medicines.^[22]

Food and supplements of a food nature (including food-based complementary health products) fall under the purview of the Singapore Food Agency (SFA) and are regulated under the Sale of Food Act 1973. If there is ambiguity in classifying a product as a food or health product, clarification should be sought from either the HSA or the SFA, depending on whether the product appears to be part of a daily diet, taken as supplement to a diet, or taken for medicinal purposes.^[23]

For devices used primarily for aesthetic purposes (e.g., lasers for skin tightening and dermabrasion), the Aesthetics Practice Oversight Committee (APOC) has revised its Guidelines of Aesthetic Practices (the APOC Guidelines),^[24] which doctors have to abide by to carry out any of the procedures listed therein.

ii Non-clinical studies

In vitro human biomedical research

The HBRA, which regulates the conduct of human biomedical research, first came into force on 1 July 2016 (the first phase) and was enforced in stages. On 1 January 2017, provisions prohibiting the commercial trading of, and the advertising of commercial trading of, human tissue came into force (the second phase). Notably, commercial trading of human tissue was outlawed and offenders may be fined up to S\$100,000 or imprisoned for up to 10 years, or both.^[25] In the third phase, which commenced on 1 November 2017, provisions on the regulation of human biomedical research took effect.^[26] These include the taking of consent, and the constitution of institutional review boards (IRBs)^[27] in relevant research institutions as part of the system of 'self-accountability' for reviewing research proposals.

The next phase (the fourth phase) came into force in 2019. Under this phase, provisions on the regulation of human tissue research are now effective.^[28] Subsidiary legislation regulating tissue banking includes the Human Biomedical Research (Tissue Banking) Regulations 2019 and the Human Biomedical Research (Tissue Banking and Notification – Exemption) Regulations 2019. The legislative framework serves to regulate, among other things, the duties of tissue banks, such as to notify the Director of Medical Services of its activities,^[29] to maintain a record containing a detailed description of the condition of each tissue under the tissue bank's supervision and control,^[30] to establish a system to ensure the quality and safety of any tissue under the tissue bank's supervision and control,^[31] and restrictions on disclosure of information on tissue donors.^[32]

Other provisions of the HBRA relate to codes of practice and ethics, and enforcement powers with respect to activities that contravene the HBRA or any relevant codes of practice or ethics^[33] or are contrary to public interest.^[34]

Subsidiary legislation regulating human biomedical research includes the Human Biomedical Research Regulations 2017, the Human Biomedical Research (Restricted Research) Regulations 2017 and the Human Biomedical Research (Requirements for Appropriate Consent – Exemption) Regulations 2019. Read with the HBRA, this legislation cumulatively regulates the conduct of human biomedical research, and subjects certain types of research to stricter controls, such as research involving human eggs or embryos, human-animal combination embryos, and the introduction of human stem cells (pluripotent or not) into animals.^[35] Ethically unacceptable human biomedical research, such as the implantation of human-animal embryos into both human beings and animals, is also prohibited under the legislation.^[36]

The BAC revised its Ethics Guidelines for Human Biomedical Research in October 2021.^[37] These Ethics Guidelines do not have statutory force but operate alongside the HBRA subsidiary legislation to provide guidance and emphasise the fundamental principles of solidarity, respect for persons, justice, proportionality, sustainability, beneficence and research integrity.^[38]

For the creation of human embryos under the Human Cloning and Other Prohibited Practices Act 2004, the development of a human embryo created other than via fertilisation of a human egg by human sperm, for a period of more than 14 days, is prohibited.^[39]

Written approval from the Director of Medical Services must be obtained^[40] for all research involving human embryos, human oocytes^[41] and human–animal combination gametes or embryos.^[42]

Animal models

Any research facility that uses animals for scientific purposes must obtain a licence from the Animal and Veterinary Services (AVS). Further, the research facility must comply with the National Advisory Committee for Laboratory Animal Research Guidelines on the Care and Use of Animals for Scientific Purposes and allow AVS to carry out inspection of the research facilities. The facility must also establish an Institutional Animal Care and Use Committee to oversee and evaluate its animal care and use programmes.^[43]

Singapore adheres to the Organisation for Economic Co-operation and Development (OECD) Mutual Acceptance of Data scheme. Acceptance of this harmonising scheme amounts to an endorsement that Singapore-generated research data complies with the OECD's Principles of Good Laboratory Practice. Such data can be accepted automatically by other OECD countries, facilitating the sharing of research.

iii Clinical trials

Therapeutic and medicinal products

The Health Products (Clinical Trials) Regulations 2016 sets out the assessment regime for clinical trials. A clinical trial of a therapeutic product may either require a clinical trial authorisation (CTA) or a clinical trial notification (CTN),^[44] depending on the risk classification of the therapeutic product. A high-risk therapeutic product is a product that is locally unregistered or its use is unapproved, and therefore requires a CTA. Low-risk therapeutic products only require a CTN, as the products have already been reviewed by the HSA for product registration. A CTN can be obtained in a shorter time than a CTA because low-risk therapeutic products undergo a simplified regulatory screening and verification process. For the clinical trial of medicinal products, a Clinical Trial Certificate (CTC) in accordance with the Medicines Act is still necessary.^[45]

Under the CTC and CTA/CTN regimes for medicinal products and therapeutic products respectively, a sponsor is mandatory.^[46] Insurance must be maintained to provide for compensation in the event of injury or loss.^[47]

Medical devices

A CTC or a CTA/CTN is not necessary for studies assessing the safety, performance or effectiveness of a medical device.^[48] Prior approval by each institution's IRB is, however, still required.^[49] The Health Products (Medical Device) Regulations (HP(MD)R) also regulate the use of medical devices in clinical trials.^[50]

Ethical considerations

The ECEG 2016 stipulates that a doctor must not offer patients remedies that are not generally accepted by the profession, except in the context of a formal and approved clinical trial.^[51] The term 'remedy' encompasses a broad range of treatments, including the use of medical devices.^[52] Under the ECEG 2016, doctors may offer innovative therapy^[53] to patients in desperate or dire situations, and where conventional therapy is unhelpful.^[54] Patients' informed consent must be obtained; failing to do so can result in the doctor

being struck off the Register of Medical Practitioners.^[55] The ECEG 2016 further mandates that any medical research must be approved by an ethics committee and conform to the Singapore Guidelines for Good Clinical Practice.^[56]

Additionally, the HSA's Guideline on Alternative Measures for Investigational Product Management for Investigator-Initiated Clinical Trials helps to overcome difficulties faced in managing investigational products without contravening the principles of the aforementioned Guidelines for Good Clinical Practice.^[57]

Privacy issues

Privacy issues arising out of clinical trials are regulated under the Personal Data Protection Act^[58] and the relevant subsidiary legislation of the MA and HPA.^[59]

iv Named-patient and compassionate-use procedures

The Health Products (Therapeutic Products) Regulations (HP(TP)R) allow imports of therapeutic products for use on a named-patient exemption basis. Under this exemption,^[60] the importer's and wholesaler's licences are not required for the import of an unregistered therapeutic product that is required by a healthcare institution or a pharmacy holding the relevant licences or a qualified practitioner.^[61] However, prior approval from the HSA must be sought.^[62] For a company acting on behalf of a hospital or clinic to import therapeutic products on this exemption basis, the importer's and wholesaler's licences must still be obtained.^[63]

The HSA's Guidance on the Requirements for Exemption from Product Registration for Import of an Unregistered Medical Device for Supply on a Named-Patient Basis further allows licensed qualified practitioners to seek approval for the supply of unregistered medical devices in an emergency, or in circumstances in which conventional therapies have failed. These applications are made to the HSA and the HSA's approval is conditional upon, inter alia, the requirement to report adverse events arising from the use of such medical devices.^[64]

The Human Biomedical Research (Requirements for Appropriate Consent – Exemption) Regulations 2019 has reduced the elements of 'appropriate consent' required when the tissue donor's tissue is being removed primarily for a therapeutic or diagnostic purpose (i.e., consent taking in the presence of a prescribed witness under Section 6(d) of the HBRA), but this exemption does not extend to tissue use for restricted biomedical research.^[65]

v Pre-market clearance

Therapeutic products

Therapeutic products are divided into two broad categories for registration in Singapore: a new drug application (NDA) and a generic drug application (GDA). Pursuant to the Guidance on Therapeutic Product Registration in Singapore, companies are subject to screening and regulatory evaluation before obtaining a licence for a therapeutic product.

Depending on whether the NDA or GDA has been previously evaluated and approved, as well as the subcategory of the NDA or GDA,^[66] the screening and evaluation fees may be abridged.

Applicants seeking approval for an NDA that has been approved by at least one drug regulatory agency at the time of submission may also apply for priority review, which will be granted if the drug is intended for treatment of a serious life-threatening condition and can potentially address local unmet medical needs,^[67] or there is currently a local public health concern.

Medical devices

The HPA and HP(MD)R require medical devices, other than those exempted in the aforesaid regulations, to be registered with the HSA prior to being placed on the Singapore market. There are four risk classes for the classification of general medical devices.^[68]

Several notable amendments to the HP(MD)R came into force in 2018. Product registration is no longer required for Class A medical devices (low-risk) that are manufactured, imported or obtained from a validly licensed manufacturer, importer or supplier.^[69] An abridged evaluation process for registration has been provided for the other three classes, to allow faster market access.^[70] New categories of exceptions for the manufacture of medical devices without a licence have been introduced, namely for clinical labs already licensed under the PHMCA,^[71] and where the supply of medical devices is intended for charitable purposes.^[72] The category of implantable medical devices has been expanded to include orthopaedic, neurological, breast, intraocular and cardiovascular implants.^[73] In another amendment, wellness devices have been expressly excluded from the HP(MD)R.^[74]

All medical devices must be evaluated by the HSA. The HSA must be satisfied of two criteria before registering a medical device: (1) that the overall intended benefits of the medical device outweigh the overall risks; and (2) based on the conformity of the medical device with the safety and performance requirements set out on the HSA's website, that the medical device is suitable for its intended purpose and that any risk associated with its use is minimised.^[75] Requirements under all applicable legislation^[76] for the supply and use of any medical devices must also be met. Additionally, for medical practitioners, the APOC Guidelines set out the minimum level of competence required for the operation of certain medical devices in aesthetic procedures.^[77]

The Association of Southeast Asian Nations (ASEAN) has developed a standardised framework for regulating medical devices – the ASEAN Agreement on Medical Device Directive (AMDD). Under the AMDD, only registered medical devices that conform to its standards are allowed in the Member States' markets.^[78] The standardisation of regulation allows for the efficient trading of medical devices among ASEAN states, though the AMDD has yet to be fully implemented as Member States are still aligning the AMDD with their local legislation. Additionally, the ASEAN Product Working Group for Traditional Medicines and Health Supplements was established in 2004 with the aim of harmonising technical requirements, exploring possible mutual recognition arrangements and eliminating technical barriers to trade for traditional medicine and health supplements without compromising the health and safety of the users. Once these harmonisation efforts come to fruition, life sciences companies will enjoy easier access to the entire ASEAN market.

Cosmetic products

With the implementation of the ASEAN Cosmetic Directive, manufacturer and import licences are no longer required.^[79] Instead, the HSA must be notified before the supply or sale of the cosmetic product.^[80] Acknowledgement of a product notification does not constitute an agreement that the product has met all regulatory requirements. The onus is on the company responsible for placing the product on the market to ensure that it meets the requirements of the ASEAN Cosmetic Directive.^[81] However, the person who is supplying the cosmetic product in Singapore cannot do so unless a prior notification has already been submitted.^[82] Both the person placing the product on the market and the person supplying the cosmetic product in Singapore may be liable for offences under the Health Products (Cosmetic Products – ASEAN Cosmetic Directive) Regulations 2007 if they fail to comply with these requirements. Only a Singapore-registered company can file a product notification, subject to payment of varying fees based on the risk level of the cosmetic products.^[83]

Traditional medicines, homeopathic medicines and health supplements

Traditional medicines (e.g., traditional Malay and Indian medicines), homeopathic medicines and health supplements are not subject to pre-marketing approval or licensing for their import, manufacture or sale in Singapore. Dealers and sellers of this category of medicines are responsible for ensuring their safety and quality.^[84]

Chinese proprietary medicine

Under the Medicines Act, Chinese proprietary medicine dealers must obtain approval from the HSA prior to the import, export, sale or supply of Chinese proprietary medicine.^[85]

Cell, tissue and gene therapy products

Cell, tissue and gene therapy (CTGT) products are regulated under the Health Products (Cell, Tissue and Gene Therapy Products) Regulations 2021 which came into effect on 1 March 2021.^[86] CTGT products are separated into two classes according to risk levels: Class 1 CTGT products are the result of only minimal manipulation of human cell or tissue and intended for homologous use, and are therefore classified as low risk, while Class 2 CTGT products are all other CTGT products and are classified as high risk. For the import, wholesale or manufacture of Class 1 CTGT products, only a dealer's notification has to be submitted to HSA.^[87] A dealer's licence is required to import, wholesale or manufacture Class 2 CTGT products.^[88] Under the Health Products (Exemptions) Order 2016, as amended by the Health Products (Exemptions) (Amendment) Order 2021,^[89] there are certain exemptions to the regulations relating to CTGT products, such as where the CTGT product is manufactured, imported or supplied by wholesale as clinical research material.

Biosimilar medicinal products

To be registered as a biosimilar medicinal product, the product must fall under the definition of a 'biosimilar product' in the HSA's Guidance on Registration of Biosimilar Products in Singapore.^[90] Typically, a biosimilar product is eligible for registration through an abridged evaluation route.

vi Regulatory incentives

The Patents Act 1994 allows for a one-off patent extension of up to five years for pharmaceutical products in a limited exception.^[91]

The HP(TP)R^[92] and MA^[93] provide for a data exclusivity regime over a five-year period. The data provided by the company to the HSA is protected by the HSA, which is obliged to take reasonable steps to ensure that the data submitted remains confidential and is not used when evaluating the grant of any other application.

vii Post-approval controls

Therapeutic products

The product licence holder must put in place a system to ensure responsibility and liability for its products on the market and be able to take appropriate action, if necessary. For therapeutic products, the duty to maintain records and report defects and adverse effects is now required by legislation. Every manufacturer, importer, supplier or registrant of a therapeutic product must report the defect to the HSA as soon as it is identified.^[94]

Under the HPA^[95] and MA,^[96] the HSA has the power to suspend, revoke or vary licences. A licence may be revoked at the request of the licence holder, or if the HSA is satisfied that there is an infringement of a patent, or if there was fraud or misrepresentation in the application process.

Medical devices

Registrants of medical devices are required to notify the HSA of any changes to particulars provided in relation to the registration of the medical devices, or changes that may affect the safety, quality or efficacy of a registered medical device.^[97] In addition, registrants must report any defects or adverse effects that occur in connection with the medical device.

The HSA may also suspend or cancel the registration of a health product (including medical devices) if there is suspicion of fraud or misrepresentation in the first instance or safety concerns in the use of the health product.^[98]

Cosmetic products

The manufacturer, importer, supplier or registrant of a health product or any cosmetic product has a duty to inform the HSA in the event of any defect or adverse effect arising from the use of the health product. Further, persons or companies supplying a product to the market must retain a product information file, which includes key information about the product's composition and safety assessments.^[99]

As with other health products, the HSA has the power to suspend, cancel or reclassify the registration of cosmetic products, as set out above.^[100]

viii Manufacturing controls

A valid licence from the HSA is required for the manufacturing of health products and medicinal products under the HPA and MA, respectively.^[101] For therapeutic products, under the HP(TP)R, a manufacturer's licence will only be granted when the manufacturing facilities have been audited and found to comply with the Pharmaceutical Inspection Convention or Cooperation Scheme Guide to Good Manufacturing Practice for Medicinal Products.^[102] For medical devices, an ISO 13485 certificate for finished medical device manufacturing is required to obtain a manufacturer's licence. Additionally, a manufacturer of medical devices must comply with the requirements set out in HSA website.^[103]

Cosmetic products manufactured in Singapore must comply with Appendix VI of the ASEAN Cosmetic Documents entitled 'ASEAN Guidelines for Cosmetic Good Manufacturing Practice'.

ix Advertising and promotion

It is an offence under the HPA and MA to issue false or misleading advertisements relating to therapeutic products or medicinal products.^[104]

Unlike medicinal products, prior approval from the HSA is not required for advertisements relating to therapeutic products.^[105] Advertisement of therapeutic products is governed by the HPA and the Health Products (Advertisement of Therapeutic Products) Regulations (HP(ATP)R). The onus is on the advertiser to ensure compliance with rules under the HP(ATP)R, with the HSA undertaking a monitoring role to ensure due compliance. Advertisements for both medicinal products and therapeutic products must not claim to prevent, alleviate or cure certain diseases or conditions specified in the First Schedule to the MA and the Third Schedule to the HP(ATP)R, respectively.^[106]

Advertisements and promotions of medical devices also do not require prior approval from the HSA, but such advertisements must not be false or misleading, and must be capable of verification by objective evidence, pursuant to the HP(MD)R.^[107]

With regard to cosmetic products, advertisements cannot include claims that they have therapeutic benefits or can be used for therapeutic purposes,^[108] nor can they create an erroneous impression regarding the formulation, composition, quality or safety of the product.^[109]

The ECEG 2016 also prohibits doctors from associating themselves with 'parties that do not provide legitimate medical or medical support services in a way which could mislead the public into believing that any of the services are medically endorsed'.^[110] Doctors are only allowed to promote food, vitamins, tonics and health and nutrition supplements if there is sufficient scientific basis or if they are generally accepted by the medical profession.^[111]

x Distributors and wholesalers

Any person (except for licensed manufacturers) must apply for the relevant wholesaler's licence for the resale of registered therapeutic products or medical devices^[112] or wholesale dealer's licence for medicinal products.^[113] A licensee for a therapeutic product must appoint a responsible person to ensure compliance with the HSA's good distribution practice (GDP).^[114] The licence for medicinal products will only be granted if the company has been audited and found to comply with the HSA's GDP.

With regard to medical devices, a wholesaler must possess either a GDP for medical devices certificate or ISO 13485 certificate with the scope for storage and distribution.^[115] A licensed local manufacturer does not require a wholesaler's licence to supply, by wholesale, any medical devices it manufactures.

In respect of cosmetic devices, the company responsible for supplying the cosmetic product in the market must notify the HSA before doing so.

xi Classification of products

The classification of therapeutic products is carried out by the Therapeutic Products Branch, a department of the HSA. Therapeutic products are classified under three forensic classes: prescription-only medicines, pharmacy-only medicines and general sales list medicines.

Therapeutic products may be reclassified if the product has been deemed sufficiently safe for use with reduced, or without, medical supervision. The reclassification may be effected by an application by the party who registered the therapeutic product or through legislative mechanisms.^[116]

Introduced in 2018, the collaborative prescribing service will allow collaborative prescribing practitioners (e.g., accredited pharmacists and nurses) to prescribe and dispense pharmacy-only and prescription-only medicines without having a medical practitioner sign them off. This will save both time and costs for patients and also ease the patient load on the already stretched healthcare system.^[117]

xii Imports and exports

Under the HPA, a person must now obtain an importer's licence to import therapeutic products or medical devices,^[118] and a wholesaler's licence to export them.^[119] Importers and exporters of therapeutic products must also appoint a person to be responsible for ensuring compliance with the HSA's GDP standards.^[120] This requirement of a responsible person does not extend to importers and exporters of medical devices, although they must possess either a GDP for medical devices certificate or ISO 13485 certificate with the scope for storage and distribution.^[121]

Imports and exports of medicinal products remain under the purview of the MA, and importers of such products require either a product licence or an import licence, while exporters require a product licence.^[122]

xiii Controlled substances

As a party to both the 1961 United Nations Single Convention on Narcotic Drugs and 1971 United Nations Convention on Psychotropic Drugs, Singapore conforms to the international control measures provided in both conventions.^[123] The Misuse of Drugs Act makes it an offence to import, export or traffic controlled drugs, or to import, export or supply controlled equipment, materials or substances if one knows or has reason to believe that they are to be used in or for the manufacture of a controlled drug.

To import or export controlled drugs^[124] and psychotropic substances or medicinal products with psychotropic substances,^[125] an applicant must obtain an import or export licence from the HSA, and the purpose of the import or export will be assessed before the licence is processed and issued.^[126]

xiv Enforcement

The HSA has the right of entry into premises for the purpose of ascertaining whether there is, or has been, any contravention of the MA. Any duly authorised person has the power to inspect, take samples and seize goods and documents to ascertain whether any contravention of the MA has taken place.

Under the HPA, an enforcement officer may, at any time and without warrant, enter, inspect and search a premise if there is reason to suspect a contravention of the HPA. The enforcement officer may also seize items, require a person to furnish information or documents in his or her knowledge, or arrest, without warrant, a person who is believed to have committed an offence under the HPA.^[127]

With regard to private hospitals and medical clinics, the MOH's Director of Medical Services or any authorised enforcement officer may, at any time and without warrant, enter, inspect and search any premises if there is reasonable cause to suspect a contravention of the Private Hospitals and Medical Clinics Act 1980, or to assess the quality and appropriateness of the services provided, and the practices carried out in those establishments, including clinical laboratories.^[128]

Pricing and reimbursement

Apart from a national medical savings scheme (Medisave) and a health insurance scheme for Singapore citizens and permanent residents (Medishield Life),^[129] patients receive drug subsidies based on their paying status and the scheme under which the drug is covered (e.g., the Standard Drug List and Medication Assistance Fund).^[130] Subsidised drugs cover up to 90 per cent of the total volume of public medication prescriptions and are reviewed and updated regularly by the MOH.^[131] Subsidies are also provided for medical devices, such as implants.^[132] In 2014, the government launched the Pioneer Generation Package, which provides senior citizens who were born before 1950 and obtained citizenship before 1987 with additional discounts on subsidised medications, as well as subsidies on their Medishield Life premiums.^[133] In August 2018, the government launched the Merdeka Generation Package for Singaporeans born in the 1950s, to help them cope with healthcare and other expenses, covering areas such as outpatient subsidies, Medisave account top-ups, MediShield Life premium subsidies and payouts for long-term care.^[134] In 2023, the government extended certain benefits to lower and middle income Singaporeans aged 50 and above (as of 2023).^[135]

Health technology assessments are carried out by the Healthcare Technology Assessment (HTA) Unit under the auspices of the MOH. As part of its health technology assessments, the HTA Unit carries out reviews and cost-effectiveness analyses, and develops clinical practice guidelines in Singapore.^[136]

Administrative and judicial remedies

Any person aggrieved by the HSA's decision in relation to granting, renewing or revoking a licence, or the registration of a health product, may appeal to the Minister of Health, whose decision is final.^[137]

Notwithstanding the finality of the Minister's decision, applicants may apply for a judicial review of the Minister's decision in accordance with common law administrative law principles; for example, where the Minister's decision has exceeded its jurisdiction or where the Minister reached his or her decision in breach of the rules of natural justice.

Financial relationships with prescribers and payers

The Singapore Association of Pharmaceutical Industries' Code of Marketing Practices guides the conduct of marketing and promotion of medicinal and therapeutic products in Singapore and serves as the basis for regulation within the industry.^[138]

The ECEG 2016 also provides guidance to doctors in relation to issues of financial conflicts of interest.^[139] While the requirements on disclosure of interests and prohibitions on exerting undue influence on patients still apply, the ECEG 2016 has expanded the scope of conflicts of interest to include the material interests of individuals close to doctors. Further, the practice of asking for fee kickbacks or other compensation in exchange for referring patients to other medical service professionals or healthcare facilities is prohibited under the ECEG 2016.^[140] Additionally, if the factual circumstances reveal a corrupt intent and the breach is egregious, this may potentially be an offence of corruption under the Prevention of Corruption Act 1960.^[141]

At present, doctors can only charge patients for fees paid to third-party administrators (TPAs) and managed care companies if the sums paid reflect the actual work they do and are not contingent on the services provided by the doctor or the amount of fees collected from patients.^[142] The rationale is to ensure that the patient's interests would take priority over the doctor's personal financial interests.^[143] Examples of TPA services include intermediary processing and managing of insurance claims and employer medical benefits. Historically, a large number of healthcare institutions would charge a fixed percentage of the total amount of the fees billed to patients for TPA services. The sharing or splitting of fees with a TPA or managed care company, merely for the privilege of being referred a patient with no commensurate work being done to justify the fees, is now considered unethical. In practice, whether the fees paid to a TPA would constitute an infringement of the ECEG 2016 would very much depend on the basis for the fees and the specific circumstances in each case. As a breach of the ECEG 2016 may lead to disciplinary sanctions against a doctor, some doctors have chosen to terminate their contracts with TPAs to avoid the risk of being sanctioned.

To give more clarity on the implementation of the new rules, the SMC has in various advisories stated that TPAs can still be paid a fee but the quantum must be commensurate to and fairly reflect the complexity of the actual work executed by the said third party. There also needs to be transparency to the patients about the fees payable to the TPA.^[144] In addition, the Academy of Medicine, the College of Family Physicians and the Singapore Medical Association have also jointly issued recommendations^[145] that doctors can consider a cap for TPA fees, a fixed methodology that allows TPAs to achieve a reasonable and appropriate profit margin, or a fee schedule for different scenarios to cater for the different types and complexities of work done by TPAs.

In late 2018, the local media reported that public hospitals retained the practice of engaging foreign agents who received payment from the public hospitals for 'administrative services' (i.e., to facilitate and assist foreign patients seeking medical treatment in Singapore for a certain percentage of the patient's hospital bill). The MOH requested that public hospitals terminate all contracts with such foreign agents. The MOH's position was that the 'priority of public healthcare institutions is to serve Singaporeans' healthcare needs', and they are 'not allowed to actively market themselves to foreign patients'.^[146] In light of the MOH announcement, there have been reports that foreign agents are turning to private practitioners and private hospitals for such referral arrangements.^[147]

The ECEG 2016 further provides more detailed guidelines on the relationships between doctors and the medical industry.^[148] In particular, financial reimbursements for doctors appearing at educational events must be fair, reasonable and commensurate with the time and expertise they have provided, and doctors must personally pay for any unrelated activities, additional stay or the costs of any accompanying persons. They also cannot accept extravagant gifts, hospitality or other inducements from companies that could be seen to potentially affect their decisions about patient care.

Special liability or compensation systems

The regulatory regime does not provide special liability or compensation schemes in relation to medical products. Accordingly, compensation for injuries arising from medicinal products and medical devices derives from common law or statute.^[149] Although rare, class actions are possible.^[150]

Transactional and competition issues

i Competition law

Competition issues arising out of the pharmaceutical and medical sector are regulated under the Competition Act 2004. The Competition and Consumer Commission of Singapore is the primary regulator in this space. It has the added function of administering the Consumer Protection (Fair Trading) Act 2003.^[151]

ii Transactional issues

In terms of strategic collaborations, Singapore provides diverse partnership opportunities with its public sector research institutes, leading pharmaceutical and biotechnology companies based in Singapore, clinical research units in hospitals, and international research organisations. Companies can also collaborate with scientists in Singapore's public sector institutes to work on developing new medical technology innovations and applications. In addition, the government provides funding in the life sciences industry: for example, S\$4 billion was pledged to further health and biomedical sciences research under the Research, Innovation and Enterprise 2020 plan.^[152] In the Research, Innovation and Enterprise 2025 plan, the government will build on this existing health and biomedical science capabilities through the human health and potential domain, incorporating a new emphasis on furthering human potential.^[153]

Outlook and conclusions

One of the key challenges for healthcare in Singapore is to find a balance between the 'iron triangle' of cost, accessibility and quality.^[154] These are pressing concerns, especially in the context of an ageing population and a resource crunch in healthcare workers and facilities.

Interestingly, the themes that drove developments in the healthcare sector during the pandemic, including the digitisation of healthcare and the adoption of new healthcare technologies, continue to be relevant to achieving this balance. The digitisation of healthcare is well supported by both private and public sector initiatives, and from the consumer perspective, convenience and efficiency are top motivators for digital adoption.^[155] As can be seen from the phased implementation of the HCSA which now regulates the licensing of telemedicine providers, the Singapore government is building the regulatory environment around the provision of digital healthcare. There will be novel liability issues arising from the remote provision of healthcare. For example, while telemedicine provides added convenience for both the medical practitioner and the patient, it also increases the risk of the medical practitioner missing difficult diagnoses because of the limitations of remote consultations.^[156] The regulatory landscape will continue to evolve in tandem with an increased emphasis on the remote assessment of health, diagnosis, treatment and intervention.

The turn towards remote provision of healthcare services and goods extends beyond medical practitioners and clinicians. Manufacturers, suppliers and retailers of wearable healthcare technologies, medical devices and pharmaceutical products are looking to leverage on e-commerce platforms to connect directly with the end consumer. Relevant considerations should include whether prescriptions are required, whether such products and devices are for professional use, and the relevant advertising regulations. One such example of wearable healthcare technologies is the LumiHealth programme developed by Health Promotion Board (HPB) in partnership with Apple Inc to encourage Singaporeans to lead healthier lives.^[157] Users of Apple Watches can participate in the programme to earn rewards by achieving specific health goals, which are tracked on their Apple Watches. Originally meant to be a 2-year pilot programme from October 2020 to September 2022, the programme has now been renewed and is a continuing programme. This is a prime example of healthcare initiatives leveraging on existing technology to collect and share health data.

The National Electronic Health Records (NEHR), a database owned by the MOH to collate and make available patient health records across different healthcare providers, has undergone a series of cybersecurity assessments to enhance its cybersecurity posture to address evolving cybersecurity threats.^[158] The MOH has also issued the Healthcare Cybersecurity Essentials to strengthen cybersecurity awareness and signal the importance of cybersecurity as a critical part of clinical operations.^[159] From the recent DDoS attack on our public healthcare institutions as recently as November 2023, it is apparent that there is a pressing need for organisations to continuously review and renew their security measures to combat cybersecurity attacks. Healthcare providers will continue to face challengers on all fronts – both from external malicious sources, and inherent flaws in the technology, electronic systems and cloud services.

Developments in artificial intelligence (AI)^[160] and 3D printing^[161] represent the next frontier in healthcare technology. The regulatory regime is playing catch up to these developments. In July 2021, the HSA Medical Devices Branch issued Regulatory Guidelines for 3D-Printed Medical Devices.^[162] In October 2021, the MOH, the HSA and the Integrated Health Information Systems co-developed the Artificial Intelligence Health Guidelines to guide the safe and ethical development and implementation of AI in the healthcare sector.^[163] Ethical issues on the deployment of AI and usage of 3D printing in healthcare will continue to trend. As mentioned in the earlier section, the sensor patch invention by NUS and A*STAR this year utilises AI to come up with a novel solution which addresses concerns not only on the medical front but also on the social and economic front by alleviating the physical stress on healthcare systems.

The replacement of the PHMCA with the upcoming HCSA has been recently completed with the implementation of Phase 3 of the HCSA on 18 December 2023.^[164] This will broaden the scope of regulatory coverage from the present hospitals, medical clinics and other healthcare institutions, to include allied health and non-physician healthcare, traditional medicine and complementary and alternative medicine. A new risk-based regulatory approach is expected to be adopted whereby licences, which were previously premise-based, are now to be issued based on the types of services provided, such as hospital services and long-term residential care services, among others. Better safeguards for patient safety and welfare will also be implemented. The MOH will be empowered to directly step in or appoint a step-in operator to take over a residential healthcare entity licensee that is in serious financial trouble, not complying with the provisions of the HCSA, or is otherwise carrying on its operations in a manner that is detrimental to the interests of patients or customers.^[165]

The Bill for the HCSA was passed in Parliament on 6 January 2020, and implementation was slated to be carried out in three phases from early 2021 to the end of 2022. As a result of the pandemic, the phased implementation was delayed to early 2022 to end of 2023. The first phase brought PHMCA laboratory licensees under HCSA's regulatory regime by January 2022,^[166] while the second phase, which involves medical clinics and other ambulatory care services, as well as ambulance services, was completed in June 2023. In the third and final phase that was implemented on 18 December 2023, hospital and long-term care services, as well as other new licensable services, will now be regulated by the HCSA.

In the recent years, the authorities have also faced increasing reports and concerns about electronic vaporisers. Electronic vaporisers, also known as e-cigarettes, are illegal

in Singapore. Yet, there has still been illegal usage of electronic vaporisers in Singapore, especially within the youth community. In 2022 alone, about 800 students were referred to the HSA for offences related to electronic vaporisers.^[167] This was a stark increase from 2018 and 2019, where the total for both years amounted to fewer than 50 offences. To combat this, the MOH, HPB and HSA have adopted a multipronged approach comprising legislation,^[168] public education, counselling and enforcement to curb the demand and supply of electronic vaporisers.^[169] In addition to more thorough investigations and checks to frustrate the illegal supply of electronic vaporisers in Singapore (a seizure of more than 85,000 electronic vaporisers was made in April 2023), there has also been community efforts to curb the demand of electronic vaporisers. In November 2023, the HPB collaborated with the community organisations to implement a programme where electronic vaporiser users may come forward and voluntarily give up their electronic vaporisers in exchange for HPB vouchers. They would also allow them to avoid penalties that would typically be imposed for electronic vaporiser offences.^[170] The authorities are closely monitoring the trends and holistically reviewing all strategies including legislated penalties, enforcement, deterrence and education measures on both demand and supply ends to curb the use of vaporisers.^[171]

Finally, given the recent spate of adverse events resulting from the use of aesthetic fillers, it would be interesting to monitor the development in this area, to see if the relevant authorities will implement any new regulations to ensure the safe use of aesthetic fillers.

Endnotes

- 1 Melanie Ho and Chang Man Phing are partners at WongPartnership LLP. ^ [Back to section](#)
- 2 A body established under the Health Sciences Authority Act 2001. ^ [Back to section](#)
- 3 Registered medical practitioners refer to doctors registered under the Medical Registration Act 1997. ^ [Back to section](#)
- 4 See [https://www.hsa.gov.sg/hsa-psar#:~:text=The%20Health%20Sciences%20Authority%20\(HSA,the%20current%20COVID%2D19%20pandemic](https://www.hsa.gov.sg/hsa-psar#:~:text=The%20Health%20Sciences%20Authority%20(HSA,the%20current%20COVID%2D19%20pandemic). ^ [Back to section](#)
- 5 See <https://www.hsa.gov.sg/therapeutic-products/register/special-access-routes/psar-emergency-therapeutic-product>. ^ [Back to section](#)
- 6 See <https://www.moh.gov.sg/news-highlights/details/rollout-of-updated-covid-19-monovalent-vaccines>. ^ [Back to section](#)
- 7 Division 2 of the Healthcare Services (Outpatient Medical Service) Regulations 2023; See <https://www.moh.gov.sg/licensing-and-regulation/telemedicine>. ^ [Back to section](#)
- 8 See <https://www.hsa.gov.sg/docs/default-source/hprg-ald/guide-mqa-032.pdf>; see also <https://www.hsa.gov.sg/therapeutic-products/retail-pharmacy-licence/supply-of-registered-therapeutic-products-through-e-pharmacy>. ^ [Back to section](#)

- 9 See https://www.accenture.com/_acnmedia/PDF-161/Accenture-Digital-Adoption-In-Healthcare.pdf. ^ [Back to section](#)
- 10 See [2023] SGPDPC 5. ^ [Back to section](#)
- 11 See <https://www.synapse.sg/media-releases/corporate/internet-connectivity-for-public-healthcare-institutions-affected-by-ddos-attack>. ^ [Back to section](#)
- 12 See <https://www.synapse.sg/media-releases/corporate/measures-to-strengthen-systems-and-processes-following-ddos-attack?fbclid=IwAR3PIkzpFQ8phCHyfh8ozednzXSBBUpZDVSGxxyz1PiDaHqLLmrRBdOU>. ^ [Back to section](#)
- 13 The Schedule (Poisons List) to and Section 7 of the Poisons Act. ^ [Back to section](#)
- 14 Examples of Professional Boards are the Singapore Medical Council (SMC), Singapore Dental Council, Singapore Nursing Board, Singapore Pharmacy Council, Traditional Chinese Medicine Practitioners Board, Optometrists and Opticians Board, Family Physicians Accreditation Board, Specialists Accreditation Board, Dental Specialists Accreditation Board and Pharmacy Specialists Accreditation Board. ^ [Back to section](#)
- 15 Ministry of Health Circular titled 'Provision of Shared Services by The Secretariat Of Healthcare Professional Boards (SPB) To All Healthcare Professional Board' dated 15 November 2019. ^ [Back to section](#)
- 16 Ministry of Health Circular titled 'Frequently Asked Questions on the New Amalgamated Secretariat of Healthcare Professional Boards (SPB)' dated 15 November 2019, FAQ 3. ^ [Back to section](#)
- 17 Medicines Act, Section 3. ^ [Back to section](#)
- 18 Paragraph 1 of the First Schedule to the HPA. ^ [Back to section](#)
- 19 Paragraph 2 of the First Schedule to the HPA. ^ [Back to section](#)
- 20 Paragraph 3 of the First Schedule to the HPA. ^ [Back to section](#)
- 21 Paragraph 5 of the First Schedule to the HPA. ^ [Back to section](#)
- 22 Paragraph 3(2) of the First Schedule to the HPA. ^ [Back to section](#)
- 23 <https://www.hsa.gov.sg/health-supplements/overview>. ^ [Back to section](#)

- 24** Aesthetic Practice Oversight Committee, Guidelines on Aesthetic Practices for Doctors (updated October 2016). The new Guidelines do not have retrospective effect. Incidents that occurred before 1 August 2016 will have to be referred to the 2008 Guidelines on Aesthetic Practices. ^ [Back to section](#)

- 25** Section 32 of HBRA. Section 32 of the HBRA does not apply to the trading of human organs and blood, which is separately prohibited under Section 14 of the Human Organ Transplant Act 1987. See also Public Prosecutor v. Tang Wee Sung [2008] SGDC 262. ^ [Back to section](#)

- 26** Sections 6–31, 65 and 68, and the Third, Fourth and Fifth Schedules to the HBRA. ^ [Back to section](#)

- 27** Institutional review boards (IRBs) are made up of no fewer than five individuals meeting the qualifications under Regulations 11 and 12 of the Human Biomedical Research Regulations 2017. The appointed IRB is to review the researchers and research proposals to ensure they comply with the HBRA 2015 and its subsidiary legislation. See also <https://www.moh.gov.sg/docs/librariesprovider5/legislation/hbra-faqs-17-apr-2018.pdf>. ^ [Back to section](#)

- 28** Human Biomedical Research Act 2015 (Commencement) Notification 2019 provides that Sections 34–36, 37–39 and 64 of the HBRA came into operation on 1 November 2019. ^ [Back to section](#)

- 29** Sections 34, 35(1) and 36 of the HBRA; Regulations 4–14 of the Human Biomedical Research (Tissue Banking) Regulations 2019. ^ [Back to section](#)

- 30** Section 35(2) of the HBRA; Regulation 22 of the Human Biomedical Research (Tissue Banking) Regulations 2019. ^ [Back to section](#)

- 31** Section 35(2) of the HBRA; Regulation 26 of the Human Biomedical Research (Tissue Banking) Regulations 2019. ^ [Back to section](#)

- 32** Section 39 of the HBRA; Regulation 16 of the Human Biomedical Research (Tissue Banking) Regulations 2019. ^ [Back to section](#)

- 33** Section 42(1)(b) of HBRA. ^ [Back to section](#)

- 34** Section 42(1)(d) of HBRA. ^ [Back to section](#)

- 35** Fourth Schedule to the HBRA. ^ [Back to section](#)

- 36** Third Schedule to the HBRA. ^ [Back to section](#)

- 37** See <https://www.bioethics-singapore.gov.sg/publications/publications/bacethicsguidelines2021>. ^ [Back to section](#)

- 38** BAC's Ethics Guidelines (October 2021) at Paragraphs 2.3–2.17. [^ Back to section](#)
- 39** Section 7 of Human Cloning and Other Prohibited Practices Act. [^ Back to section](#)
- 40** Section 31 read with the Fourth Schedule to the HBRA and Regulations 3 and 4 of the Human Biomedical Research (Restricted Research) Regulations 2017. [^ Back to section](#)
- 41** Human oocytes include those obtained from excised ovarian tissue. [^ Back to section](#)
- 42** Human–animal combination gametes or embryos are those containing both human and animal genetic or non-genetic material and includes embryos created by the fertilisation of human and animal gametes. [^ Back to section](#)
- 43** Rule 7(1) of Animal & Birds (Care and Use of Animals for Scientific Purposes) Rules. [^ Back to section](#)
- 44** Clinical Trials Guidance: Determination of Whether a Clinical Trial Requires Clinical Trial Authorisation (CTA), Clinical Trial Notification (CTN) or Clinical Trial Certificate (CTC) (May 2017) – Determination of whether a clinical trial requires a CTA, CTN or CTC at Paragraph 1.2.1. [^ Back to section](#)
- 45** Clinical Trials Guidance: Determination of Whether a Clinical Trial Requires Clinical Trial Authorisation (CTA), Clinical Trial Notification (CTN) or Clinical Trial Certificate (CTC) (May 2017) – Determination of whether a clinical trial requires a CTA, CTN or CTC at Paragraph 1.2.2.; See also Section 18 of the MA, and the Medicines (Clinical Trials) Regulations 2016. [^ Back to section](#)
- 46** Regulation 4(1) of Medicines (Clinical Trials) Regulations 2016 and Regulation 4(1) of Health Products (Clinical Trials) Regulations 2016. [^ Back to section](#)
- 47** Regulation 9(2) of Medicines (Clinical Trials) Regulations 2016. [^ Back to section](#)
- 48** Clinical Trials Guidance: Determination of Whether a Clinical Trial Requires Clinical Trial Authorisation (CTA), Clinical Trial Notification (CTN) or Clinical Trial Certificate (CTC) (May 2017) – Determination of whether a clinical trial requires a CTA, CTN or CTC at Paragraph 1.3.2. [^ Back to section](#)
- 49** Clinical Trials Guidance: Determination of Whether a Clinical Trial Requires Clinical Trial Authorisation (CTA), Clinical Trial Notification (CTN) or Clinical Trial Certificate (CTC) (May 2017) – Determination of whether a clinical trial requires a CTA, CTN or CTC at Paragraph 1.2.1. [^ Back to section](#)
- 50** Regulations 3A, 4C, 5B, 10A, 13A, 39A and 39B of Health Products (Medical Device) Regulations 2010. [^ Back to section](#)
- 51** ECEG 2016 at Guideline B6. [^ Back to section](#)

- 52 *Pang Ah San v. Singapore Medical Council* [2014] 1 SLR 1094 (SGHC) at [26]. [^ Back to section](#)
- 53 Innovative therapy is defined as a completely novel or significantly modified standard therapy with little or nothing in the way of studies or evidence of efficacy, effects or side effects. See also SMC Handbook on Medical Ethics 2016 at B6.1. [^ Back to section](#)
- 54 SMC Handbook on Medical Ethics 2016 at B6.1. [^ Back to section](#)
- 55 *SeeShorvon Simon v. Singapore Medical Council* [2006] 1 SLR(R) 182 (SGCA) at [9] to [11] for a summary of the findings of the disciplinary committee. [^ Back to section](#)
- 56 ECEG 2016 at Guideline B8. [^ Back to section](#)
- 57 Clinical Trials Guidance: Alternative Measures for Investigational Product Management for Clinical Trials of Locally Registered Therapeutic Products or Medicinal Products (May 2017) – Paragraph 1.2. [^ Back to section](#)
- 58 Act No. 26 of 2012. [^ Back to section](#)
- 59 Health Products (Clinical Trials) Regulations 2016 and Medicines (Clinical Trials) Regulations 2016. [^ Back to section](#)
- 60 Regulation 51 of the Health Products (Therapeutic Products) Regulations 2016. [^ Back to section](#)
- 61 A registered medical practitioner under the Medical Registration Act 1997 and a registered dentist under the Dental Registration Act 1999. [^ Back to section](#)
- 62 Regulation 51(3) of the Health Product (Therapeutic Products) Regulations 2016; Therapeutic Products Guidance – Import and Supply of an Unregistered Therapeutic Product for Patients' Use (November 2016) at Paragraph 2.2. [^ Back to section](#)
- 63 Therapeutic Products Guidance – Import and Supply of an Unregistered Therapeutic Product for Patients' Use (November 2016) at Paragraph 2.2. [^ Back to section](#)
- 64 Medical Device Guidance – Guidance on the Requirements for Exemption from Product Registration for Import of an Unregistered Medical Device for Supply on a Named-Patient Basis (June 2010) at Paragraph 1.2. [^ Back to section](#)
- 65 Regulations 2 and 3 of the Human Biomedical Research (Requirements for Appropriate Consent – Exemption) Regulations 2019. [^ Back to section](#)

- 66** Whether it is (1) the first strength of a 'new' chemical or biological entity; (2) the first strength of a new drug product containing a new combination or proportion of a registered chemical in a new dosage form, presentation or format for use by a new route of administration or for new indications, dosage recommendations or patient populations; or (3) subsequent strengths of a new drug product. See Paragraph 5.2 of Guidance on Therapeutic Product Registration in Singapore (August 2021). [^ Back to section](#)
- 67** 'Local unmet needs' is defined by the absence of a treatment option, or the lack of safe and effective alternative treatment, such that the drug would be a significant improvement compared to available marketed products, as demonstrated by (1) evidence of increased effectiveness in treatment, prevention or diagnosis; or (2) elimination or a substantial reduction of a treatment-limiting drug reaction. See Therapeutic Products Guidance – Guidance on Therapeutic Product Registration in Singapore (August 2021) at Paragraph 14.2.1. [^ Back to section](#)
- 68** Third Schedule to the Health Products (Medical Devices) Regulations 2010; Medical Device Guidance – Guidance on Medical Device Product Registration (August 2021) at Paragraph 2. [^ Back to section](#)
- 69** Regulation 10b of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 70** Regulation 26 of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 71** Regulation 3B of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 72** Regulation 3C of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 73** Fifth Schedule to the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 74** Order 5 of the Health Products (Exemptions) (Amendment) Order 2018. [^ Back to section](#)
- 75** Regulation 25 of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 76** For example, the Private Hospitals and Medical Clinics Act 1980, Medical Registration Act 1997, Dental Registration Act 1999, Radiation Protection Act 2007, etc. [Seewww.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Medical_Devices/Overview.html](http://www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Medical_Devices/Overview.html). [^ Back to section](#)
- 77** Aesthetic Practices Oversight Committee, Guidelines on Aesthetic Practices for Doctors 2016. [^ Back to section](#)
- 78** Article 1(1) of the ASEAN Agreement on Medical Device Directive. [^ Back to section](#)

- 79** Guidelines on the Control of Cosmetic Products (Revised April 2019) at Paragraph 1. [^ Back to section](#)
- 80** Regulation 4 of the Health Products (Cosmetic Products – ASEAN Cosmetic Directive) Regulations 2007. [^ Back to section](#)
- 81** See www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Cosmetic_Products/Overview.html. [^ Back to section](#)
- 82** Regulation 4(2A) of the Health Products (Cosmetic Products – ASEAN Cosmetic Directive) Regulations 2007. [^ Back to section](#)
- 83** Guidelines on the Control of Cosmetic Products (Revised April 2019) at Paragraphs 5 and 10. [^ Back to section](#)
- 84** See www.hsa.gov.sg/traditional-medicines/regulatory-overview-of-traditional-medicines. [^ Back to section](#)
- 85** Section 5 of Medicines Act. [^ Back to section](#)
- 86** Health Products (Cell, Tissue and Gene Therapy Products) Regulations 2021. [^ Back to section](#)
- 87** Regulations 4, 7, and 10 of the Health Products (Cell, Tissue and Gene Therapy Products) Regulations 2021. [^ Back to section](#)
- 88** Regulations 6, 9 and 19 of Health Products (Cell, Tissue and Gene Therapy Products) Regulations 2021. [^ Back to section](#)
- 89** Health Products (Exemptions) (Amendment) 2021; Health Products (Exemptions) (Amendment) 2021. [^ Back to section](#)
- 90** Guidance on Registration of Biosimilar Products (November 2016) at Paragraph 1.3. [^ Back to section](#)
- 91** Section 36A of the Patents Act. [^ Back to section](#)
- 92** Regulation 26(1) of the Health Product (Therapeutic Products) Regulations 2016. [^ Back to section](#)
- 93** Section 19A of the Medicines Act. [^ Back to section](#)
- 94** If the defect leads to a serious threat to personal or public health, it must be reported within 48 hours. All other product defects must be reported within 15 days. See Regulation 34 of the Health Product (Therapeutic Products) Regulations 2016. [^ Back to section](#)

- 95** Section 27 of the Health Product Act. [^ Back to section](#)
- 96** Section 16 of the Medicines Act. [^ Back to section](#)
- 97** Regulation 49 of the Health Products (Medical Devices) Regulations 2010. [^ Back to section](#)
- 98** Guidance on Licensing for Manufacturers, Importers and Wholesalers of Medical Devices (August 2021) at Paragraph 8. [^ Back to section](#)
- 99** ASEAN Cosmetic Directive – Guidelines for Product Information File 2007. [^ Back to section](#)
- 100** Section 27 of the Health Products Act. [^ Back to section](#)
- 101** Section 12 of the Health Products Act and Section 6(2) of the Medicines Act. [^ Back to section](#)
- 102** Regulation 4 of the Health Product (Therapeutic Product) Regulations 2016. Guidance on Licensing for Manufacturers, Importers and Wholesalers of Medical Devices (August 2018) at Paragraph 5.2. [^ Back to section](#)
- 103** Regulation 33 of the Health Products (Medical Devices) Regulations 2010. See also <https://www.hsa.gov.sg/medical-devices/regulatory-overview>. [^ Back to section](#)
- 104** Section 50 of the Medicines Act. [^ Back to section](#)
- 105** Explanatory Guidance to the Health Products (Advertisement of Therapeutic Products) Regulations 2016 (November 2016) at Paragraph 2.2. [^ Back to section](#)
- 106** Section 51 read with the First Schedule to the Medicines Act for medicinal products, Regulation 6 read with the Second Schedule to the Health Products (Advertisement of Therapeutic Products) Regulations 2016. The list of diseases and conditions in both Schedules are the same. [^ Back to section](#)
- 107** Regulation 19 of the Health Products (Medical Device) Regulations 2010. [^ Back to section](#)
- 108** Regulation 9(a) of the Health Products (Cosmetic Products – ASEAN Cosmetics Directive) Regulations 2007. [^ Back to section](#)
- 109** Regulation 9(b) of the Health Products (Cosmetic Products – ASEAN Cosmetics Directive) Regulations 2007. [^ Back to section](#)
- 110** ECEG 2016 at Guideline I2(4). [^ Back to section](#)
- 111** ECEG 2016 at Guideline I2(5). [^ Back to section](#)

- 112** See <https://www.hsa.gov.sg/about-us/health-products-regulation>. ^ [Back to section](#)
- 113** *ibid.* ^ [Back to section](#)
- 114** Guidance notes on duties of responsible persons named in the importer's licence and wholesaler's licence 2016 at Paragraph 4. For duties and responsibilities of responsible persons, see Regulation 39 of the Health Products (Therapeutic Products) Regulations 2016. ^ [Back to section](#)
- 115** Guidance on Licensing for Manufacturers, Importers and Wholesalers of Medical Devices (August 2021) at Paragraph 5.2. ^ [Back to section](#)
- 116** See www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Western_Medicines/Reclassified_Medicines.html. ^ [Back to section](#)
- 117** Regulation 11 of the Health Products (Therapeutic Products) Regulations 2016. ^ [Back to section](#)
- 118** Section 13 of the Health Products Act. However, a holder of a manufacturer's licence for therapeutic products may import health products without an importer's licence if the health product is required for the purpose of carrying out the manufacture of a therapeutic product. See Regulation 54 of the Health Products (Therapeutic Products) Regulations 2016. ^ [Back to section](#)
- 119** Section 14 read with Section 2 of the Health Products Act. However, a holder of an importer's licence may export therapeutic products without a wholesaler's licence if the imported therapeutic products were imported solely for the purpose of export. See Regulation 53 of the Health Products (Therapeutic Products) Regulations 2016. ^ [Back to section](#)
- 120** Regulation 39 of the Health Products (Therapeutic Products) Regulations 2016. ^ [Back to section](#)
- 121** Guidance on Licensing for Manufacturers, Importers and Wholesalers of Medical Devices (August 2021) at Paragraph 5.2. ^ [Back to section](#)
- 122** Part II of the Medicines Act. ^ [Back to section](#)
- 123** These control measures are implemented via, inter alia, the Misuse of Drugs Act 1973, the Health Products (Therapeutic Products) Regulations 2016 and the Medicines (Export Licence for Psychotropic Substances) Regulations. ^ [Back to section](#)
- 124** As defined in the First Schedule to the Misuse of Drugs Act. ^ [Back to section](#)

- 125** Regulation 3 of the Medicines (Export Licence for Psychotropic Substances) Regulations. Note that the Regulations were amended in 2016 to include medicinal products containing psychotropic substances. [^ Back to section](#)
- 126** See www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Manufacturing_Importation_Distribution/Overview/Audit_and_Licensing_Of_Importers_Wholesale_Dealers_and_Exporters/Controlled_Drugs_Psychotropic_and_Restricted_Substances.html. [^ Back to section](#)
- 127** Section 49 of the Health Products Act. [^ Back to section](#)
- 128** Section 41 of the Healthcare Services Act 2020. [^ Back to section](#)
- 129** Medisave allows Singaporean Citizens or Permanent Residents to set aside part of their income for future medical expenses. See https://www.moh.gov.sg/content/moh_web/home/costs_and_financing/schemes_subsidies/medisave.html#1. MediShield Life is a basic health insurance plan, administered by the Central Provident Fund Board, which helps to pay for hospital bills and selected costly outpatient treatments such as dialysis and chemotherapy for cancer. See <https://www.moh.gov.sg/cost-financing/healthcare-schemes-subsidies/medishield-life>. [^ Back to section](#)
- 130** See <https://www.moh.gov.sg/cost-financing/healthcare-schemes-subsidies/drug-subsidies-schemes>. However, note that some drugs are only subsidised for specific, appropriate clinical indications for which the drugs are assessed to be clinically effective and cost-effective. [^ Back to section](#)
- 131** See <https://www.moh.gov.sg/cost-financing/healthcare-schemes-subsidies/drug-subsidies-schemes> and <https://www.straitstimes.com/forum/letters-on-the-web/list-of-subsidised-drugs-reviewed-regularly>. [^ Back to section](#)
- 132** See https://www.moh.gov.sg/content/moh_web/home/pressRoom/pressRoomItemRelease/2004/medical_service_package_to_ensure_good_healthcare_at_affordable_prices_for_all_Singaporeans.html. [^ Back to section](#)
- 133** See www.pioneers.sg/en-sg/Pages/Overview.aspx. [^ Back to section](#)
- 134** See <https://www.todayonline.com/singapore/new-merdeka-generation-package-help-singaporeans-born-1950s-healthcare-needs>. [^ Back to section](#)
- 135** See <https://www.straitstimes.com/singapore/politics/ndr-2023-14-million-singaporeans-aged-50-and-up-to-get-more-help-meeting-retirement-needs>. [^ Back to section](#)

136 Khoo Ai Leng, *Formulary Management – A Practical Guide* (1st edition, NHG Pharmacy & Therapeutics Office 2014). [^ Back to section](#)

137 Section 28 of the Health Products Act. [^ Back to section](#)

138 SAPI Code of Marketing Practices (2016). [^ Back to section](#)

139 Guideline H3(1)-(5) of the ECEG 2016. [^ Back to section](#)

140 Guideline H3(5) of the ECEG 2016. [^ Back to section](#)

141 See *Public Prosecutor v. Khoo Yong Hak* [1995] 1 SLR(R) 769 (SGHC) at [23] to [26]. Section 5 of the Prevention of Corruption Act 1960 makes it an offence to corruptly solicit, receive, give, promise or offer any gratification as an inducement to any person (or public servant) doing or forbearing to do anything in respect of any matter. [^ Back to section](#)

142 Guideline H3(7) of the ECEG 2016 states that doctors may only pay managed care companies, third-party administrators, insurance entities or patient referral services fees that reflect their actual work in handling and processing the patients and cautions that such fees must not be so high as to constitute 'fee splitting' or 'fee sharing'. Further, doctors are required to disclose any such fees to their patients. Although the ECEG 2016 came into force on 1 January 2017, Guideline H3(7) only came into force on 1 July 2017, giving doctors an additional six months to comply; see Paragraphs 9 and 10 of the Advisory on the Payment of Fees to Managed Care Companies, Third Party Administrators, Insurance Entities or Patient Referral Services by the Singapore Medical Council on 13 December 2016. This was reiterated in the Second Advisory on the Payment of Fees to Managed Care Companies, Third Party Administrators, Insurance Entities or Patient Referral Services by the Singapore Medical Council on 23 June 2017, Paragraph 4. [^ Back to section](#)

143 See Paragraph 11 of the Advisory on the Payment of Fees to Managed Care Companies, Third Party Administrators, Insurance Entities or Patient Referral Services ('Third Parties') by the Singapore Medical Council on 13 December 2016. [^ Back to section](#)

144 Advisory on the Payment of Fees to Managed Care Companies, Third Party Administrators, Insurance Entities or Patient Referral Services by the Singapore Medical Council on 13 December 2016, and the Second Advisory on the payment of fees to managed care companies, third-party administrators, insurance entities or patient referral services by the Singapore Medical Council on 23 June 2017. [^ Back to section](#)

- 145** Joint opinion on Transactions with Managed Care/Third Party Administrators (TPAs) on 14 December 2016, Joint Advisory on Fees paid to Managed Care and Third-Party Administrator companies on 11 April 2017, and Joint Advisory on Fees Paid to Managed Care and Third-Party Administrator (TPA) Companies on 23 June 2017 by Academy of Medicine, Singapore, College of Family Physicians, Singapore, and Singapore Medical Association. [^ Back to section](#)
- 146** See <https://www.straitstimes.com/singapore/health/moh-puts-a-stop-to-foreign-patient-referral-contracts>. [^ Back to section](#)
- 147** See <https://www.straitstimes.com/singapore/medical-industrys-rogue-agents>. [^ Back to section](#)
- 148** ECEG 2016 Guideline I1. [^ Back to section](#)
- 149** For example, Section 14 of the Sale of Goods Act 1979 or Section 6 of the Consumer Protection (Fair Trading) Act 2003. [^ Back to section](#)
- 150** Under Order 4, Rule 6 of the Rules of Court Singapore 2021. [^ Back to section](#)
- 151** See <https://www.cccs.gov.sg/about-cccs>. [^ Back to section](#)
- 152** See <https://www.mti.gov.sg/Resources/publications/Research-Innovation-and-Enterprise-RIE-2020>. [^ Back to section](#)
- 153** <https://www.nrf.gov.sg/rie2025-plan>. [^ Back to section](#)
- 154** <https://www.straitstimes.com/singapore/health/5g-robots-and-other-innovations-may-help-singapore-s-healthcare-system-cope-with-ageing-population>. [^ Back to section](#)
- 155** https://www.accenture.com/_acnmedia/PDF-161/Accenture-Digital-Adoption-In-Healthcare.pdf. [^ Back to section](#)
- 156** <https://www.sma.org.sg/news/2020/September/telemedicine-in-singapore-a-useful-adjunct-in-a-pandemic>. [^ Back to section](#)
- 157** See <https://www.lumihealth.sg/> [^ Back to section](#)
- 158** <https://www.ihis.com.sg/nehr/faqs>. [^ Back to section](#)
- 159** <https://www.moh.gov.sg/docs/librariesprovider5/hrg-cybersecurity/healthcare-cybersecurity-essentials.pdf>. [^ Back to section](#)
- 160** <https://www.ihis.com.sg/healthai>. [^ Back to section](#)

- 161 <https://www.straitstimes.com/singapore/health/in-house-3d-printing-service-helps-improve-surgery-consultations-at-ttsh>. ^ [Back to section](#)
- 162 <https://www.hsa.gov.sg/docs/default-source/hprg-mdb/guidance-documents-for-medical-devices/regulatory-guideline-for-3d-printed-medical-devices.pdf>. ^ [Back to section](#)
- 163 [https://www.moh.gov.sg/docs/librariesprovider5/eguides/1-0-artificial-in-healthcare-guidelines-\(aihgle\)_publishedoct21.pdf](https://www.moh.gov.sg/docs/librariesprovider5/eguides/1-0-artificial-in-healthcare-guidelines-(aihgle)_publishedoct21.pdf). ^ [Back to section](#)
- 164 See <https://www.moh.gov.sg/hcsa/about-hcsa>. ^ [Back to section](#)
- 165 Edwin Tong, Senior Minister of State, Ministry of Health, 'Opening Speech for Second Reading of the Healthcare Services Bill', 6 January 2020. ^ [Back to section](#)
- 166 <https://www.moh.gov.sg/hcsa/home>; <https://www.moh.gov.sg/hcsa/about-hcsa>. ^ [Back to section](#)
- 167 See <https://www.hsa.gov.sg/consumer-safety/articles/details/vaping-enforcement-in-singapore>; see also <https://www.straitstimes.com/singapore/politics/vaping-offences-rise-sharply-in-schools-enforcement-and-education-being-stepped-up#:~:text=Vaping%20of%20fences%20rise%20sharply%20in%20schools%2C%20enforcement%20and%20education%20being%20stepped%20up,-About%20seven%20in&text=SINGAPORE%20%2D%20About%20800%20students%20were,years%20was%20fewer%20than%2050>. ^ [Back to section](#)
- 168 Section 16(2A) of the Tobacco (Control of Advertisements and Sale) Act. ^ [Back to section](#)
- 169 See <https://www.hsa.gov.sg/consumer-safety/articles/details/vaping-enforcement-in-singapore>. ^ [Back to section](#)
- 170 See <https://www.straitstimes.com/singapore/giving-up-vaping-for-love-macpherson-youth-network-launches-anti-vape-campaign>. ^ [Back to section](#)
- 171 Parliamentary Highlights, Sitting on 2 March 2023, Notice Paper 1755, Question 2776. ^ [Back to section](#)



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