

OECD Health Statistics 2025

Definitions, Sources and Methods

Pharmacists graduates

Number of students who have obtained a recognised qualification in pharmacy in a given year.

Sources and Methods

Australia

Source of data: 2001 onwards: **Australian Department of Education**. Award course completions (unpublished data).

Coverage:

- The data represent award course completions in pharmacy as a broad field of education and may not specifically lead to registration as a pharmacist.
- Data are based on universities in Australia - this may exclude overseas campuses of Australian-based universities.

Austria

Source of data: **Statistics Austria**, University Statistics.

Reference period: Pharmacists graduates are reported for the year of study (e.g. 20xx/yy). Up to 2016 the number of graduates was reported in 20xx. Since 2017 the data have been postponed to 20yy (t+1) according to Eurostat regulations.

Coverage: Included are domestic and foreign pharmacist graduates who have obtained a recognised qualification in pharmacy. Excluded are bachelor's degrees.

Belgium

Source of data: **SPF Santé publique, sécurité de la chaîne alimentaire et de l'environnement**, DG2 Soins de Santé primaires et gestion de crises - FOD Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu DG2 Basisgezondheidszorg en Crisisbeheer. Cellule Planification des professionnels de santé - Cel planning Gezondheidsberoepen. Base de données fédérale des professionnels de soins de santé - Federale databank van de beoefenaars van de gezondheidszorgberoepen.

- Data on graduates are based on regional statistics of which the sources are **Communauté française et Vlaamse Gemeenschap**.

Reference period: 31st December.

Coverage: Complete.

Canada

Source of data:

- Health Workforce Database, **Canadian Institute for Health Information**, for data from 2000 to 2006 collected from individual schools of pharmacy, and for data collected from the Association of Faculties of Pharmacy of Canada after 2006.

- **Pharmacy Examining Board of Canada**, for data from 1988 to 1999.

Coverage:

- There are 10 schools in Canada offering pharmacy programs: Memorial University, Dalhousie University, Université de Montréal, Université Laval, University of Waterloo, University of Toronto, University of Manitoba, University of Saskatchewan, University of Alberta and University of British Columbia.
- 1997-2002 University of Alberta data include graduates from master's degree program.
- 2003 University of Saskatchewan data is not available.

Chile

Source of data: **National Council of Education** (Consejo Nacional de Educación, CNED), <https://datosabiertos.mineduc.cl/titulados-en-educacion-superior/> and **Ministry of Education** Data Bases System (SIES): www.mineduc.cl. The Ministry of Health, through the Department of Health Human Resources Planning, collects data from the Ministry of Education. Data is reported from "Índice" which is a database held by the National Education Council, available since 2005, and SIES (Superior Education Information System: www.mifuturo.cl/sies/) held by the Ministry of Education since 2007. The Universities, Professional Institutes and Technician's Training Centers feed these databases.

Reference period:

- Annual periodicity.
- The figure provided for a given year refers to those who graduated during the previous year, because the calendar of studies in the south hemisphere is from March to January. The graduation takes place most of the time in March or April. The inclusion in the CNED and SIES Registers takes place the following year of the graduation.

Coverage: Nationwide.

Break in time series: In 2021-22, there has been a change in the trend of graduates. Due to the COVID-19 pandemic, the graduation of many students, which should have occurred in 2021, was delayed to 2022. This explains the low number of graduates in 2021.

Colombia

Source of data: Calculations by the Direction of Human Talent Development in Health, **Ministry of Health, and Social Protection**, from the information published by the **Ministry of National Education**.

Coverage: National.

Costa Rica

Data not available.

Czechia

Source of data: **Ministry of education, youth, and sports**.

Reference period:

Coverage: Foreigners who graduated in the Czech Republic are included since 2001. Study programmes in English are included.

Break in time series: 2001, change of coverage.

Denmark

Source of data:

- 1980-2021 **The Danish Health Data Authority**, Labour Register for Health Personnel
- 2022-2023 **The Danish Health Data Authority**, Educational Statistic, STIL Educational Statistic, STIL.

Reference period: 31st December

Coverage: The number of pharmacist graduates from Danish schools. 1980-2021

Deviation from the definition:

Estimation method:

Break in time series: In 2022, there is a break in time series, as we have changed Labour Register for Health Personnel to Educational Statistics.

Estonia

Source of data:

- **Statistical Office**, annual reporting.
- **Ministry of Education and Research**.

Reference period: Given academic year.

Finland

Source of data: The students and qualifications of educational institutions statistics kept by **Statistics Finland**. The statistics cover the students and attained qualifications in education leading to a qualification or degree and are part of the StatFin database maintained by Statistics Finland. The classification of education is based on the International Standard Classification of Education 2011 (ISCED 2011).

(https://statfin.stat.fi/PxWeb/pxweb/en/StatFin/StatFin_opiskt/statfin_opiskt_pxt_11c3.px/)

Reference period: Calendar year.

Coverage: Classification of pharmacists consists of the 2011 ISCED code 672401 (Bachelor of Science – Pharmacy).

France

Source of data: **Ministère de l'enseignement supérieur et de la recherche**, Sous-direction des systèmes d'information et des études statistiques.

For further information: <https://publication.enseignementsup-recherche.gouv.fr/FR/>.

Reference period: yearly data.

Coverage: Data are given for metropolitan France and overseas departments and territories.

Break in time series: Postgraduate studies were reformed in 2017 and in 2019 depend to the speciality. This led to a break in the series in 2021, the first year in which students affected by the reform of 2017 graduated and another break in 2023 linked to the reform of 2019.

Furthermore, in 2025, some corrections were made to the old series. This led to a break in the series in 2019.

Germany

Source of data: **Federal Union of German Associations of Pharmacists**, Pharmacy and staff statistics 2023; special calculation by the Federal Union of German Associations of Pharmacists on the basis of information by the Authorised Approval Agencies of the Laender; <http://www.abda.de>.

Reference period: academic year 2023.

Coverage:

- Data contain the number of officially authorised pharmacists in given year.

Greece

Source of data: **Hellenic Statistical Authority (EL.STAT.), Survey on Tertiary Education (Universities and Technological Institutions)** <https://www.statistics.gr/en/statistics/-/publication/SED33/>

Reference period: 31st December.

Coverage: All the data refer to graduates from Greek universities. Data for 1986-1992 not available as figures cannot be retrieved from publications. Data collected for the academic year t/t+1 including students that graduated in year t+1 but the whole time series are classified in year t.

Break in time series: yes, please see above.

Hungary

Source of data:

- Up to 2012: **Hungarian Central Statistical Office** (KSH in Hungarian), Statistical Yearbook.

<http://www.ksh.hu>.

- From 2013 until 2014: **Office of Health Care Authorisation and Administrative Procedures** (EEKH in Hungarian) www.eekh.hu. Basic register.
- From 2015 to 2016, **Health Registration and Training Center** (ENKK in Hungarian) www.enkk.hu. Basic register.
- From 2017, **National Healthcare Service Center** (ÁEEK in Hungarian) www.enkk.hu. Basic register.
- From 2021, **National Directorate General for Hospitals** (OKFŐ in Hungarian) www.okfo.gov.hu, Basic register.

Reference period: 31st December.

Coverage: From 1990 onwards, the data are derived from the “Report on the number of physicians, dentists, pharmacists and specialised clinical psychologists with granted diploma” collection.

Note: Increase in year 2012 (40% increase from 279 graduates in year 2011) is due to increased number of educational places offered at Hungarian universities.

Iceland

Source of data:

- As of 1996: **Statistics Iceland**, Register of graduations.
- 1980-1995: **Directorate of Health**.

Reference period: As of 1996, the calendar year.

Coverage: Students who have obtained cand. pharm/Master degree in pharmacy in Iceland (UI) in a given year.

Ireland

Source of data: **Higher Education Authority** (<https://hea.ie/>).

Reference period: Calendar year.

Coverage: Universities, Institutes of Technology, and designated institutions.

- From 2021, figures are rounded to the nearest 5 due to the source’s disclosure control policy.

Break in time series:

- From 2021: Due to change in coding structure by the HEA, data refers to all graduate students from the ISCED field/discipline code 0916 (Pharmacy). Therefore, data pre-2021 is not directly comparable due to potential impacting changes in classification in the relevant field of study and/or level.

- From 2006, postgraduates in Pharmaceutical Technologies have been included.

Israel

Source of data: **Central Bureau of Statistics**. The data are based on personal records of degree recipients received from all Universities in Israel which include information on subjects of study and degree received.

Coverage: Pharmacist graduates include recipients of first degrees in Pharmacy.

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Italy

Source of data: **Ministry of Education**; “National Register of Graduates”

(<http://dati.ustat.miur.it/organization/ace58834-5a0b-40f6-9b0e-ed6c34ea8de0?tags=Universit%C3%A0&tags=Laureati&tags=Studenti>).

Reference period: Year.

Coverage: All graduated in Italy. Time series has been revised to include also graduated in Pharmaceutical Chemistry and Technology.

Deviation from the definition: None.

Estimation method: None.

Break in time series: None.

Japan

Source of data: **Ministry of Education, Culture, Sports, Science and Technology**, School Basic Survey.

Note: There is a decline in the number of graduates in 2010 and 2011 because the course term of the faculty of pharmacy has been extended to six years from 4 years. Students who entered under the six year system did not graduate at the end of their fourth year or their fifth year.

Korea

Source of data:

- From 2019: **Korean Education Development Institute**, Educational Statistics.

- Until 2018: **Ministry of Education**, Statistical Yearbook on Education.

Note: Due to the school system reform for pharmacy (4 year course → 6 year course), the number of pharmacists graduates dropped sharply in 2013. Students who entered the new school system graduated from 2015, explaining the strong increase in 2015.

Latvia

Source of data: Until 2022 **Central Statistical Bureau (CSB)**. From 2023 - National information system for education, owner and manager Ministry of Education and Science of Latvia. Source of data prior to 2008 not clear.

Reference period: Pharmacists graduates are reported for the academic year (e.g., 2022/2023).

Coverage: Information includes data from all universities and colleges listed in the Register of Education institutions providing accredited programmes.

Included are domestic and foreign pharmacists graduates who have obtained a recognised qualification in pharmacy.

Excluded are bachelor's degrees.

Break in time series: 2008: Change in data source. Source of data prior to 2008 not clear.

2023: Change in data source. Due to a changed data source, the previous time series (2008–2022) were reviewed by excluding the number of graduates having Clinical pharmacist and Industrial pharmacist qualification (7 ISCED-2011, field 0916 in ISCED-F 2013) as they already had obtained a recognized qualification in pharmacy as well by excluding the students having completed an academic bachelor's degree (4 years of study). Thus, now the data meet the criteria set.

Lithuania

Source of data: **Statistics Lithuania**, data of entire annual survey of education institutions. Report "Health Statistics of Lithuania" available from <https://www.hi.lt/sveikatos-statistikos-leidiniai/#--lietuvos-sveikatos-statistika>. Available on Official Statistics Portal of Statistics Lithuania <http://osp.stat.gov.lt/en>.

Reference period:

Coverage: The number of graduates fluctuates starting from 1992 due to political and economic changes in the country, changes in the status of medical institutes (to universities) and medical schools (to colleges) and changes in studying programmes. Therefore, every year different number of groups of students of medical specialties is starting the education (and after some years graduating).

Luxembourg

The University of Luxembourg does not offer full training for pharmacists.

Mexico

Source of data:

- 2000 to 2017: **Ministry of Education, General Directorate of Professions**.

- From 2018 onwards: **National Association of Universities and Institutions of Higher Education (ANUIES)**.

Coverage:

- Includes persons who have graduated and have obtained the professional license.

Note: In 2018, higher terminal efficiency was identified and the proportion of graduates increased. In 2020, the COVID pandemic delayed the graduation process, the number of graduates being regularized in subsequent years.

Netherlands

Source of data: **Statistics Netherlands**, Statistics of university education. Primary source: Dienst Uitvoering Onderwijs of the Ministry of Education, Culture and Science. Integral data of funded educational institutions. Participants' higher education:
https://duo.nl/open_onderwijsdata/databestanden/ho/ingeschreven/.

Break in time series: As from 2011, data have been rounded to multiples of ten.

New Zealand

Source of data: **Pharmacy Council: Workforce Demographics 2024**, available at
<https://pharmacycouncil.org.nz/2024-workforce-demographic-report/>

Coverage:

- Figures provided are for registrations in the Intern Pharmacist scope of practice, and as such are proxy figures for actual pharmacists graduates (e.g. a very small number of pharmacy graduates do not enter the intern programme).
- Figures for interns mainly include pharmacists who obtained their qualification from a NZ university (178 in the year ending 30 June 2024), and a small but increasing number (34 in the year ending 30 June 2024) previously registered in countries excluding Australia/Canada/Ireland/UK/USA completing the intern programme and gaining registration through the Pharmacy Council's non-recognised equivalent qualifications route. Additionally in the period, one graduate with a qualification from an Australian university was granted registration in the Intern Pharmacist scope of practice.
- In 2020, our proxy for graduates (currently registered intern pharmacists) experienced a spike in numbers. This was largely due to the deferral of the mid-year assessment centre, due to the COVID 19 pandemic. This resulted in reduced transfers from the Intern Pharmacist scope of practice to the Pharmacist scope of practice.

Norway

Source of data: **Statistics Norway**.

- Statistics Norway collects student data from the administrative systems of the various tertiary institutions. The administrative systems in tertiary institutions create data files in the format specified by Statistics Norway. Information on completed doctoral degrees is collected from NIFU (<http://www.nifustep.no/English/Pages/default.aspx>).
- Tertiary graduation statistics include all individuals who have completed a degree of 2 years or longer from an educational institution classified by the Standard Industrial Classification as a tertiary institution. Registration of completed educational activities occurs during the period 1 October in year x, 30 September in year x+1.
- See http://www.ssb.no/english/subjects/04/02/40/eksuvh_en/ and then 'About the statistics'.

Reference period:

Coverage: Complete coverage as statistics are based on enumeration of graduates in tertiary education. Sampling errors and non-response errors do not exist.

Deviation from the definition:

Estimation method:

Break in time series: Individually based data on completed education have been published annually since they were first collected in 1973/74 (academic year). Most variables are comparable, but some have changed. The revised Norwegian Standard Classification of Education (http://www.ssb.no/english/subjects/04/90/nos_c751_en/) recoded education courses to enable comparison of newer and older data (also including a recoding to ISCED-97). While education courses are reasonably comparable over time, other variables are not (e.g. coding of institution types). The decrease in Cand.pharm degrees in 2010 is mainly explained by a pronounced increase in 2008 and 2009, as many students graduated according to the previous degree structure, before six year tertiary

graduate degrees (Cand.pharm) became five year master's degrees and before the full implementation of the bachelor-master structure.

Poland

Source of data:

- Until 1990: publication of the Ministry of National Education, "Higher education, basic data".
- From 1990: **Statistics Poland**, reports S-10.

Break in time series: 1990 due to change of data source.

Portugal

Source of data:

- Since 2011: **Directorate General of Statistics of Education and Science, Ministry of Education and Science**.
- Between 2006 and 2010: **Ministry of Science, Technology and Higher Education**.
- Up to 2005: **Ministry of Education**.

Reference period: End of academic year.

Coverage:

- Data represent the total number of graduates.

Slovak Republic

Source of data:

- Until the year 2009: **National Health Information Center** (submitted data are from the Institute of Information and Prognosis of Education.).
- From the year 2010: directly the Institute of Information and Prognosis of Education, from the year 2014 under the new name the **Slovak Centre of Scientific and Technical Information** (www.cvtisr.sk).

Slovenia

Source of data: **Ministry of Education**.

Reference period: 31st December.

Coverage: graduates in Slovenian institutions (schools).

Spain

Source of data:

- Since 2011: **Ministry of Universities** from **the Statistics of University Students**:
http://estadisticas.mecd.gob.es/EducaDynPx/educabase/index.htm?type=pcaxis&path=/Universitaria/Alumnado/EEU_2022/GradoCiclo/Egresados/&file=pcaxis&l=s0
- Up to 2010: **National Statistics Institute** (INE). University Education Statistic.
https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176744&menu=resultados&idp=1254735573113

Reference period: Academic Year: the data for 2021 corresponds to the graduates of the 2020-21 academic year.

Sweden

Source of data:

- Until 1995: **NBHW**, Yearbook of Health and Medical Care.
- From 1996: **Swedish Higher Education Authority (UKÄ)**.

Reference period:

- Until 1995: 1st November.
- From 1996: 31st December.

Coverage:

- Full coverage.

Deviation from the definition:

- Data refer to prescriptionist and pharmacist graduates in Sweden in a given year.

Switzerland

Source of data: **Federal Statistical Office (FSO)**, Neuchâtel; Students and Degrees of Higher Education Institutions (SHIS-studex); yearly census.

Reference period: Annual census.

Coverage: Full coverage based on population data (full-survey).

Türkiye

Source of data:

- Up to 2013: **General Directorate for Health Services, Ministry of Health and ESPC Higher Education Statistics**.

- From 2013 onwards: **Council of Higher Education**, Higher Education Statistics (main source).

Reference period: End of the academic year.

Coverage: Data refer to pharmacy school graduates having graduated from a 5-year pharmacy education at university.

United Kingdom

Source of data: **Higher Education Statistics Agency (HESA)**. In 2020, data have been revised for the academic years 2014/15 through to 2016/17.

Reference period: From 2009 onwards, the reference period covers the financial year. The academic year x/y is reported in year y (e.g. the academic year 2017/18 is reported under 2018).

Coverage: UK.

- Pharmacy qualifiers have been defined as qualifiers from the following 4-digit JACS codes:

(B200) Pharmacology, toxicology & pharmacy

(B230) Pharmacy

Methodology: Data are restricted to only include those who qualified.

United States

Source of data: **American Association of Colleges of Pharmacy:** Academic Pharmacy's Vital Statistics, Profile of Pharmacy Students, Number of Degrees Conferred 1965-2019, Profile of Pharmacy Students/Table 5. <http://www.aacp.org>.

Coverage: National data. Include the territory of Puerto Rico.

Deviation from definition: Data match OECD definition.

- Includes B.S. Pharmacy, B. Pharml, and Pharm. D.I.

Estimation: Annual census.

Break in time series: No breaks in time series.

NON-OECD ECONOMIES

Bulgaria

Source of data: **National Statistical Institute**,
https://infostat.nsi.bg/infostat/pages/module.jsf?x_2=164
<https://nsi.bg/en/node/3388>

Until 2022:

Report on tertiary education for educational-qualification degrees 'Master', 'Bachelor' and 'Professional bachelor' as of 15 November - exhaustive annual survey.

From 2023:

An administrative register of the Ministry of Education and Science.

Reference period:

Until 2022:

From 16.11 of the previous year (t-1) to 15.11 of the index year (t). E.g., data for year 2010 contains number of graduates from 16.11.2009 to 15.11.2010.

From 2023:

Calendar year.

Coverage: Full coverage.

The survey covers all authorized higher schools (colleges, universities, and equivalent higher schools) under the regulation of Higher Education Act.

The specialties for medical doctors, dentists, pharmacists, midwives, and nursing are taught in public higher schools. Ministry of Education and Science is determining annually plan scheme (limits for new entrants) for each specialty in public higher schools, which varies at different years.

Break in time series: 2023 - Break in the time series due to a change of the data source.

Croatia

Source of data: Croatian Bureau of Statistics, Statistical Yearbook of the Republic of Croatia.

Ministry of Science and Education of the Republic of Croatia.

Reference period: From the year 2008, data are provided by the Ministry of Science, Education and Sports.

Data refers not on calendar, but on academic years. For example, registered data for the year 2008, refers to the 2007/2008 academic year (01.10.2007 – 30.09.2008).

Cyprus

Up to the academic year 2015-2016, no graduates on pharmacy existed in Cyprus. Only postgraduates existed but their numbers were not reported according to the guidelines.

From the academic year 2016-2017, the first graduates on pharmacy appear in Cyprus.

Source of data: Tertiary education statistics, Statistical Service of Cyprus.

Reference period: Data for year n referring to the academic year (n-1)-n.

Coverage: Complete coverage of all graduates by academic qualification achieved.

Deviation from the definition: No deviation.

Estimation method: Not applicable.

Break in time series: No break.

Romania

Source of data: **Ministry of Education** for the period 1990-1997 data on graduates and **National Institute of Statistics** since 1998, Activity of Education Units (Statistical data on tertiary education) – annual survey performed by NIS.

Reference period: academic year.

Coverage:

Deviation from the definition:

Estimation method:

Break in time series: 1996 (Since 1996 including private sector).

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<https://www.oecd.org/en/data/datasets/oecd-health-statistics.html>