

Country Information Note Pakistan: Healthcare and medical treatment

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Country information

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About the country information

This note has been compiled by the Country Policy and Information Team (CPIT), Home Office. It aims to be a comprehensive but not exhaustive survey of healthcare in Pakistan.

It provides country of origin information (COI) for Home Office decision makers handling cases where a person claims that removing them from the UK would be a breach of Articles 3 and/or 8 of the European Convention on Human Rights (ECHR) because of an ongoing health condition. It contains publicly available or disclosable COI which has been gathered, collated and analysed in line with the <u>research</u> methodology. The note's structure and content follow the <u>terms of reference</u>.

For general guidance on considering claims based on a breach of Article 3 and/or 8 of the ECHR because of an ongoing health condition, see the instruction on <u>Human</u> rights claims on medical grounds.

This note makes extensive use of information compiled by Project MedCOI, which was set up and operated by the Belgium and Netherlands immigration authorities until 31 December 2020. Thereafter MedCOI was run by the European Union Agency for Asylum (EUAA), formerly known as the European Asylum Support Office (EASO).

MedCOI's information gathering and quality assurance processes remain unchanged from when the UK Home Office had access prior to December 2020.

The EUAA explains how the project currently operates:

'EUAA MedCOI relies on a worldwide network of medical experts that provides upto-date medical information in countries of origin. Based on this information and combined with desk research, the EUAA produces responses to individual requests from EU+ countries and maintains a portal with a specific database where the information can be found. The portal also allows for the continuous exchange of information between countries, and between countries and the EUAA. The database is only accessible to trained personnel in EUAA and the EU+ countries' relevant administrations ... The high quality and medical accuracy of the information is guaranteed by specifically trained medical advisors and research experts who also provide guidance to the users of the portal.

'EUAA MedCOI is continuously subject to internal and external quality assurance activities such as validations, audits, and peer reviews.'¹

The UK Home Office's access to MedCOI ended on 31 December 2020. However, copies of all MedCOI documents referred to in this note have been retained and are available on request.

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¹ EUAA, <u>Country of Origin Information</u> (Medical country of origin information (MedCOI)), no date

1. Structure of the healthcare system

1.1 General overview

1.1.1 The World Health Organization Regional Office for the Eastern Mediterranean (WHO EMRO) noted in an undated report entitled 'Health system strengthening', that '... the World Health Report 2010 defines universal health coverage as providing all people with access to needed health services that is of sufficient quality to be effective, while ensuring that the use of these services does not expose the user to financial hardship.

'Pakistan is committed to achieving the health-related targets of the Sustainable Development Goals [SDGs] with the aim of attaining universal health coverage. The SDGs are the practical expression of concern for health equity and the right to health; and contribute to sustainable development and poverty reduction. Embarking on a national vision towards universal coverage will entail reforms in the health system, as well as addressing social and environmental determinants of health.'²

- 1.1.2 The same source added that 'The national health vision 2025 provides a way forward to confront the challenges that face the national health system such as inequities, rising exposure to health risks, increasing health care costs and low levels of access to quality. The overall goal is to achieve better health, universal health coverage and equitable health financing policies.'³
- 1.1.3 The US Government's International Trade Association (ITA) healthcare resource guide noted that:

'In Pakistan, public and private health care systems run in parallel. The public sector, led by the Ministry of Health until recently, has deferred to the provinces for issuance of healthcare to the general population. The administrative and fiscal space of provinces has increased manifold with simultaneous increases in their responsibilities, however they remain deficient in health workforce and facilities, relative to the size of the population...

'The public sector health services are provided at federal, provincial, and district levels through a well-established network of rural health centers, basic health units (BHU), and allied medical professionals. The health profile of Pakistan is characterized by high population growth. The rising population pressure on state health institutions has allowed the private sector to bridge the gap of rising demand and limited public health facilities...

[']Public health activities have persistently increased in terms of physical infrastructure and workforce, including increased numbers of doctors, dentists, and nurses.^{'4}

- 1.1.4 See also <u>Healthcare infrastructure and staffing</u>.
- 1.1.5 The ITA healthcare resource guide added that, 'The private sector plays a vital role in the delivery of healthcare services in Pakistan. Most private hospitals, clinics, and health related facilities are in urban areas and are well-

² WHO EMRO, <u>Health system strengthening</u>, no date

³ WHO EMRO, <u>Health system strengthening</u>, no date

⁴ ITA, <u>Healthcare Technologies Resource Guide, Pakistan</u>, no date

equipped with modern diagnostic facilities. These private healthcare options are in greater demand than healthcare available through the public sector.³

1.1.6 WHO EMRO noted that 'The private health sector constitutes a diverse group of doctors, nurses, pharmacists, traditional healers, drug vendors, as well as laboratory technicians, shopkeepers and unqualified practitioners.

"...The rising population pressure on state health institutions has allowed the private sector to bridge the gap of rising demand and limited public health facilities. A number of private hospitals, clinics and diagnostic labs has [sic] increased considerably and is contributing health services in the country. [The] Majority of private sector hospitals has [sic] sole proprietorship or a partnership model of organization. Stand-alone clinics across Pakistan are the major providers of out-patient care [and the] majority of these clinics falls in the sole proprietorship category."

1.1.7 Bertelsmann Stiftung's Transformation Index (BTI), a think-tank, which assesses the transformation toward democracy and a market economy as well as the quality of governance in 137 countries, noted in its BTI 2024 Country Report for Pakistan, covering the period 1 February 2021 to 31 January 2023, published on 19 March 2024, that 'Pakistan has several welfare programs aimed at establishing a basic universal social safety net for its citizens. Government-operated … hospitals offer highly subsidized … health care to the entire population.'⁷ The same source added:

'In 2019, the PTI government launched the Sehat Sahulat Programme in the KP [Khyber Pakhtunkhwa] province, providing universal health insurance to citizens eligible for use in both public and private hospitals. Coverage was extended to Punjab in 2021, and the program was providing health insurance to an estimated 38 million households across the country by the end of that year. While questions remain about its sustainability – currently accounting for 30% of the government's expenditure on health care – it remains the most significant reform to health care provision in decades.'⁸

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1.2 Issues affecting the healthcare system

- 1.2.1 WHO EMRO noted that 'Despite an elaborate and extensive health infrastructure, the health care delivery suffer from some key issues like the high population growth, uneven distribution of health professionals, deficient workforce, insufficient funding and limited access to quality health care services.'9
- 1.2.2 The Government of Pakistan's Ministry of Finance section on health and nutrition in a report published on 8 June 2023 noted that the:

'Health and nutrition profile of Pakistan, as evident from country's performance on various health and nutrition indicators, presents a moderate picture. Key health indicators regarding child and maternal life expectancy,

⁵ ITA, <u>Healthcare Technologies Resource Guide, Pakistan</u>, no date

⁶ WHO EMRO, <u>Pakistan Health Service Delivery</u>, no date

⁷ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 25), 19 March 2024

⁸ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 25), 19 March 2024

⁹ WHO EMRO, Pakistan Health Service Delivery, no date

i.e., neo-natal mortality rate, infant mortality rate, and under-5 mortality rate showed improvement in year 2021 as compared to the previous year. Maternal mortality rate also showed progress with 154 deaths per 100,000 births in 2020 as compared to 179 in the previous year. However, other indicators such as incidence of tuberculosis and measles immunization decelerated, while life expectancy at birth and HIV prevalence remained same.¹⁰

1.2.3 The BTI 2024 report noted that:

"... the provision of effective public services in Pakistan is hamstrung by serious capacity constraints. According to the Pakistan Economic Survey for 2022, spending on health care amounted to 3% of GDP in 2020/2021...The inadequacy of public welfare services has led to the emergence of a large private sector in health care... Historically, the budgetary adjustments required by lenders to manage Pakistan's fiscal constraints have led to cuts to social services."

1.2.4 The BTI 2024 report further noted:

'While significant challenges persist regarding the provision of welfare in Pakistan, there are areas where progress has been observed. The Benazir Income Support Programme (BISP), initiated in 2008, is an unconditional cash transfer scheme for poverty reduction that primarily targets women. Renamed the Ehsaas program by the PTI government, the BISP was expanded in response to the COVID-19 pandemic, with coverage extended to an estimated 15 million families in 2021. During this period, the Ehsaas Taleemi Wazaif Programme was also introduced, offering stipends ranging from PKR 1,500 to PKR 4,000 [£1 = 353.87 Pakistan Rupees (PKR)¹²] to students every quarter. Currently, the program benefits over three million children.'¹³

1.2.5 An article published on 10 June 2023 entitled 'Healthcare in Pakistan: Navigating Challenges and Building a Brighter Future', authored by medical practitioners Muhammad Q, Eiman H, Fazal F, Ibrahim I and Gondal M F of the Holy Family Hospital in Rawalpindi, noted that:

"...the healthcare system in Pakistan is facing several challenges. There is a massive shortage of hospitals, doctors, nurses, and paramedical staff... Two parallel systems exist in the healthcare system of Pakistan. One consists of public hospitals, and the other consists of private hospitals. The former is short even of basic healthcare facilities, and the latter is too costly for the people of Pakistan to afford. Solutions to the stumbling and compromised healthcare system of Pakistan are adequate financial support and infrastructure development...

'The system is plagued with numerous flaws, ranging from inadequate infrastructure to inequitable distribution of healthcare facilities. The lack of adequate healthcare infrastructure is one of Pakistan's biggest challenges. There is an extreme shortage of healthcare facilities, including hospitals,

¹⁰ Ministry of Finance, <u>Health and nutrition</u> (Page 187), 8 June 2023

¹¹ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 25), 19 March 2024

¹² Xe, <u>Currency converte</u>r, 24 May 2024

¹³ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 25), 19 March 2024

clinics, and diagnostic centers.

'The chronic underfunding of the health sector is a massive reason for the lack of infrastructure, burdened by corruption, an unstable political system, and inequitable distribution of resources... Currently, healthcare expenditure accounts for a mere 0.4% of Pakistan's GDP, well below the WHO- [World Health Organisation] recommended GDP to be spent on healthcare, i.e., 6% for low-income countries. Moreover, this funding is inequitably distributed to Pakistan's urban and developed cities. Hence, access to healthcare services is marked by stark disparities, with the rural population and low-income communities lacking basic healthcare facilities...

'In conclusion, Pakistan's healthcare system faces significant challenges in providing effective and equitable healthcare to its citizens. However, these challenges can be overcome by strategic planning, the allocation of adequate funds, and the government's keen interest in improving the current conditions. The political unrest in Pakistan has played a huge role as the rapid change in management and leadership interrupts the continuity of policies.'¹⁴

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1.3 Affordability and health insurance

1.3.1 According to a MedCOI response in January 2020:

'Public hospitals provide free healthcare to all citizens; however, around 78% of the population pay for healthcare. The issue is according to one article the quality of care. A study conducted on the effects of health insurance on child labour reduction concurs, concluding that due to the poor quality, 75% of the population instead pay for expensive private care. Less than 2% of the households have formal insurance. The result is that health issues are a "significant economic risk" for low-income Pakistanis. According to the International Labour Organization, tertiary hospitals may offer free consultation and bed for some patients, but surgical and medical supplies as well as medication must be paid for by the patients.

"[T]he social security system in Pakistan takes the form of charity (Zakat entitlement), though it requires quite lengthy procedures to subscribe to. Additionally, [...] coverage may be full if the treatment is available at public facility but not in private facilities.¹⁵

1.3.2 Information from June 2018 found on MedCOI described Zakat, noting:

'Under the system of Zakat, funds for the medical treatment of the "deserving", or mustahiq, patients, are distributed to various health facilities. Only a Muslim citizen of Pakistan living below the poverty line is eligible to receive Zakat. A person can apply to the regional Zakat department and if successful, will receive a Istehqaq certificate from the Local Zakat Committee in the area. The certificate is then submitted to the Health Welfare Committee at the hospital in question. The financial assistance can

¹⁴ Muhammad Q and others, <u>Healthcare in Pakistan: Navigating...</u>, 10 June 2023

¹⁵ MedCOI, 29 January 2020

be used for "medicines, tests, artificial limbs, medical treatment including operation, bed in general ward and free transportation of the patient", according to the Zakat and Ushr Department in Punjab province. Zakat funds are available at various hospitals.¹⁶

1.3.3 The MedCOI response, dated 29 January 2020 noted that:

'A project in Khyber Pakhtunkhwa and parts of Islamabad is providing "health cards to ensure government-subsidised health insurance for poor and needy families". The Sehat Sahulat Program provides "significant financial coverage, and province-wide accessibility to secondary and tertiary treatment facilities." This model was built to align with Pakistan's commitment to introduce Universal Health Coverage (UHC) by 2030. Achieving UHC is part of Pakistan's sustainable development goals.

'In 2017 a health insurance scheme was launched in the federal capital, FATA and Punjab to provide coverage for families earning USD 2 per day or less. Families included in the scheme are entitled to an annual treatment costing USD 2,600 [£1 = 1.27 US Dollars¹⁷]. This can include conditions and treatments like cancer, traumas caused by accidents, burns, complications from diabetes, infections and bypass surgeries.'¹⁸

- 1.3.4 The ITA noted in its healthcare resource guide that '... expansion in the Government of Pakistan's universal health coverage insurance program has led to an increase in the demand of healthcare infrastructure as [the] government is providing health care services to general public both from public and private hospitals.'¹⁹
- 1.3.5 The January 2020 MedCOI response noted: 'Microloans can sometimes include mandatory accident and health insurance. Microinsurance is a growing field in Pakistan and there are currently 150 hospitals all over Pakistan listed for health microinsurance clients. There are also examples of community health insurance, but due to the costs of administrating policies in remote areas, the premiums are unaffordable.'²⁰
- 1.3.6 An article published in The Lancet in October 2022 entitled 'Sehat sahulat: A social health justice policy leaving no one behind' authored by Forman R, Ambreen F, Shah S S A, Mossialos E and Nasir K, noted that:

'The World Health Organization states "[Universal Health Coverage] UHC means that all individuals and communities receive the health services they need without suffering financial hardship."... Pakistan has joined the likes of emerging markets in pushing towards UHC. While simultaneously grappling with the COVID-19 pandemic, since late 2020 the Khyber Pakhtunkhwa (KPK) province expanded coverage for all its 30.5 million residents for inpatient care up to 1 million Rs per family each year in over 500 public and private hospitals across the country through its Sehat Sahulat program (SSP). The program, first adopted by the provincial government in 2016 to cover its population living below the poverty line, aims to transform

¹⁶ MedCOI, 21 June 2018

¹⁷ Xe, <u>Currency converte</u>r, 24 May 2024

¹⁸ MedCOI, 29 January 2020

¹⁹ ITA, <u>Healthcare Technologies Resource Guide, Pakistan</u>, no date

²⁰ MedCOI, 29 January 2020

healthcare in the country and progress towards UHC in recognition of the importance of health and wellbeing to the functioning of society.

'Former Pakistani Prime Minister Imran Khan commended the SSP, and efforts to expand healthcare coverage for residents of other provinces, including Islamabad Capital Territory (ICT), Punjab, Azad Jammu Kashmir (AJK), Gilgit Baltistan (GB), and Tharparkar-Sidh are underway. Endeavours to improve coverage in the region are laudable and have helped segments of the population in getting the care they need: as of 1 July 2022, 35,866,110 families had been enrolled under the program and 4,392,734 hospital visits had been covered since the SSP's establishment.'²¹

1.3.7 The same source added:

'Recognizing the need for increased access to healthcare, in recent years there has been a significant drive at the national and provisional levels to develop and fully subsidize programs aimed at mobilizing government financial resources to purchase medical services from both public and private providers, targeting the poor and those with catastrophic conditions. The SSP is a mechanism to do just that. The SSP can be viewed as an insurance mechanism, but the idea is that premium contributions are fully subsidized by the government. It covers secondary care and tertiary care for conditions including accidents and emergencies, diabetes, kidney diseases (including dialysis and transplant), Hepatitis B and C, cancers, and heart and vascular diseases. Additionally, it provides financial assistance under certain conditions for wage loss during treatment, transportation costs, maternity allowances, and funeral expenses in case of death during hospital admission...

'Financing for the program is raised through provincial taxes, and these funds cover State Life Insurance Corporation (SLIC) premiums for all eligible families in the province. Because of these arrangements, the federal government does not have as much administrative control over the program. In theory, SSP beneficiaries should receive covered inpatient services completely free of charge, without any out-of-pocket payments. For families which do not make any claims in a year, 90% of their premiums are reimbursed to the national exchequer.

'Coverage extends to services in both public and private facilities. This recognizes that over 70% of people in Pakistan seek healthcare from private hospitals – both in rural and urban settings. A small minority of private hospitals refuse to accept patients for certain conditions or services under the SSP because of their high overhead costs; in these circumstances, this gives public hospitals the opportunity to absorb these patients and bring in additional funds.'²²

1.3.8 Academics Quratulain Muhammad and others noted that:

'Pakistan, as a member of the United Nations (UN), strives to achieve the set benchmarks in healthcare by the year 2030. Many programs have been made functional to provide vertical and horizontal integration in healthcare. Currently around 17 in number, these programs have changed the

²¹ Forman R and others, <u>Sehat sahulat: A social health justice policy...</u>, 18 October 2022

²² Forman R and others, <u>Sehat sahulat: A social health justice policy...</u>, 18 October 2022

architecture of healthcare in Pakistan to face much brighter horizons. Pakistan boasts as one of the pioneer countries in advocating public-private partnerships (PPPs), which has yielded fruitful outcomes. The National Tuberculosis (TB) Control Program, Child and Maternal Health Awareness Program, and Expanded Program on Immunization are working examples. The most revered initiative of the Lady Health Worker (LHW) Program ensures door-to-door delivery of PHC and has been a significant milestone in progressing toward the attainment of the utmost level of healthcare...

'The government has consistently put in the effort to reduce healthcare costs in hospitals and has established autonomous bodies to relegate a more efficient and effective healthcare delivery. Pakistan has a long way ahead toward the development of an effective, accessible, and affordable healthcare system.'²³

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1.4 NGOs (non-governmental organisations)

- 1.4.1 MedCOI noted in a 2020 response that, 'Charity hospitals may also provide free healthcare to the underprivileged. One chain of hospitals described in an article by Andalou Agency is said to provide care from the primary level up to cardiac surgery and treatment for paediatric cancer.'²⁴
- 1.4.2 The BTI 2024 report noted that 'Civil society in Pakistan is characterized by the existence of a diverse array of organizations and interest groups. These include NGOs; professional associations of lawyers, [and] doctors... representing commercial interests...²⁵
- 1.4.3 NGO Source, a non-profit organisation and project of the Council of Foundations philanthropic network²⁶ noted on 8 September 2022 that '...Pakistani NGOs [are] working in relief, development, and healthcare...²⁷
- 1.4.4 Also see the NGO Base²⁸, a website providing a directory of charities around the world, for a list of <u>organisations working for health in Pakistan²⁹</u>.

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2. Pharmaceuticals

2.1 Accessibility to pharmaceutical drugs

2.1.1 WHO EMRO stated in an undated report entitled 'Essential medicines and technology', that:

'The establishment of the Drug Regulatory Authority under the Ministry of National Health Services, Regulations and Coordination has been a major step towards the effective regulation and ensuring the implementation of related policies and guidelines. Pharmaceuticals of Pakistan is rapidly growing with 550 plus companies and over 60 000 registered brands. Of

²³ Muhammad Q and others, <u>Healthcare in Pakistan: Navigating...</u>, 10 June 2023

²⁴ MedCOI, 29 January 2020

²⁵ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 30), 19 March 2024

²⁶ NGO Source, <u>Who we are</u>, no date

²⁷ NGO Source, Supporting Pakistani NGOs, 8 September 2022

²⁸ NGO Base, <u>Home</u>, no date

²⁹ NGO Base, NGOs and Charities working for Health in Pakistan, no date

major concern is the quality and regulation of the products based on WHO Good Manufacturing Practices and ICH [International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use³⁰] guidelines, in addition to opting to quality-based selection of medicines instead of the current price-based procurement.³¹

- 2.1.2 According to Muhammad Q and others 'Most life-saving medications are too expensive for people to afford...'³²
- 2.1.3 An article on medicine costs published November 2023, by Abdullah S, Saleem Z and Godman B, stated that: 'Despite price controls, the affordability of medicines in Pakistan remains a problem for most due to appreciable prescribing and dispensing of originator brands (OBs) and highpriced branded generics (BGs) as well as substantial price variations in OBs, BGs and low-priced generics (LPGs). Such issues are exacerbated by concerns with the ability of the Drug Regulatory Authority of Pakistan (DRAP) to properly regulate prices.'³³
- 2.1.4 D. Watson chemist had numerous <u>stores</u> in Islamabad and Rawalpindi, and one in Chakwal. Its website allows users to <u>search</u> for available medicines.
- 2.1.5 The Aga Khan University Hospital had a network of <u>hospital pharmacies</u> in Karachi and Hyderabad in Sindh, and <u>outreach pharmacies</u> across Pakistan.

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3. Healthcare infrastructure and staffing

3.1 Hospitals and clinics

- 3.1.1 The Pakistan Economic Survey 2021-22 noted that during 2021 '... national health infrastructure comprised of 1,276 hospitals, 5,558 BHUs [Basic Health Units], 736 RHCs [Rural Health Centres], 5,802 Dispensaries, 780 Maternity & Child Health Centers and 416 TB centers, while the total availability of beds in these health facilities have been estimated at 146,053.'³⁴
- 3.1.2 The ITA report noted that the 'National health infrastructure is comprised of 1282 hospitals, 5472 BHUs, 752 Maternity & Child Health Centers, and 412 TB centers.'³⁵
- 3.1.3 According to an April 2023 article by Samad Z of the Department of Medicine and Institute for Global Health and Development, Aga Khan University, Karachi, and Hanif B of the Tabba Heart Institute, Karachi, 'Pakistan has 8.9 hospital beds for every 10 000 citizens and a tiered public health care delivery network with 6142 primary care centers and 1282 hospitals.'³⁶
- 3.1.4 WHO EMRO noted in an undated report entitled 'Health service delivery', that 'A number of private hospitals, clinics and diagnostic labs has increased

³³ Abdullah S and others, <u>Coping with increasing medicine costs...</u>, 9 November 2023

³⁰ ICH, Official Website, no date

³¹ WHO EMRO, Essential medicines and technology, no date

³² Muhammad Q and others, <u>Healthcare in Pakistan: Navigating...</u>, 10 June 2023

³⁴ Ministry of Finance, Pakistan Economic Survey 2021-22 (page 204), 2022

³⁵ ITA, <u>Healthcare Technologies Resource Guide, Pakistan</u>, no date

³⁶ Samad Z and Hanif B, Cardiovascular Diseases in Pakistan..., 24 April 2023

considerably and is contributing health services in the country.'37

3.1.5 For a list of public (state-run) and private hospitals, see the healthcare platform <u>Marham</u>³⁸ and the property portal <u>Graana</u>³⁹. The UK Foreign and Commonwealth Office (FCO) also provided a list of <u>hospitals with English-speaking doctors</u> as of 6 September 2023⁴⁰. Also see a '<u>List of Hospitals and Clinics Businesses in Pakistan</u>'⁴¹.

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3.2 Medical personnel

- 3.2.1 The Pakistan Economic Survey 2022-23 stated that the number of registered medical personnel as of 2022 included 282,383 doctors, 127,855 nurses, 46,110 midwives, 24,022 Lady Health workers, and 33,156 dentists⁴².
- 3.2.2 The BTI 2024 report noted that ...and there was one doctor available for every 877 Pakistanis in 2022. In 2019/2020, there were only 0.98 doctors per 1,000 people....^{'43}. According to Samad Z and Hanif B, 'Pakistan has a doctor-to-population ratio of 1.09 per 1000 and a nurse/community health care workers/midwife–to-population ratio of 0.59 per 1000.'⁴⁴
- 3.2.3 According to academics Quratulain Muhammad others, 'Approximately 100,000 LHWs [lady health workers] are presently working in five provinces of Pakistan. Each LHW covers a population of 1,000...⁴⁵.
- 3.2.4 See a list of physicians in all departments in <u>Tibi Sahulat's doctor directory</u> and online medical help platform for Pakistan⁴⁶.

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4. Cancer (oncology)

4.1 Treatment and resources

4.1.1 Regarding cancer treatment, the Pakistan Economic Survey 2022-23 stated:

'Almost 80 percent of cancer burden in Pakistan is catered by Pakistan Atomic Energy Commission's (PAEC) cancer hospitals with annual treatment of approximately 40,000 cancer patients. The PAEC, with its well-equipped nuclear medicine, radiotherapy and radiology departments and workforce of 278 doctors, has contributed hugely through application of nuclear technology in the health sector. To cater the patients of remote areas, the PAEC, on average, establishes one cancer hospital every three years. Recently, GINOR [Gilgit Institute of Nuclear Medicine, Oncology and Radiotherapy] facility has been completed and now 19 AECHs [Atomic Energy Cancer Hospitals] are fully functioning, while one is under construction at Muzaffarabad, Azad Jammu & Kashmir (AJ&K). Also, 03

⁴² Ministry of Finance, Pakistan Economic Survey 2022-23 (page 188), 2023

³⁷ WHO EMRO, <u>Health service delivery</u>, no date

³⁸ Marham, <u>Home, All Hospitals in Pakistan</u>, no date

³⁹ Graana, <u>Top Private and Government Hospitals in Islamabad</u>, 27 May 2022

⁴⁰ FCDO, List of English- speaking doctors in Pakistan, updated 6 September 2023

⁴¹ UrduPoint Network, List of Hospitals and Clinics Businesses in Pakistan, no date

⁴³ Bertelsmann Stiftung, <u>BTI Country Report 2024</u> (page 25), 19 March 2024

⁴⁴ Samad Z and Hanif B, <u>Cardiovascular Diseases in Pakistan...</u>, 24 April 2023

⁴⁵ Muhammad Q and others, <u>Healthcare in Pakistan: Navigating...</u>, 10 June 2023

⁴⁶ Tibi Sahulat, <u>Doctor's directory</u>, no date

Mobile Breast Care Clinics (MBCC) conduct fortnightly visits and arrange camps in remote areas providing free screening facilities to poor and needy patients.⁴⁷

4.1.2 In a research article published on 16 March 2023 entitled 'Recently Top Trending Cancers in a Tertiary Cancer Hospital in Pakistan', authors Faisal Ali and others of the Nuclear Institute of Medicine and Radiotherapy, Jamshoro, Pakistan, noted that:

'The NIMRA cancer hospital is one of the oldest cancer hospital facilities built by the Pakistan Atomic Energy Commission (PAEC); it is located in the South Sindh province of Pakistan. Its scope includes diagnosis, nuclear medicine, and treatment of malignant cancers with chemotherapy and radiotherapy. NIMRA cancer hospital is capable of performing research studies to examine current cancer trends and forecast future trends. The center is equipped with a well-established cancer registry software hospital management information system (HMIS) for data analysis.^{'48}

- 4.1.3 According to a MedCOI response in 2019, cancer treatment was available at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, and Shifa International Hospital, Islamabad. Both private facilities⁴⁹.
- 4.1.4 An article by Awan U A, Guo X, Khattak A A, Hassan U and Khan S, published in The Lancet on 17 February 2024, stated 'Only 40 institutions (government and private) across the country declare themselves cancer treatment centres, yet the demand from patients considerably outweighs the supply.⁵⁰ The same source noted that there were '... fewer than 250 expert medical or radiation oncologists...' practising in Pakistan⁵¹.

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4.2 Cost of treatment

- 4.2.1 Awan U A and others noted in a February 2024 article that 'The state-of-theart Shaukat Khanum Memorial Cancer Hospital and Research Centre (SKMCH&RC), founded by former Prime Minister Imran Khan, is supported by national and international fundraising efforts, and treats patients from Pakistan, Afghanistan, and Tajikistan, irrespective of their capacity to pay for treatment.'⁵²
- 4.2.2 On 17 April 2024, The Express Tribune reported that the cost of cancer treatment in Pakistan was inaccessible for many due to 'exorbitant costs'. The report stated that according to Professor Dr Noor Muhammad Soomro, former head of the Civil Hospital's cancer department, the cost of chemotherapy depended on the stage of the disease. Dr Soomro told the Tribune that "There may be 3 to 18 sessions of chemotherapy and radiation therapy sessions may range from 5 to 30 sessions. Chemotherapy costs between Rs 100,000 to Rs 500,000 per patient. Whereas radiation therapy

⁴⁷ Ministry of Finance, Pakistan Economic Survey 2022-23 (page 191), 2023

 ⁴⁸ Faisal A and others, <u>Recently Top Trending Cancers...</u> (Materials and Methods), 16 March 2023
 ⁴⁹ MedCOI, 2 February 2019

⁵⁰ Awan U A and others, <u>Economic crises and cancer care in Pakistan...</u>, 17 February 2024

⁵¹ Awan U A and others, Economic crises and cancer care in Pakistan..., 17 February 2024

⁵² Awan U A and others, Economic crises and cancer care in Pakistan..., 17 February 2024

costs between Rs 5,000 to Rs 15,000 per session." Dr Soomro further added that despite the high costs, radiation therapy is not readily available at government hospitals...' One breast cancer patient told the Tribune that her private hospital chemotherapy treatment cost Rs 40,000 per session, whilst radiotherapy cost Rs 15,000 per session⁵³.

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4.3 Leukaemia

4.3.1 A MedCOI response from 2018 indicated that treatment of leukaemia (the example given was chronical myelogenous leukaemia in acceleration phase) was available at the following facilities:

'Shifa International Hospital, H-8, Islamabad (private facility):

'Aga Khan University Hospital, Stadium Road, Karachi (private facility):

- 'Oncology: chemotherapy
- 'Inpatient, outpatient and follow-up treatment by a haematologist
- 'Inpatient, outpatient and follow-up treatment by an oncologist
- 'Laboratory research of blood count related to leukaemia
- 'Inpatient, outpatient and follow-up treatment by an internal specialist (internist)'⁵⁴.
- 4.3.2 Information on MedCOI indicated that the medication used to treat chronical myelogenous leukaemia in acceleration phase can be obtained at:
 - 'D Watson Chemist Blue Area, Islamabad (private facility):
 - 'Al Kausar Medicos MA Jinnah Road, Karachi (private facility):
 - 'Hydroxycarbamide (= hydroxyurea)
 - 'Oncology: cytostatics/ chemotherapy/ antineoplastics
 - o 'Nilotinib hydrochloride monohydrate, Oncology: other.'55

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4.4 Other cancers

4.4.1 The Shaukat Khanum Memorial Cancer Hospital and Research Centre situated in Lahore and Peshawar noted provision of:

[•]... holistic care to breast cancer patients while making sure that every patient feels comfortable. We provide state-of-the-art diagnostic and treatment facilities, including chemotherapy, surgery, radiotherapy, and more advanced targeted treatments. Our surgical department offers all the latest surgical techniques for breast cancer, including mammoplasties, wire guided surgeries, sentinel lymph node biopsy (SLNB), fat transfer, breast reconstruction (implants & flaps), and nipple reconstruction.⁷⁵⁶

⁵³ Express Tribune, <u>Cancer treatment out of reach for the poor</u> 17 April 2024

⁵⁴ MedCOI, 14 July 2018

⁵⁵ MedCOI, 14 July 2018

⁵⁶ Shaukat Khanum Memorial Trust, <u>Breast Cancer in Pakistan...</u>, no date

- 4.4.2 Aga Khan University Hospital⁵⁷ and the Shifa International Hospital^{58 59} (both private facilities) provided treatment for breast cancer.
- 4.4.3 The Aga Khan University Hospital noted in an undated report that 'Cancer in the prostate is a relatively common disease amongst ageing men.'⁶⁰ Both Aga Khan University Hospital and the Shifa International Hospital noted services providing surgery, radiation, hormone therapy, and chemotherapy for prostate cancer⁶¹ ⁶².

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5. Cardiology (heart conditions)

5.1 Treatment and resources

5.1.1 Samad Z and Hanif B observed that:

'At present, 1147 trained cardiologists have been awarded cardiology fellowship through the College of Physicians and Surgeons Pakistan and 813 trainees are enrolled in 47 approved training programs...

'Intentional investment in the management of CVDs [cardiovascular diseases] has included the development of a network of cardiac care hospitals: there are 9 satellite centers across the Sindh Province with a flagship center, the National Institute of Cardiovascular Diseases, in Karachi.'⁶³

- 5.1.2 A MedCOI response in 2019 noted that the following treatments and procedures were available at the Aga Khan University Hospital, Karachi and the Shifa International Hospital, Islamabad, both private facilities:
 - 'Cardiac Surgery of Catheter Ablation [removing a faulty electrical pathway of the heart]
 - 'Electrical cardioversions procedures
 - 'Outpatient/Inpatient treatment by a cardiac surgeon'⁶⁴.
- 5.1.3 A MedCOI response in 2019 noted the following treatments and procedures as available at the Aga Khan University Hospital and the Rawalpindi Institute of Cardiology (public facility):
 - 'Inpatient, outpatient treatment and follow up by a cardiologist
 - 'Placement of an Implantable Cardioverter Defibrillator [ICD]
 - 'Coronary Artery Bypass Grafting
 - 'Coronary Angioplasty [including a follow up]

⁵⁷ Aga Khan University Hospital, <u>Breast Tumour/ Breast Cancer</u>, no date

⁵⁸ Shifa International Hospital, Latest Advancements in Breast Cancer..., no date

⁵⁹ Shifa International Hospital, <u>Shifa Breast Clinic</u>, no date

⁶⁰ Aga Khan University Hospital, <u>Prostate Cancer</u>, no date

⁶¹ Aga Khan University Hospital, <u>Prostate Cancer</u>, no date

⁶² Shifa International Hospital, <u>Prostate Cancer Treatment...</u>, 13 December 2021

⁶³ Samad Z and Hanif B, Cardiovascular Diseases..., 24 April 2023

⁶⁴ MedCOI, 28 November 2019

- 'Heart Valve Surgery'⁶⁵.
- 5.1.4 In February 2020, MedCOI listed the following treatments and procedures available at the Aga Khan University Hospital and the Shifa International Hospital:
 - 'Outpatient treatment and follow up by a cardiologist
 - 'Diagnostic imaging by means of ultrasound of the heart (echocardiography)
 - 'Diagnostic imaging: ECG (electro cardio gram; cardiology)
 - 'Inpatient treatment by a cardiologist
 - 'Inpatient treatment by a cardiac surgeon
 - 'Outpatient treatment and follow up by a cardiac surgeon'⁶⁶

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5.2 Cost of treatment

5.2.1 Samad Z and Hanif B noted in an article dated April 2023 that the network of cardiac care centres in Sindh '... provide cost-free care to all patients with ST-segment–elevation myocardial infarction [(STEMI) a type of heart attack where there is a long interruption to the blood supply⁶⁷]...

'Cost of care is often borne by the patient because most patients (\approx 70%) choose to obtain care at private facilities. To protect against catastrophic health expenditure, the federal and provincial governments have introduced the Sehat Sahulat Program and the Social Health Protection Initiative [a health financing grant from the German Development Bank for the poor in the two provinces of Khyber Pakhtunkhwa and Gilgit Baltistan⁶⁸] to cover inpatient care. Initial reports from the Khyber Pakhtunkhwa Province show that cardiovascular care represents the highest number of claims. These initiatives ideally should evolve to cover outpatient visits, medications, and preventive primary care.⁶⁹

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6. Diabetes

- 6.1.1 The Diabetes Centre, with clinics in Islamabad and Lahore, noted provision of comprehensive preventive, promotive, curative and rehabilitative services for diabetes patients, irrespective of their ability to pay⁷⁰.
- 6.1.2 The Diabetes Association of Pakistan, Karachi, noted that it provided '[F]ree of cost services to the poor and deserving men, widows, orphans and children, medical care and consultation, hypoglycaemic agents, Insulin injections, advice on diet control and education on diabetes. "Foot Care

⁶⁵ MedCOI, 21 December 2019

⁶⁶ MedCOI, 4 February 2020

⁶⁷ NHS, <u>Diagnosis Heart attack</u> (STEMI), 13 July 2023

⁶⁸ Oxford Policy Management, Social health Protection Initiative in Pakistan, no date

⁶⁹ Samad Z and Hanif B, <u>Cardiovascular Diseases...</u>, 24 April 2023

⁷⁰ The Diabetes Centre, <u>Our Services</u>, no date

Clinic" provides consultation and treatment of infection due to diabetes.⁷¹

- 6.1.3 MedCOI responses in 2019 noted that the following treatments and procedures were available at the Aga Khan University Hospital, Stadium Road, Karachi and the Shifa International Hospital H-8, Islamabad, both private facilities:
 - 'Inpatient, outpatient and follow-up by a haematologist
 - 'Medical devices internal medicine: blood glucose self-test strips for use by patient
 - 'Laboratory research of blood glucose (incl: HbA1C/ glyc.Hb⁷²).'^{73 74 75}
- 6.1.4 MedCOI noted that medications used in the treatment of diabetes can be obtained from AI Kausar Medicos, M A Jinnah Road, Karachi (private facility), and D Watson Chemist, Blue Area, Islamabad, (private facility):
 - 'Metformin- diabetes: oral/ tablets
 - 'Gliclazide- diabetes: oral/ tablets⁷⁶
 - 'Insulin, premixed: combination of lispro (rapid acting)and insulin lispro protamine (intermediate acting)- diabetes: insulin injections; mix of intermediate and rapid acting
 - 'Insulin, premixed: aspart (rapid acting) and aspart protamine (intermediate acting) like
 Novomix - diabetes: insulin injections; mix of intermediate and rapid acting⁷⁷
 - 'Insulin: long acting [24hr]; insulin glargine like ®Lantus- diabetes: insulin injections; long acting [24 hr]
 - 'Empagliflozin diabetes: oral/ tablets
 - 'Dapagliflozin diabetes: oral/ tablets⁷⁸
 - 'Sitagliptin diabetes: oral/ tablets.'79

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7. Eye treatment (ophthalmology)

- 7.1.1 According to a MedCOI response in December 2019, inpatient, outpatient and follow-up was available at both the Aga Khan University Hospital, Karachi, and the Shifa International Hospital H-8, Islamabad, both private facilities⁸⁰.
- 7.1.2 A MedCOI response dated May 2020 noted that surgery, specifically ophthalmological laser treatment for cataracts was available at both Aga

⁷¹ Diabetes Association of Pakistan, <u>About DAP</u>, no date

⁷² Diabetes UK, What is HBA1C?, no date

⁷³ MedCOI, 16 May 2019

⁷⁴ MedCOI, 28 January 2019

⁷⁵ MedCOI, 21 January 2019

⁷⁶ MedCOI, 16 May 2019

⁷⁷ MedCOI, 28 January 2019

⁷⁸ MedCOI, 21 December 2019

⁷⁹ MedCOI, 2 May 2020

⁸⁰ MedCOI, 21 December 2019

Khan University Hospital, and Shifa International Hospital⁸¹.

- 7.1.3 The May 2020 MedCOI response noted that the following ophthalmic medication was available at:
 - 'Al Kausar Medicos, M A Jinnah Road, Karachi, (private facility):
 - 'D Watson Chemist Blue Area, Islamabad, (private facility):
 - 'Ketotifen fumarate eyedrops ophthalmology: antihistamines
 - o 'Bevacizumab ophthalmology: for macular degeneration
 - 'Ranibizumab ophthalmology: for macular degeneration
 - 'Bevacizumab and ranibizumab intra-ocular injections are available.'⁸²
- 7.1.4 See eye treatments offered at the Al-Shifa Trust Eye Hospital.

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8. Gastroenterology, internal medicine and diagnostic imaging

8.1.1 The Aga Khan University Medical College, Pakistan, noted on its website in its page on Gastroenterology accessed in May 2024 that it:

[•]... provides state-of-the-art endoscopy services and research activities of the GI faculty (four full-time and four non-full-time members) and has leading research productivity. The Section provides procedures which include esophagogastroduodenoscopy, endoscopic variceal sclerotherapy, endoscopic band ligation, colonoscopy, polypectomies, electrocoagulation, endoscopic retrograde cholangiopancreatography (ERCP), common bile duct stone extraction, etc. The Section has launched a new clinical GI service, the Esophageal pH and Manometry Unit, capable of performing 24-hour ambulatory oesophageal pH monitoring and oesophageal manometry.^{*83}

8.1.2 The Shifa International Hospital's Department of Gastroenterology and Hepatology stated it:

'... consists of seasoned Gastroenterologists, Consultants, Technicians, Nurses, and Pharmacists to offer patients thorough guidance about their illness and help them along their journey to recovery. The Gastroenterology department also provides consultancy to its neighbouring Liver Transplant Department [also see <u>Liver disease</u>], making a joint effort to provide the best possible medical treatment to its patients. Our specialists provide consultancy to pre and post-liver transplant patients.'⁸⁴

8.1.3 In February 2020 MedCOI noted that gastroenterological care/treatment such as tube feeding (nasogastric) and gastroenterological care/treatment such as tube feeding (PEG) was available at the Aga Khan University Hospital Stadium Road, Karachi and the Shifa International Hospital,

⁸¹ MedCOI, 21 May 2020

⁸² MedCOI, 21 May 2020

⁸³ The Aga Khan University Medical College, Pakistan, <u>Section of...</u>, no date

⁸⁴ Shifa International Hospitals Ltd, <u>Home- Gastroenterology</u>, no date

Islamabad⁸⁵. A dietician was available at the same facilities⁸⁶.

- 8.1.4 In January 2020 it was noted by MedCOI that inpatient, outpatient treatment and follow up by a gastroenterologist and gastrointestinal surgery was available at the Aga Khan University Hospital, Karachi and the Shifa International Hospital, Islamabad⁸⁷.
- 8.1.5 A MedCOI response, dated December 2019, noted that at the Aga Khan University Hospital in Karachi and the Shifa International Hospital in Islamabad, the following treatments were available:
 - 'Outpatient treatment and follow up by a general practitioner
 - 'Inpatient, outpatient and follow- up by an internal specialist (internist)
 - 'Inpatient, outpatient, and follow up treatment by an infectiologist'⁸⁸.
- 8.1.6 The December 2019 MedCOI response noted that Inpatient, outpatient and follow-up treatment by an endocrinologist was available at Aga Khan University Hospital, Karachi and Shifa International Hospital, Islamabad⁸⁹.
- 8.1.7 MedCOI further reported in December 2019 that diagnostic imaging by means of ultrasound was also available at the Aga Khan University Hospital Stadium Road in Karachi and the Shifa International Hospital in Islamabad .
- 8.1.8 MedCOI noted in September 2018 that diagnostic imaging by means of computed tomography (CT scan) and diagnostic imaging by means of MRI were available at the Aga Khan University Hospital Stadium Road in Karachi and the Shifa International Hospital in Islamabad⁹⁰.

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9. Geriatrics

9.1 Physical therapy, assistance, and medical orthopaedic devices

- 9.1.1 According to the Aga Khan University Hospital, it provided health consultations for people aged 60 and over⁹¹ and home health services that are '... designed to make quality medical care more easily accessible, comfortable and convenient for people who are elderly, chronically ill, living with incurable diseases, recovering from surgery, disabled or need specialised care.⁹²
- 9.1.2 The same source added that services included:
 - 'Long stay home care
 - 'Home nursing short procedures
 - 'Home physician consultation

⁸⁵ MedCOI, 19 February 2020

⁸⁶ MedCOI, 31 January 2020

⁸⁷ MedCOI, 31 January 2020

⁸⁸ MedCOI, 21 December 2019

⁸⁹ MedCOI, 21 December 2019

⁹⁰ MedCOI, 4 September 2018

⁹¹ The Aga Khan University Hospital, <u>About Us, Crossed the Age of 60?...</u>, no date

⁹² The Aga Khan University Hospital, <u>Home Health Services</u>, no date

- 'Home physiotherapy
- 'Medical equipment either for purchase or to rent.'93
- 9.1.3 The Shifa International Hospital noted its geriatric care services '... serves the health and wellness needs of adults at the age of 65 years and older. Anyone in this age range can receive primary care in our patient-centered medical home. However, our team is best suited to provide care for people who are:
 - '85 years and older
 - 'Have functional or cognitive limitations, or
 - 'Multiple, chronic medical conditions.'94
- 9.1.4 A MedCOI response in May 2020 noted that the following treatments and procedures were available at the Aga Khan University Hospital, Stadium Road, Karachi and the Shifa International Hospital H-8, Islamabad, both private facilities:
 - 'Inpatient, outpatient and follow-up by a physical therapist.'95
 - 'medical devices orthopaedics: walking aid such as a walker or a cane
 - 'home assistance / care at home by a nurse.'96
- 9.1.5 Also see <u>palliative care.</u>

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10. HIV/AIDS

10.1 Treatment and resources

10.1.1 The Pakistan Economic Survey 2022-23 cited Pakistan's National AIDS Control Program (NACP) and noted that:

'All four provinces also have dedicated HIV control programs. Through different modelling techniques, as per WHO data for year 2021, it is estimated that in Pakistan, 210,000 people are living with HIV/AIDS. The HIV response comprises of prevention and treatment. There are 49 HIV treatment centres across Pakistan, 4 in KPK, 2 in Balochistan, 2 in Islamabad, 16 in Sindh, and 25 in Punjab. As of December 2021, 29,626 HIV patients were taking Antiretroviral (ARV) medicines and 7,056 people were on ARV therapy.'⁹⁷

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11. Liver disease

- 11.1 Treatment
- 11.1.1 Alsa Pakistan, a private health company⁹⁸ stated it provided treatment for

⁹³ The Aga Khan University Hospital, <u>Home Health Services</u>, no date

⁹⁴ Shifa International Hospitals Ltd, <u>Geriatric Care Services</u>, no date

⁹⁵ MedCOI, 28 January 2019

⁹⁶ MedCOI, 2 May 2020

⁹⁷ Ministry of Finance, Pakistan Economic Survey 2022-23 (page 191), 2023

⁹⁸ Alsa Pakistan, <u>About, History of Alsa Pakistan</u>, no date

fatty liver disease⁹⁹ and the Shifa International Hospital, Islamabad, noted it '... is the pioneering and longest running liver transplant center in the country which houses Pakistan's largest liver transplant team providing quality and integrated care under one roof.'¹⁰⁰

11.1.2 Also see <u>Hepatitis</u>.

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11.2 Hepatitis

- 11.2.1 Both the Aga Khan University Hospital¹⁰¹¹⁰² and the Shifa International Hospital¹⁰³ noted provision of care for Hepatitis B and C (also <u>see Liver</u> <u>disease</u>).
- 11.2.2 A MedCOI response in December 2019 noted that treatment for chronic hepatitis C with cirrhosis of the liver (also see <u>Liver disease</u>) provided diagnostic research, transient elastography, and a test for liver fibrosis, for example, a Fibro scan was available at:
 - 'Aga Khan University Hospital, Stadium Road, Karachi (private facility)
 - 'Shifa International Hospital H-8, Islamabad (private facility)
 - 'Gastroenterology Associates, F- 8/3, Islamabad (private facility).'¹⁰⁴

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12. Mental health

12.1 General psychiatry

12.1.1 A report published in 2020 on mental healthcare in Pakistan, by medical practitioners Javed A and others, noted:

'Mental healthcare is provided mostly by public health sector although there have been some recent developments in the private sector as well. Psychiatric care offered by different sectors generally highlights the influence of the British allopathic system on psychiatric care. [...] There are around 400 qualified psychiatrists working in Pakistan. Most of the psychiatrists are working in urban cities although the posts of district psychiatrists have also been created throughout the country. Psychiatrists, in general, are working single handed, although major centers in the country are developing multidisciplinary services.'¹⁰⁵

12.1.2 The Shifa Tameer- e Millat University's Shifa, Department of Clinical Psychology's Psychological Services Clinic (private facility) indicated that there were '... psychological services for a range of psychiatric disorders such as depression, anxiety, Autism, ADHD [attention deficit hyperactivity disorder¹⁰⁶], PTSD [post- traumatic stress disorder¹⁰⁷], OCD [obsessive

¹⁰⁴ MedCOI, 21 December 2019

⁹⁹ Alsa Pakistan, <u>No Need to Panicked with Fatty Liver Disease</u>, no date

¹⁰⁰ Shifa International Hospital, Liver Transplant in Pakistan- A Milestone Achieved, 2023

¹⁰¹ Aga Khan University Hospital, <u>Hepatitis B</u>, no date

¹⁰² Aga Khan University Hospital, <u>Hepatitis C</u>, no date

¹⁰³ Shifa International Hospital, <u>Infectious Diseases</u>, no date

¹⁰⁵ Javed A and others, <u>Mental healthcare in Pakistan</u>, 2020

¹⁰⁶ NHS, <u>ADHD</u>, no date

¹⁰⁷ NHS, PTSD, no date

compulsive disorder¹⁰⁸] and management of stress, anger and emotional dysregulation.¹⁰⁹

- 12.1.3 A 2019 MedCOI response noted that treatment and procedures were available at the Aga Khan University Hospital, Stadium Road, Karachi, and the Shifa International Hospital H-8, Islamabad, both private facilities:
 - 'Inpatient, outpatient and follow-up by a psychiatrist
 - 'Inpatient, outpatient and follow-up by a psychologist.'¹¹⁰
- 12.1.4 The 2019 MedCOI response noted that mental health care for those with disabilities including long term institutional around the clock care was available at:
 - 'Sir Cowasgi Jahangir Psychiatry Institute, Latifabad, Hyderabad, (public facility).'¹¹¹
- 12.1.5 The WHO Mental Health Atlas 2020 profile for Pakistan published on 15 April 2022 noted that among 1,200 mental health workforce there were:
 - 300 psychiatrists
 - 200 mental health nurses
 - 100 psychologists
 - 600 social workers

operating in 'The care and treatment of persons with mental health conditions (psychosis, bipolar disorder, depression) [which] is included in national health insurance or reimbursement schemes...'¹¹²

- 12.1.6 The same source added that persons pay at least 20% towards the cost of services and medicines¹¹³.
- 12.1.7 The article on mental illness in Pakistan published in August 2023, authored by research fellow Alvi M H and others noted that 'In Pakistan, mental health services are now included in the Sehat Sahulat Program (a health insurance scheme for underprivileged citizens) but to a limited extent. Mental illness is often not covered by insurance, and government spending is considered the major source of financing for affordable healthcare.'¹¹⁴

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12.2 Drug addiction

12.2.1 In an article published in September 2023 entitled 'Drug overdose in Pakistan, a growing concern; A Review', authored by medical practitioners Ochani S and others, noted that 'In Pakistan, an estimated 7 million individuals take drugs regularly. Among them, 4 million use cannabis, and 2.7 million use opiates. Since 2005, ANF [Anti-Narcotics Force] Model

¹⁰⁸ NHS, <u>OCD</u>, no date

¹⁰⁹ Shifa Tameer-e-Millat University, Department of Clinical Psychology, no date

¹¹⁰ MedCOI, 28 January 2019

¹¹¹ MeCOI, 28 January 2019

¹¹² WHO, Mental Health Atlas 2020, 15 April 2022

¹¹³ WHO, Mental Health Atlas 2020, 15 April 2022

¹¹⁴ Alvi M H and others, Economic burden of mental illness in Pakistan..., August 2023

Addiction Treatment & Rehabilitation Centers (<u>MATRC</u>) have treated more than 14 000 patients.¹¹⁵ The Shifa Tameer-e-Millat University noted it provided supported rehabilitation services for chronic psychiatric disorders and substance use disorders¹¹⁶.

- 12.2.2 Treatment for drug addiction and alcohol abuse was also found to be available at The Islamabad Rehab Clinic (IRC)¹¹⁷.
- 12.2.3 Devex, a media platform for the global development community¹¹⁸ noted:

'DOST Welfare Foundation (DOST) is a nonprofit, non-governmental organisation established in August 1992 in response to the need for combating the increasing drug use and other related problems in Pakistan.

'DOST provides a comprehensive range of drug demand and drug harm reduction services for drug users in different community settings. DOST also works for the human rights protection, and for the rehabilitation and social reintegration of destitute, street children, juvenile offenders, women and minor children in prisons.

'With a staff of over 100, DOST provides a continuum of care and quality services through its programmes for drug abuse prevention, treatment and rehabilitation, drug harm reduction, HIV/ AIDS prevention, vocational skills training, research, advocacy and networking. All DOST programmes are based on human rights protection of marginalised groups such as drug users, street children, juvenile offenders, women and minor children in prisons. DOST enables these vulnerable persons to explore the underlying factors of their drug misuse and imprisonment, to come to terms with past traumatic experiences, examine attitudes and behaviour patterns, receive training in life and social skills and re-integrate into the community and society.'¹¹⁹

12.2.4 The news outlet Pakistan Forward¹²⁰ reported in March 2019 that:

'The Khyber Pakhtunkhwa (KP) government has opened Pakistan's first rehabilitation centre for users of crystal meth and other drugs to help addicts return to a normal life.

'The 100-bed facility is aimed at helping local residents addicted to drugs, especially crystal meth, also known as "ice". There are separate detoxification wards for males and females in the centre, set up with support from the Social Welfare Department.'¹²¹

12.2.5 Radio Free Europe/ Radio Liberty (RFE/ RL), an international media organisation that broadcasts and reports news and analysis to Eastern Europe, Central Asia and the Caucasus¹²² reported on 20 May 2023 that '…dozens of people … receive treatment at the Rokhana Saba drug rehabilitation center in northwestern Pakistan…Although there are no official

¹¹⁵ Ochani S and others, <u>Drug overdose in Pakistan, a growing concern; A Review</u>, September 2023

¹¹⁶ Shifa Tameer-e-Millat University, <u>Department of Clinical Psychology</u>, no date

¹¹⁷ IRC, <u>Home</u>, no date

¹¹⁸ Devex, <u>About- DOST Welfare Foundation</u>, no date

¹¹⁹ Devex, About- DOST Welfare Foundation, no date

¹²⁰ Pakistan Forward, <u>Home</u>, no date

¹²¹ Pakistan Forward, Pakistan's 1st rehab centre..., 15 March 2019

¹²² RFE/ RL, <u>About</u>, no date

statistics, health professionals in the South Asian nation of some 240 million warn that addiction to crystal meth is soaring.¹²³

- 12.2.6 A MedCOI response in 2019 noted that psychiatric treatment of drug addiction in a specialised clinic (rehab), inpatient, outpatient and follow- up treatment by a psychiatrist and psychologist (including clinical care with methadone) was available at the following facilities:
 - 'Dost Foundation, Hayatabad, Peshawar (private facility)
 - 'Free Meth Drug Addict Centre, Peshawar City, Peshawar (public facility).'¹²⁴
- 12.2.7 Also see the Government of the Punjab's Social Welfare and Bait- ul- Maal Department services at its <u>drug rehabilitation centre</u>¹²⁵.

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13. Musculoskeletal conditions

- 13.1.1 Non- surgical laser treatments for muscular, skeletal, and neurological pains was found to be available at the private facility Bio Flex Pakistan, located in Islamabad, Karachi, Peshawar and Khyber Pakhtunkhwa, a company which utilizes Canadian technology¹²⁶.
- 13.1.2 The same source added in a report on treatment published in June 2020:

'Musculoskeletal pain affects the individual's joints, muscles, ligaments, tendons, nerves, blood vessels, discs, or bones. The pain results in an injury to the body movement system of an individual.

'The musculoskeletal conditions include carpal tunnel syndrome, tendonitis, rheumatoid arthritis, osteoarthritis, bone fractures, fibromyalgia, degenerative disc disease, herniated disc, and others. These conditions are common at all ages...

'The common areas affected by musculoskeletal pain disorders (MSD) include shoulders, neck, wrists, legs, back, hips, knees, or feet.'¹²⁷

- 13.1.3 A MedCOI response dated August 2019 noted that inpatient, outpatient and follow-up treatment by a rheumatologist and physical therapist, as well as laboratory research related to rheumatologic diseases (like RA, ANA, anti-CCP) was available at the Combined Military Hospital (CMH), Lahore (Public Facility) and Shaikh Zaid Hospital Lahore, (Private Facility).¹²⁸
- 13.1.4 According to MedCOI in January 2020 Inpatient, outpatient and follow-up treatment by a physical therapist and a paediatric physical therapist was available at Aga Khan University Hospital, Karachi, and Shifa International Hospital, Islamabad (private facilities)¹²⁹.
- 13.1.5 MedCOI noted in a response dated 4 February 2020 that inpatient,

¹²⁶ Bioflex Pakistan, <u>Home</u>, no date

¹²³ RFE/ RL, <u>Crystal Meth Addiction "Rapidly Spreading" in Pakistan</u>, 20 May 2023

¹²⁴ MedCOI, 29 June 2019

¹²⁵ Social Welfare and Bait- ul- Maal, <u>Drug Rehabilitation Center</u>, no date

¹²⁷ Bioflex Pakistan, Musculoskeletal Pain Disorders and Treatment, 4 June 2020

¹²⁸ MedCOI, 28 August 2019

¹²⁹ MedCOI, 31 January 2020

outpatient and follow-up treatment were available by an orthopaedist / orthopaedic surgeon and a rheumatologist at Aga Khan University Hospital, Karachi, and Shifa International Hospital, Islamabad (private facilities)¹³⁰.

14. Neurological conditions including epilepsy

- 14.1.1 The private facility, Shalamar Hospital's Neurology Department noted it '...is trained to investigate, diagnose and treat neurological disorders. Our neurologists are involved in clinical research, clinical trials and translational research. The Neurology Department primarily offers diagnosis and treatment options for diseases relating to the neurological system^{'131}
- 14.1.2 An article published on 31 August 2023 entitled 'Novel Approaches for Treatment of Epilepsy', in the Pakistan Journal of Health Sciences, authored by medical practitioners, Waqar M A and others, noted that 'Epilepsy is a serious neurological disorder on the juncture of psychiatry and neurology. It is characterized by recurrent and episodic seizures which are due to excessive discharge by the brain neurons...'¹³²
- 14.1.3 Treatment for epilepsy was found to be available at the private facility, Shifa International Hospital¹³³, the National Epilepsy Centre, a non- governmental organisation (NGO) institution designed exclusively for epilepsy care¹³⁴, and the Aga Khan University Hospital¹³⁵.

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15. Obstetrics and gynaecology

- 15.1.1 Obstetrics and gynaecology care included:
 - Begum Haseena Memorial Hospital Complex (BHMHC), adjacent to Brainiacs Public School, Phase 2 New City, Wah Cantt, Pakistan¹³⁶ (NGO run facility with some free services)
 - A list of <u>obstetricians and gynaecologists in Islamabad</u>¹³⁷ (known as female or women's health specialists) in various private facilities
 - Shalamar Hospital's Obstetrics and Gynaecology, Shalimar Link Road, Larechs Colony, Lahore, Punjab 54000, Pakistan (private facility)¹³⁸
 - The Aga Khan Maternal and Child Care Centre, Hyderabad, Obstetrics and Gynaecology Services¹³⁹ (private facility)
 - Shifa International Department of Obstetrics and Gynaecology (private facility)¹⁴⁰

¹³⁰ MedCOI, 4 February 2020

¹³¹ Shalamar Hospital, <u>Neurology</u>, no date

¹³² Waqar M A and others, <u>Novel Approaches for Treatment of Epilepsy</u>, 31 August 2023

¹³³ Shifa International Hospitals Ltd, Epilepsy Treatment through..., last updated 2023

¹³⁴ National Epilepsy Centre, <u>Improve Quality of Life of People with Epilepsy</u>, no date

¹³⁵ The Aga Khan University Hospital, <u>Symptomatic Epilepsy</u>, no date

¹³⁶ BHMHC, Obstetrics and gynaecology, no date

¹³⁷ Oladoc, <u>200 Best Gynaecologists in Islamabad</u>, no date

¹³⁸ Shalamar Hospital, Obstetrics and gynaecology, no date

¹³⁹ Aga Khan University Hospital, <u>Obstetrics and gynaecology Services</u>, no date

¹⁴⁰ Shifa International Hospital, <u>Department of Obstetrics and gynaecology</u>, no date

16. **Orthopaedics**

- 16.1.1 The Aga Khan University Hospital's Section of Orthopaedic Surgery noted it provides a broad spectrum of surgical treatments to patients suffering from bone, joint, ligament, tendon, muscle, and nerve diseases and injuries that cause pain and affect mobility.'141
- 16.1.2 The same source added that:

'...services that include but are not limited to surgical and non-surgical treatments for fractures and trauma. In addition, we have state-of-the-art specialists who treat sports injuries, tendon, cartilage, and ligament injuries, perform primary and revision knee, hip and shoulder replacements, bone, and soft tissue tumour surgeries, and handle paediatric orthopaedic, hand, brachial plexus, and spine related issues.

... specialists work closely with and are supported by radiology, laboratory, pharmacy, physiotherapy, and rehabilitation specialists among others.

'Some of the specialist orthopaedic services offered ... include:

- 'Foot and ankle clinic
- 'Sports Medicine and Injuries Clinic
- 'Joint Replacement Surgery
- 'Flat Foot Correction
- 'Brachial Plexus Treatment •
- 'Bone and Joint Tumour Surgery •
- 'Limb Lengthening and Reconstructive Surgery.'142 •
- 16.1.3 The Shifa International Hospital in Islamabad noted that its:

'Orthopaedic surgery is a specialty dealing with acute injuries, congenital and acquired disorders, and chronic arthritic or overuse conditions of the bones, joints, and their associated soft tissues, including ligaments, nerves, and muscles...

'The orthopaedic surgeons are dealing with all major elective procedures such as hip and knee replacements, limb preservation surgery in bone tumours, knee and shoulder arthroscopies, limb length and limb deformity correction with Ilizarov external fixators... The orthopaedic unit provides 24/7 trauma services and covers all aspects of trauma including pelvic and acetabular fracture fixation, intramedullary nailing, management of open and closed fractures...'143

16.1.4 See also a list of orthopaedic surgeons in Islamabad from various private facilities¹⁴⁴ and private clinics that provide orthopaedic services in

 ¹⁴¹ Aga Khan University Hospital, <u>Section of Orthopaedic Surgery</u>, no date
 ¹⁴² Aga Khan University Hospital, <u>Section of Orthopaedic Surgery</u>, no date

¹⁴³ Shifa International Hospital, Orthopaedic Surgery, no date

¹⁴⁴ Oladoc, <u>83 Best Orthopaedic Surgeons in Islamabad</u>, no date

Pakistan¹⁴⁵.

- 16.1.5 A MedCOI response in 2020 noted that inpatient, outpatient and follow- up by an orthopaedist/ orthopaedic surgeon and rheumatologist [also see <u>musculoskeletal conditions</u>] was available at:
 - 'Aga Khan University Hospital, Stadium Road, Karachi (private facility)
 - 'Shifa International Hospital, H-8, Islamabad (private facility).'¹⁴⁶

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17. Paediatrics (children)

17.1 Health strategies and programmes

17.1.1 WHO EMRO observed in an undated report on maternal, newborn and child health that:

'WHO's reproductive, maternal, newborn, child and adolescent health programme provides technical support to health authorities at federal, provincial and area levels for implementing maternal, newborn and child health strategies and programmes. In this regard, technical staff is recruited by WHO in all 4 provinces and at federal level to ensure effective coordination and collaboration.

'WHO is partnering with UNICEF [United Nations International Children's Emergency Fund] to support Ministry of National Health Services, Regulation and Coordination in developing a Strategic Framework on Quality of Care to improve quality of services for mothers and newborns in the country. In partnership with UNICEF and UNFPA [United Nations Population Fund], WHO is supporting implementation of maternal and perinatal death surveillance and response in the provinces of Khyber Pakhtunkhwa and Balochistan. Best practices and learning from this experience will be documented and used as guidance for technical and geographical scaling up over the next years, especially in the priority districts where family practice approach will be implemented.

'WHO has provided technical support to the federal and provincial departments of health for translating the National Health Vision (2016-2025) into 5-year Costed Strategic Action Plans for all 4 provinces and 3 Regions of the country. These action plans provide guidance for implementation, as well as being a powerful advocacy tool for domestic and foreign resource mobilization to support reproductive, maternal, newborn, child and adolescent health programming. WHO is also committed to support development of monitoring and evaluation frameworks for tracking progress against the above mentioned action plans and achieving the set targets.'¹⁴⁷

17.1.2 WHO EMRO further noted in an undated report on immunization that it'... aims to protect mothers and newborn against tetanus. Immunizing children with these vaccines may avert up to 17% of childhood mortality in Pakistan and thus help contribute towards achieving Sustainable Development Goal

¹⁴⁵ What Clinic, Orthopaedic Clinics in Pakistan, no date

¹⁴⁶ MedCOI, 4 February 2020

¹⁴⁷ WHO EMRO, <u>Maternal, newborn and child health</u>, no date

(SDG) 3, on reducing child morbidity and mortality.¹⁴⁸

- 17.1.3 MedCOI responses in 2020 noted that inpatient, outpatient and follow-up consultation and treatment by a paediatrician (in general paediatrics), and specialist treatments of diagnostic imaging by means of x-ray radiography was available at the following facilities:
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility)
 - 'Shifa International Hospital, Pitras Bukhari Road, H-8/4, Islamabad (private facility).'^{149' 150}
 - Liaquat National Hospital, Stadium Road, Karachi, (private facility)¹⁵¹
- 17.1.4 Also see Obstetrics and gynaecology

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17.2 Cardiology

17.2.1 Referring to paediatric cardiac surgery, a MedCOI response in 2020, noted:

'Each year, about 50,000-70,000 children are born with congenital heart defects, and almost 25% are in need of surgery within the first year. There are no specialised Children's Heart Hospitals in Pakistan, according to the Pakistan Children Heart Foundation. A paediatric interventional cardiologist was quoted in a newspaper article to say: "A fully functional, state-of-the-art centre with doctors who are specifically trained for such paediatric cases [congenital heart diseases] does not exist in our country," laments Dr Hasan. "Children's Hospital in Lahore is the only exception. The rest of the country has three centres that have this facility, including Karachi's National Institute for Cardiovascular Diseases (NICVD) and Agha Khan University Hospital (AKUH)". Information from Aga Khan University confirms that 4 facilities in the country can perform surgery on patients with congenital heart diseases.

'The country has about 21-25 trained paediatric cardiologists and 4-8 paediatric cardiac surgeons, as the exact number varies slightly according to different sources. Most trained Pakistani surgeons leave the country for countries with better pay and better quality of life, though some are said to be returning to Pakistan. According to the Pakistan Children Heart Foundation, this results in long queues, with 9,000 patients waiting for surgery and 25-30 new cases added to the list each week. According to the Head of Paediatric Cardiology, National Institute of Cardiovascular Diseases (NICVD), 22,000 surgeries need to be performed each year, but only 4,000 are performed each year.

'Due to long wait times, many who can afford go to India for treatment. There may also be other reasons – a patient with Tetralogy of Fallot was advised to seek treatment in India, because although the procedure could be done in Pakistan, the post-operative care was according to the treating doctor not adequate. However, the political tension between the country means it can

¹⁴⁸ WHO EMRO, <u>Expanded Programme on Immunization</u>, no date

¹⁴⁹ MedCOI, 2 December 2020

¹⁵⁰ MedCOI, 6 August 2020

¹⁵¹ MedCOI, 6 August 2020

sometimes be difficult for Pakistani families to obtain a visa.¹⁵²

- 17.2.2 Information found from MedCOI responses in 2020 noted examples of treatment for congenital heart disease in paediatrics:
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility):
 - 'Armed Forces Institute of Cardiology (AFIC), Peshawar Road, Rawalpindi (public facility):
 - o 'Inpatient, outpatient and follow-up by a paediatric cardiologist
 - o 'Inpatient, outpatient and follow-up by a paediatric cardiac surgeon
 - o 'Placement, maintenance and follow-up of pacemaker
 - 'Diagnostic imaging by means of ultrasound of the heart (= echocardiography = echocardiogram = TTE)
 - 'Diagnostic imaging : ECG (electro cardio gram; cardiology)
 - o 'Cardiac surgery; paediatric heart surgery.'^{153, 154}

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17.3 Child psychiatry

- 17.3.1 A MedCOI response from 2020 noted that the following treatment was available at:
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility):
 - o 'Inpatient, outpatient, and follow- up by a child psychiatrist
 - 'Inpatient, outpatient, and follow-up by a child psychologist
 - Outpatient treatment, diagnostics and counselling by a clinical geneticist.¹⁵⁵
- 17.3.2 Also see Mental health

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17.4 Ear, nose and throat (ENT), and dentistry

- 17.4.1 The MedCOI response noted that paediatric ear, nose and throat (ENT), and dentistry (including oral/ dental surgery) inpatient, outpatient and follow-up treatments were available at the following facilities:
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility)
 - 'Shifa International Hospital, Pitras Bukhari Road, H-8/4, Islamabad (private facility).'¹⁵⁶

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17.5 Endocrine system (hormone- secreting glands), thyroid, and diabetes

17.5.1 The 2020 MedCOI response indicated that paediatric treatments in

¹⁵² MedCOI, 29 January 2020

¹⁵³ MedCOI, 3 November 2020

¹⁵⁴ MedCOI, 2 December 2020

¹⁵⁵ MedCOI, 2 December 2020

¹⁵⁶ MedCOI, 2 December 2020

endocrinology and thyroid gland was available at the following facilities:

- 'Agha Khan University Hospital, Stadium Road, Karachi (private facility):
- 'Shifa International Hospital, Pitras Bukhari Road, H-8/4, Islamabad (private facility):
 - 'Inpatient, outpatient, and follow-up by endocrinologist¹⁵⁷
 - 'laboratory research of thyroid functions (TSH, T3, T4) [Thyroid function tests used to check for thyroid problems¹⁵⁸]
 - 'laboratory research / monitoring of full blood count; e.g. Hb, WBC & platelets [complete blood count or blood test to look at overall health conditions¹⁵⁹]
 - 'laboratory research of IGF-1 [insulin-like growth factor 1, a hormone that manages the effects of growth in the body¹⁶⁰] serum concentrations
 - o 'Inpatient, outpatient and follow-up by a dietitian.'¹⁶¹

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17.6 Gastroenterology

- 17.6.1 The 2020 MedCOI response indicated gastroenterology treatment in paediatrics was available at:
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility):
 - 'Shifa International Hospital Pitras Bukhari Road, H-8/4 Islamabad (private facility):
 - 'Inpatient, outpatient and follow-up treatment by a paediatric gastroenterologist
 - 'Gastroenterological care/ treatment such as tube feeding (PEG)'¹⁶².

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17.7 Maple Syrup Urine Disease (MSUD)

- 17.7.1 According to the UKs National Health Service (NHS) 'Maple syrup urine disease (MSUD) is a rare but serious inherited condition. It means the body cannot process certain amino acids (the "building blocks" of protein), causing a harmful build-up of substances in the blood and urine...Babies with MSUD are unable to break down amino acids called leucine, isoleucine and valine. Very high levels of these amino acids are harmful.'¹⁶³
- 17.7.2 In an article published in the Journal of the Pakistan Medical Association, medics Allahwala A, Ahmed S and Afroze B noted that findings from 3

¹⁵⁷ Cleveland Clinic, <u>Endocrinologist</u>, no date

¹⁵⁸ Health Direct, <u>Thyroid function tests</u>, no date

¹⁵⁹ Mayo clinic, Complete blood count (CBC), no date

¹⁶⁰ Medline Plus, IGF-1 (Insulin- like Growth Factor 1) Test, Last updated 10 August 2021

¹⁶¹ MedCOI, 2 December 2020

¹⁶² MedCOI, 2 December 2020

¹⁶³ NHS, <u>Maple syrup urine disease</u>, no date

patients took place from a study indicating treatment for MSUP disease was available at the Department of Paediatrics and Child Health, Aga Khan University, Karachi, Pakistan¹⁶⁴.

17.7.3 References to treatment of MSUD were made at <u>Liaquat National Hospital</u>, and the <u>Aga Khan University Hospital</u>.

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17.8 Neurology and epilepsy

- 17.8.1 MedCOI responses in 2020 noted neurological treatment in paediatrics was available at:
 - 'Shifa International Hospital, Pitras Bukhari Road, H-8/4 Islamabad (private facility):
 - \circ 'Inpatient, outpatient and follow-up treatment by a paediatric neurologist 165
 - 'Agha Khan University Hospital, Stadium Road, Karachi (private facility):
 - 'Liaquat National Hospital, Stadium Road, Karachi (private facility):
 - 'Inpatient, outpatient and follow- up treatment by a paediatric neurologist.'^{166' 167}
 - 'Neurosurgery: neurosurgical treatment of epilepsy
 - 'Special clinic for epilepsy patients
 - 'Diagnostic imaging by means of EEG (Electro Encephalo Gram).'¹⁶⁸
- 17.8.2 Information on MedCOI in 2020 indicated that medication for epilepsy in paediatrics can be obtained at the following facilities:
 - 'Aga Khan Super Market Pharmacy, Clifton, Karachi (private facility):
 - 'Al Kausar Medicos, M A Jinnah Road, Karachi, (Private Facility):
 - o 'Carbamazepine- neurology: antiepileptics
 - 'Valproic acid OR valproate OR Depakine® neurology: antiepileptics
 - 'Diazepam (rectiole/ rectal suppository for epileptic attacks) neurology: benzodiazepines to treat acute attacks e.g. status epilepticus
 - 'Midazolam (i.m. injection for epileptic attacks) neurology: benzodiazepines to treat acute attacks e.g. status epilepticus'¹⁶⁹

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¹⁶⁴ Allahwala A and others, <u>Maple syrup urine disease...</u>, 21 January 2021

¹⁶⁵ MedCOI, 2 December 2020

¹⁶⁶ MedCOI, 2 December 2020

¹⁶⁷ MedCOI, 6 August 2020

¹⁶⁸ MedCOI, 6 August 2020

¹⁶⁹ MedCOI, 6 August 2020

17.9 Ophthalmology (eyes)

- 17.9.1 Information on MedCOI in 2020 noted treatment in paediatric ophthalmology was available at:
 - 'AI Shifa Eye Trust near Ayub Park, Rawalpindi (private facility).'¹⁷⁰

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17.10 Special Educational Needs (SEN) provision and care

- 17.10.1 MedCOI noted in 2020 responses that paediatric care such as special schooling was available at the following facilities:
 - 'Bahria Special Children School, PNS Karsaz, Karachi (private facility)
 - 'Umeed e Noor School, H-8/1, Islamabad, (private facility)¹⁷¹
 - 'Zainab House for Special Children, Jamshed Road, Karachi (private facility).'¹⁷²

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17.11 Speech therapy

17.11.1 Referring to a child with special educational needs, a MedCOI response in 2020 noted that outpatient treatment and follow up by a speech therapist was available at Aga Khan University Hospital and Liaquat National Hospital, both private facilities in Karachi¹⁷³.

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18. Palliative care

18.1 Hospitals

18.1.1 A 2024 article on gaps in palliative care, authored by Manal H, Faisal A B, Salman R, Waqar M A of the Section of Palliative Medicine at Aga Khan University Hospital, Karachi, found that palliative care in Pakistan faced significant challenges due to limited availability and accessibility. Palliative care was often overshadowed by curative treatments, with only a few institutions offering services, mostly in the private sector. The report noted that:

'As per the statistics provided by the Atlas of Palliative Care in the Eastern Mediterranean Region, in Pakistan, there is an annual need for palliative care among 870,813 individuals. However, the available palliative care services are limited to just 16, resulting in a mere 0.01 palliative care services per 100,000 people. Only a small number of institutions in the nation currently offer formal palliative care services, and they are mostly in the private sector. There are also a few hospices sponsored by nonprofit or non-governmental organizations in Karachi, Hyderabad, and Rawalpindi. Five major tertiary care hospitals in Pakistan currently provide palliative care as a specialty multidisciplinary service, two of which are situated in Karachi. These hospitals are the Aga Khan University Hospital (AKUH) and The Indus

¹⁷⁰ MedCOI, 2 December 2020

¹⁷¹ MedCOI, 2 December 2020

¹⁷² MedCOI, 6 August 2020

¹⁷³ MedCOI, 6 August 2020

Hospital (TIH), as well as the Islamabad-based Shifa International Hospital (SIH) and the Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCHRC) in Lahore and Peshawar.¹⁷⁴

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19. Pulmonology (lung diseases)

- 19.1.1 Lifeline Hospital, at, D-14 Shahrah-e-Sher Shah Suri North, Nazimabad, Karachi, Pakistan, a multispecialty private hospital¹⁷⁵ noted in a report published on 4 February 2024 entitled 'What is Pulmonology in Pakistan, Well Explained', that conditions treated by pulmonologists in Pakistan are:
 - 'Asthma
 - 'Chronic Obstructive Pulmonary Disease (COPD)
 - 'Pneumonia
 - 'Tuberculosis (TB)
 - 'Lung Cancer
 - 'Interstitial Lung Disease (ILD)
 - 'Sleep Disorders
 - 'Occupational Lung Diseases
 - 'Pulmonary Hypertension.'¹⁷⁶
- 19.1.2 MedCOI responses in 2020 noted that the Aga Khan University Hospital, Karachi, and the Shifa International Hospital, both private facilities provided the following treatment for pulmonology, including bronchial asthma and tuberculosis (TB):
 - 'Inpatient, outpatient and follow- up by a tuberculosis specialist
 - 'Laboratory research: resistance test for tuberculosis.¹⁷⁷
 - 'Laboratory research: sputum smear microscopy (tuberculosis)
 - 'Impatient, outpatient and follow- up by a pulmonologist^{178, 179}
 - 'Medical devices pulmonology: CPAP therapy, maintenance and repair, and for home use [CPAP treatment, or continuous positive airway pressure therapy, is a treatment method for patients who have sleep apnoea. CPAP machines use mild air pressure to keep the airways open and are typically used by patients who have breathing problems during sleep¹⁸⁰].
 - 'Medical devices pulmonology: oxygen therapy with device and nasal

¹⁷⁵ Lifeline Hospital, <u>Our story</u>, no date

¹⁷⁴ Manal H and others, <u>Uncovering the Gaps of Palliative Care in Pakistan</u>, 2024

¹⁷⁶ Lifeline Hospital, What is Pulmonology in Pakistan, Well Explained, 4 February 2024

¹⁷⁷ MedCOI, 4 February 2020

¹⁷⁸ MedCOI, 5 September 2020

¹⁷⁹ MedCOI, 5 June 2019

¹⁸⁰ Midlands Pulmonary, <u>CPAP Treatment</u>, no date

catheter

- 'Medical devices pulmonology: oxygen therapy with O2 pressure tank.'¹⁸¹
- 19.1.3 MedCOI responses in 2019 and 2020 noted that the following medication for tuberculosis was available at:
 - 'Al Kausar Medicos M A Jinnah Road, Karachi (private facility):
 - 'D Watson Chemist Blue Area, Islamabad (private facility):
 - o 'Isoniazid- infections: tuberculosis; first-line
 - o 'moxifloxacin hydrochloride: tuberculosis; second/ third line.¹⁸²
 - o 'Clarithromycin- Infections: antibiotics
 - 'Ethambutol- Infections: Tuberculosis, leprosy
 - 'Rifabutin- Infections: Tuberculosis, leprosy.'¹⁸³

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19.2 Tuberculosis (TB)

19.2.1 The Pakistan Economic Survey 2022-23 referred to Pakistan's National TB Control Programme and noted that its TB care services included:

[•]... 1,743 diagnostics centres, 33 specialized centres for DRTB management, 361 GeneXpert sites for DRTB [Drug-Resistant TB], 44 TB HIV centres for management of co-infections and over 8,000 GPs are engaged in TB control program. The private sector has also been engaged to boost TB case finding and till date the TB treatment coverage is 339,256 with success rate of 94 percent and additional treatment of 2,881 cases of DRTB. Most recently, national TB control program has announced helpline number to guide TB patients and communities across the country to pursue advice and spread awareness on TB-related information.^{'184}

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20. Renal (kidney) failure and dialysis

20.1.1 In a report published on 26 September 2023, the Aga Khan University Hospital stated that 'Online Hemodiafiltration (OL-HDF) is the most technologically advanced form of dialysis, now available at the Aga Khan University Hospital, Pakistan. It offers a more thorough and efficient removal of toxins from the body, particularly larger toxins and substances, as compared to conventional dialysis.

'OL-HDF is performed using a dedicated dialysis machine. Just like conventional dialysis, it is done three times a week with each session lasting 4 hours or as per your nephrologist's prescription.

⁶OL-HDF has certain advantages over the conventional dialysis therapies, making it the most optimal form of dialysis currently available. The combination of effective toxin removal and improved fluid balance means

¹⁸¹ MedCOI, 5 September 2020

¹⁸² MedCOI, 4 February 2020

¹⁸³ MedCOI, 12 June 2019

¹⁸⁴ Ministry of Finance, <u>Pakistan Economic Survey 2022-23</u> (pages 190 to 191), 2023

that patients on OL-HDF have an overall better sense of well-being. Other advantages are as follows:

- 'Improved chances of patient survival
- 'Significantly reduced tiredness and lethargy after dialysis
- 'Reduced inflammation in the body
- 'Better blood pressure control; lesser chances of blood pressure falling during dialysis
- 'Increased tolerance of fluid removal (ultrafiltration)
- 'Better bone health and strength
- 'Improved haemoglobin levels
- 'Reduced itching, skin rashes, and pain in legs, especially at night.'¹⁸⁵

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21. Sheltered housing, care homes and carer support

21.1.1 The Edhi Foundation¹⁸⁶ run by the help of volunteers,

'... has set up 18 homes all over Pakistan (seven homes are running at Karachi). As a whole, 8500 younger boys and girls including elder ladies and gents have been accommodated in 18 homes. Among them, are abandoned and orphan boys and girls, mentally retarded and physical disabled, as well as for the shelter-less and helpless male and female people are living in these exclusive Edhi homes. Besides, the tortured women in the aftermath of domestic violence also reside there [also see the Country Policy and Information Note on Pakistan: Women fearing gender-based violence].

'[A] Number of Edhi homes which have been established at different cities of Pakistan are stated here as—Karachi 7, Multan 1, Lahore 3, Islamabad 1, Peshawar 1, Quetta 1, and Chitral 1. The residents in the Edhi homes are numbered at 8500.'¹⁸⁷

- 21.1.2 A 2019 MedCOI noted that geriatric care, psychiatric treatment (including for chronic psychotic patients), and long- term institutional around the clock care in sheltered housing was available at:
 - 'Edhi Homes, Sohrab Goth, Karachi (private facility).'188
- 21.1.3 The Holistic healthcare Services, a private company based in Lahore¹⁸⁹, stated provision of care for relatives at home in Pakistan included:
 - Physiotherapy
 - Speech and Occupational Therapy (See <u>speech therapy</u>)
 - Assistant nurses

¹⁸⁵ Aga Khan Hospital, <u>Online Hemodiafiltration: The Most Optimal...</u>, 26 September 2023

¹⁸⁶ Edhi Foundation, <u>Home</u>, no date

¹⁸⁷ Edhi Foundation, Edhi Homes and Orphanage Centres, no date

¹⁸⁸ MedCOI, 28 January 2019

¹⁸⁹ Holistic Healthcare Services, <u>Contact us</u>, no date

- Caregivers
- ICU (Intensive care unit) trained nurses
- Medical attendants
- Psychotherapists
- General Physicians
- Disabled care

Located at: Lahore, Islamabad, Faisalabad and Karachi¹⁹⁰

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22. Speech and occupational therapy

- 22.1.1 The private company, Holistic Healthcare Services, offered speech and occupational therapy. Its Occupational Therapy (OT) support included:
 - 'Development of fine motor and gross motor skills
 - 'Development of cognitive skills that will result in better problem- solving abilities
 - 'Enhancing social skills and communication at different levels.'¹⁹¹
- 22.1.2 The same source added 'Our speech therapy services can treat a wide range of language and speech delays.'¹⁹²

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¹⁹⁰ Holistic Healthcare Services, <u>Care for Every Situation</u>, no date

¹⁹¹ Holistic Healthcare Services, <u>Speech and Occupational Therapists</u>, no date

¹⁹² Holistic Healthcare Services, Speech and Occupational Therapists, no date

Annex A

Availability of pharmaceutical drugs list cited by MedCOI

The following non-exhaustive A-Z list of drugs, cited by MedCOI, were noted as available in Pakistan, either in pharmacy or online (per dosage form/ number per box/ cost in Pakistan Rupees included, where given; out of pocket payment may be required):

A-D

Acetylsalicylic acid¹⁹³; Alendronate sodium (alendronic acid)¹⁹⁴; Allopurinol¹⁹⁵; Amitriptylin¹⁹⁶; Amlodipine Norvasc®¹⁹⁷; Aripiprazole¹⁹⁸; Atorvastatin¹⁹⁹; Azithromycin²⁰⁰; Betamethasone²⁰¹; Bevacizumab²⁰²; Bisoprolol²⁰³; Budesonide²⁰⁴; Bumetanide²⁰⁵; Calcium carbonate²⁰⁶; Candesartan²⁰⁷; Captopril²⁰⁸; Carbasalate calcium²⁰⁹; Carbomer eye drops²¹⁰; Carvedilol²¹¹; Cetirizine²¹²; Chlortalidone²¹³; Ciprofloxacin²¹⁴; Citalopram²¹⁵; Clarithromycin²¹⁶; Clemastine²¹⁷; Clozapine²¹⁸; Colecalciferol (vitamin D supplements)²¹⁹; Dapagliflozin²²⁰; Diazepam²²¹; Diclofenac Voltral²²²; Doxazosin²²³;

E-H

¹⁹³ MedCOI, 21 December 2019 ¹⁹⁴ MedCOI, 16 May 2019 ¹⁹⁵ MedCOI, 31 January 2020 ¹⁹⁶ MedCOI, 28 February 2020 ¹⁹⁷ MedCOI, 31 January 2020 ¹⁹⁸ MedCOI. 21 March 2020 ¹⁹⁹ MedCOI, 21 December 2019 ²⁰⁰ MedCOI, 31 January 2020 ²⁰¹ MedCOI, 16 May 2019 ²⁰² MedCOI, 21 May 2020 ²⁰³ MedCOI, 21 December 2019 ²⁰⁴ MedCOI, 16 May 2019 ²⁰⁵ MedCOI, 21 December 2019 ²⁰⁶ MedCOI, 16 May 2019 ²⁰⁷ MedCOI, 4 February 2020 MedCOI, 31 January 2020 ²⁰⁸ MedCOI, 4 February 2020 ²⁰⁹ MedCOI, 21 December 2019 ²¹⁰ MedCOI, 21 December 2019 ²¹¹ MedCOI, 21 December 2019 ²¹² MedCOI, 16 May 2019 ²¹³ MedCOI, 21 December 2019 ²¹⁴ MedCOI, 31 January 2020 ²¹⁵ MedCOI, 21 March 2020 ²¹⁶ MedCOI, 31 January 2020 ²¹⁷ MedCOI, 16 May 2019 ²¹⁸ MedCOI. 21 March 2020 ²¹⁹ MedCOI, 16 May 2019 ²²⁰ MedCOI, 16 April 2020 ²²¹ MedCOI, 16 May 2019 ²²² MedCOI, 31 January 2020 ²²³ MedCOI, 31 January 2020

Empagliflozin²²⁴; Enalapril²²⁵; Erythromycin²²⁶; Esomeprazole²²⁷; Escitalopram²²⁸; Etanercept²²⁹; Fluoxetine²³⁰; Fluticasone²³¹; Fluvoxamine²³²; Formoterol²³³; Furosemide²³⁴; Gabapentin²³⁵; Gliclazide²³⁶; Golimumab²³⁷; Haloperidol²³⁸; Hydrochlorothiazide²³⁹; Hypromellose eyedrops²⁴⁰.

I- L

Ibuprofen²⁴¹; Insulin, premixed: aspart (rapid acting) and aspart protamine (intermediate acting) like Novomix® (diabetes: insulin injections; mix of intermediate and rapid acting)²⁴²; Insulin: long acting 24hr; insulin glargine like Lantus® (diabetes: insulin injections; long acting 24 hr – 100 units/ml-3ml cartridge)^{243 244}; Insulin: rapid acting [2-5hr]; insulin aspart like Novorapid® (Diabetes: insulin injections; rapid acting [2-5 hr])²⁴⁵; Indometacin²⁴⁶; Infliximab²⁴⁷; Ipratropium²⁴⁸; Isoniazid²⁴⁹; Isosorbide dinitrate²⁵⁰; Isosorbide mononitrate²⁵¹; Ketotifen fumarate eyedrops²⁵²; Lactulose²⁵³; Latanoprost²⁵⁴; Levofloxacin²⁵⁵; Levocetirizine²⁵⁶; Lisinopril²⁵⁷.

M-P

Macrogol²⁵⁸; Magnesium hydroxide²⁵⁹; Metformin²⁶⁰; Metoprolol²⁶¹; Morphine²⁶²;

²²⁴ MedCOI, 16 April 2020 ²²⁵ MedCOI, 21 December 2019 ²²⁶ MedCOI, 31 January 2020 ²²⁷ MedCOI, 28 February 2020 ²²⁸ MedCOI, 21 March 2020 ²²⁹ MedCOI, 28 August 2019 ²³⁰ MedCOI, 21 March 2020 ²³¹ MedCOI, 16 May 2019 ²³² MedCOI, 21 March 2020 ²³³ MedCOI, 31 January 2020 ²³⁴ MedCOI, 4 February 2020 ²³⁵ MedCOI, 28 February 2020 ²³⁶ MedCOI, 21 December 2019 ²³⁷ MedCOI. 28 August 2019 ²³⁸ MedCOI, 29 June 2019 ²³⁹ MedCOI, 16 May 2019 ²⁴⁰ MedCOI, 21 December 2019 ²⁴¹ MedCOI, 28 February 2020 ²⁴² MedCOI, 21 December 2019 ²⁴³ MedCOI, 21 December 2019 ²⁴⁴ MedCOI, 25 July 2019 ²⁴⁵ MedCOI, 21 December 2019 ²⁴⁶ MedCOI, 28 August 2019 ²⁴⁷ MedCOI, 28 August 2019 ²⁴⁸ MedCOI, 16 May 2019 ²⁴⁹ MedCOI, 28 February 2020 ²⁵⁰ MedCOI, 21 December 2019 ²⁵¹ MedCOI, 21 December 2019 ²⁵² MedCOI, 21 May 2020 ²⁵³ MedCOI, 16 May 2019 ²⁵⁴ MedCOI, 26 January 2019 ²⁵⁵ MedCOI, 31 January 2020 ²⁵⁶ MedCOI, 16 May 2019 ²⁵⁷ MedCOI, 4 February 2020 ²⁵⁸ MedCOI, 21 December 2019 ²⁵⁹ MedCOI, 29 June 2019 ²⁶⁰ MedCOI, 21 May 2020 ²⁶¹ MedCOI, 21 December 2019 ²⁶² MedCOI, 26 January 2019

Moxifloxacin hydrochloride²⁶³; Naproxen²⁶⁴; Nebivolol²⁶⁵; Nifedipine²⁶⁶; Olanzapine²⁶⁷; Omeprazole²⁶⁸; Oxazepam²⁶⁹; Oxycodone²⁷⁰; Pantoprazole²⁷¹; Paracetamol²⁷²; Paroxetine²⁷³; Povidone eye drops²⁷⁴; Pravastatin²⁷⁵; Prednisone²⁷⁶; Pregabalin²⁷⁷.

Q-T

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Quetiapine<sup>278</sup>; Ramipril<sup>279</sup>; Ranibizumab<sup>280</sup>; Ranitidine<sup>281</sup>; Risedronate sodium<sup>282</sup>; Risperidone<sup>283</sup>; Salbutamol<sup>284</sup>; Salmeterol + fluticasone<sup>285</sup>; Saxagliptin hydrochloride<sup>286</sup>; Sertraline<sup>287</sup>; Sodium bicarbonate (= sodium hydrogen carbonate)<sup>288</sup>; Sodium (natrium) polystyrene sulphonate<sup>289</sup>; Temazepam<sup>290</sup>; Terbutaline<sup>291</sup>; Timolol<sup>292</sup>; Timolol + brimonidine (combination)<sup>293</sup>; Tiotropium<sup>294</sup>; Tramadol<sup>295</sup>.
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U-Z

Venlafaxine²⁹⁶; Vildagliptin Galvus®²⁹⁷; Warfarin²⁹⁸, Zolpidem²⁹⁹.

²⁶³ MedCOI, 28 February 2020
²⁶⁴ MedCOI, 28 February 2020
²⁶⁵ MedCOI, 31 January 2020
²⁶⁶ MedCOI, 16 May 2019
²⁶⁷ MedCOI, 21 March 2020
²⁶⁸ MedCOI, 28 February 2020
²⁶⁹ MedCOI, 16 May 2019
²⁷⁰ MedCOI, 26 January 2019
²⁷¹ MedCOI, 28 February 2020
272 ModCOL 21 December 2010
²⁷³ MedCOI, 21 March 2020
 ²⁷³ MedCOI, 21 December 2019 ²⁷³ MedCOI, 21 March 2020 ²⁷⁴ MedCOI, 21 December 2019 ²⁷⁵ MedCOI, 21 December 2019 ²⁷⁶ MedCOI, 16 May 2019 ²⁷⁷ MedCOI, 28 February 2020 ²⁷⁸ MedCOI, 24 March 2020
²⁷⁵ MedCOI, 21 December 2019
²⁷⁶ MedCOI, 16 May 2019
²⁷⁷ MedCOI, 28 February 2020
²⁷⁸ MedCOI, 21 March 2020
²⁷⁹ MedCOI, 4 February 2020
²⁸⁰ MedCOI, 21 May 2020
²⁸¹ MedCOI, 29 June 2019
²⁸² MedCOI, 16 May 2019
²⁸³ MedCOI, 21 March 2020
²⁸⁴ MedCOI, 31 January 2020
²⁸⁵ MedCOI, 16 May 2019
²⁸⁶ MedCOI, 16 April 2020
²⁸⁷ MedCOI, 21 March 2020
²⁸⁸ MedCOL 31 January 2020
²⁸⁹ MedCOI, 31 January 2020
 ²⁸⁹ MedCOI, 31 January 2020 ²⁹⁰ MedCOI, 26 January 2019 ²⁹¹ MedCOI, 31 January 2020 ²⁹² MedCOI, 26 January 2019 ²⁹³ MedCOI, 26 January 2019
²⁹¹ MedCOI, 31 January 2020
²⁹² MedCOI, 26 January 2019
²⁹⁵ MedCOL 26 January 2019
²⁹⁴ MedCOI, 16 May 2019
²⁹⁵ MedCOI, 21 December 2019
²⁹⁶ MedCOI, 21 March 2020
²⁹⁷ MedCOI, 16 April 2020
²⁹⁸ MedCOI, 21 December 2019
²⁹⁹ MedCOI, 28 November 2018
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Research methodology

The country of origin information (COI) in this note has been carefully selected in accordance with the general principles of COI research as set out in the <u>Common EU [European Union] Guidelines for Processing Country of Origin Information (COI)</u>, April 2008, and the Austrian Centre for Country of Origin and Asylum Research and Documentation's (ACCORD), <u>Researching Country Origin Information – Training Manual</u>, 2013. Namely, taking into account the COI's relevance, reliability, accuracy, balance, currency, transparency and traceability.

Each section has an 'updated' date up to which the COI included was published or made publicly available. These dates may vary from section to section. Any event taking place or report published after each section date will not be included in that section.

Sources and the information they provide are carefully considered before inclusion. Factors relevant to the assessment of the reliability of sources and information include:

- the motivation, purpose, knowledge and experience of the source
- how the information was obtained, including specific methodologies used
- the currency and detail of information
- whether the COI is consistent with and/or corroborated by other sources

Wherever possible, multiple sourcing is used and the COI compared and contrasted to ensure that it is accurate and balanced and provides a comprehensive and up-to-date picture of the issues relevant to this note at the time of publication.

The inclusion of a source is not an endorsement of it or any view(s) expressed.

Each piece of information is referenced in a footnote.

Full details of all sources cited and consulted in compiling the note are listed alphabetically in the <u>bibliography</u>.

Terms of Reference

A 'Terms of Reference' (ToR) is a broad outline of the issues relevant to the scope of this note and forms the basis for the <u>country information</u>.

For this CPIN, the following topics were identified prior to drafting as relevant and on which research was undertaken:

- overview of the structure of the healthcare system including patient access to:
 - o public free or subsidised at point of entry
 - o private pay at point of entry
 - health insurance system private, public and community based insurance systems, cost and contributions
 - o non-government organisation (NGO) provision and assistance
 - costs to: consult a general practitioner, consult a specialist and receive treatment, contribute to an insurance scheme
- infrastructure and staffing
 - number, location and type of medical facility (and specialism) primary, secondary and tertiary
 - number and location in absolute and per head of population of nurses and doctors, including specialists
 - provide links to medical, dental and other healthcare practitioners, and hospitals
- pharmaceutical sector
 - o availability of <u>therapeutic drugs</u>
 - o accessibility of therapeutic drugs, cost and other factors affecting access
 - number and location of pharmacies
- specific <u>diseases/conditions</u> in alphabetical order including:
 - o cancer
 - national programme for control and treatment
 - availability of treatment: facilities, personnel and location
 - accessibility: cost of treatment and other factors affecting access, such as location of particular treatment centres
 - support in obtaining treatment from state, private or civil society sectors

[For each subsequent health condition research information as set out for cancer above. Note: some conditions may fit under more than one heading, for example, liver cancer]

- o blood and immune system conditions
- o cardiovascular conditions

- o Diabetes and other endocrinal, nutritional and metabolic conditions
- o digestive tract conditions
- \circ eye conditions
- o gynaecological conditions
- o HIV/AIDS
- o kidney conditions
- o liver conditions, including hepatitis
- o mental health, behavioural and neurodevelopmental conditions
- o musculoskeletal conditions
- o oral and dental conditions
- neurological conditions
- o palliative care
- o paediatric conditions
- o respiratory conditions, including Tuberculosis
- \circ skin conditions
- urological conditions

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