

Who are the Technical Health Workers? – Methodological note

Isabella Koster, Carla Cabral Gomes Carneiro, Rafael de Lima Bilio, Joao Gabriel Ribeiro Pessanha Leal

This note details the methodological path taken to size the workforce related to Technical Health workers active in the sector. Its primary data source is the National Register of Health Establishments (CNES).

The data produced are published on [the website of the Observatory of Health Technicians](#) (OTS), located at the Laboratory of Work and Professional Education in Health of the Polytechnic School of Health Joaquim Venâncio of the Fiocruz (Lateps/ESPJV/Fiocruz).

Conceptual aspects

Two strategic concepts for the OTS were used as the main theoretical-methodological references for the categorization of technical workers in health.

Expanded conception of Health Technicians

Health Technicians are considered "workers who work in the health area, with varied education – elementary, high and higher education – and technical or technological higher professional training, as well as those who work without professional training in the area, with knowledge acquired in and through work." (Morosini, Koster and Braga, 2024:02).

Professionalization

The collective process is often long and has interrelated but non-linear stages. It involves, for example, the regulation of training, the creation of national curriculum guidelines, the recognition of the training profile by the Ministry of Education, the inclusion of occupation in the Brazilian Classification of Occupations (CBO), and the creation of specific laws and decrees and class entities for self-regulation, such as professional councils. Associations, federations, and trade unions have a vital role in this process.

The purpose of data collection and analysis

Subsidize the categorization of the expanded set of Technical Health workers who work in public and private health facilities, subdivided into four subgroups according to the different situations about their professionalization processes.

Geographic cropping

National.

Data source

National Register of Health Establishments (CNES) - Ministry of Health.

Competency

January 2023.

Unit of analysis

The Brazilian Classification of Occupations (CBO) occupation codes are registered at CNES in public and private establishments.

Sources and criteria for grouping occupations

For the classification of occupations into **groups** and **subgroups** of female workers, definitions and criteria established in the following sources were used in an interrelated manner:

- Brazilian Classification of Occupations

CBO groups and families;

Summary description and training and occupation experience in CBO to define the level of education, especially group 1, described in books 1 and 2 of CBO (Brazil, 2010a and 2010b).

- National Catalogue of Technical Courses - Health and Environment Axis (Brazil, 2020)

Description of completion professional profiles.

- National Catalogue of Higher Technological Courses (Brazil, 2016)

Description of completion professional profiles.

- Laws and standards regarding the regulation of training and work of each occupation

Legislation, regulations, ordinances, technical standards, curriculum guidelines, and other relevant documents were consulted on the web in general and on the websites of trade associations.

- Information collections of corporate movements

Information was consulted on websites of associations of professional categories.

Categorization steps

Step 1 – definition of the groups

It involved the characterization of all CBOs found in the database extracted from the CNES, based on the summary descriptions and training and experience of the occupations contained in the CBO (Brazil, 2010a and 2010b). Thus, two **groups** were defined:

Group A – Occupations that require a higher level for the exercise of their activities

- Higher level occupations in the health area, except technologists.
- Higher-level occupations in other areas working in the health field.
- Occupations that, according to the summary description and training and experience in CBO, are consistent with a long training path equivalent to higher education.

Group B – Occupations related to Health Technicians in the expanded conception

- Occupations whose descriptions in the CBO have varied schooling – elementary, high school and higher education – and technical or technological higher professional training. Occupations associated with those workers who work without professional training in health, with knowledge acquired in and through work, were also included.

Step 2 – Definition of subgroups

Group B – of the occupations related to the expanded conception of Health Technicians – was taken to categorize according to the four **subgroups** defined in Table 1.

Table 01 – Subgroups of Technical Health Workers

Subgroup	Description	Characterization
1	Assistants and workers in the fight for professionalization	They carry out technical activities, professionalized as assistants or in the process of regulating training and work.
2	Health Technicians	They are trained in technical courses in the health area, whose professionalization is regulated both in the field of work and in education, with basic secondary education and technical professional training.
3	Technologists	Graduates of higher education courses in Health Technology.
4	Health worker(s)	They are workers with different levels of education – primary, secondary and short-term higher education (technologist) – who carry out health activities, but who do not have specific training in the area.

Source: Own elaboration based on Morosini, Koster and Braga, 2024.

Step 3 – analysis of CBO codes for assignment to subgroups

It involved assigning each CBO code of the occupations related to the expanded conception of Health Technicians in the four **subgroups**. The sources and criteria for the grouping of occupations were used in an interrelated manner, in particular, the description of the completion profiles contained in the Environmental Health Axis of the National Catalogues of Technical Courses and Technological Higher Education Courses (Brazil, 2020 and 2016), laws and standards regarding the regulation of the training and work of each occupation and the information collections of the associative entities of the professional categories.

Validation process

Data belonging to Group A – higher education professionals – were validated through workshops with OTS members and anchored in the definition of Large Groups (GG) established in book 3, 'Structure, conversion table and title index' of CBO (Brasil, 2010c).

Regarding the data from **Group B** – Health Technicians – the validation occurred in an integrated manner with the categorization, always carried out by pairs of researchers. It aimed to deepen the analysis of the occupation codes that

generated doubts at the time of classification in the **subgroups**, considering the sources and criteria established for the grouping, aiming at confirming information about the training, regulation, and area of activity.

The sources that helped validate **Group B** were Book 3, which contains the identification of the level of the grouping of occupational families available at CBO (Brasil, 2010c), and the occupation domain table made available by the Ministry of Health (Brasil, 2023), which defines whether or not the existing occupations at CNES are in the health area and whether or not they are regulated.

Definition of the list of occupations of Health Technicians

The final list of **subgroups 1, 2, and 3** that integrate the expanded conception of Health Technicians was defined based on the aggregation of six-digit CBO codes in their respective occupational families (four-digit codes) or similar occupations, based on CBO itself (Brazil, 2010a and 2010b) and the National Catalogues of Technical and Higher Technological Courses (Brazil, 2020 and 2016). Chart 2 presents three examples of the aggregation exercise performed for the following professions: Community Health Agent Technician, Nursing Technician and Technician in Biomedical Equipment.

Table 02 – Examples of aggregation of occupational families

Nomenclature	CBO Description	CBO Code	CBO Family
Community Health Agent Technician	Community Health Agent	5151-05	5151
	Community Health Agent Technician	3222-55	3222
Technical course - Nursing	Technical course - Nursing	3222-05	3222
	Blood Transfusion Technician	3222-05	3222
	Intensive Care Nursing Technician	3222-10	3222
	Occupational Nursing Technician	3222-15	3222
	Occupational Health Nursing Technician	3222-15	3222
	Occupational Nursing Technician	3222-15	3222
	Mental Health Nursing Technician	3222-20	3222
	Psychiatric Nursing Technician	3222-20	3222
	Family Health Strategy Nursing Technician	3222-45	3222
Biomedical Equipment Technician	Technician in Maintenance of Medical-Hospital Equipment and Instruments	9153-05	9153
	Hospital Medical Equipment Technician	3135-D	3135
	Hospital Medical Equipment Technician	3135-00	3135

Source: Own elaboration according to CBO, Brazil (2020) and Brazil (2016).

Regarding **subgroup 4**, which covers a huge number of CBO codes and heterogeneous occupations without health training, the final list followed the ordering of the Large Groups (GG) and subgroups established in books 1 and 2 of CBO (Brazil, 2010a and 2010b).

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About the authors

Isabella Koster. Nurse. PhD and Master in Public Health (ENSP/Fiocruz). Research professor at the Laboratory of Work and Professional Education in Health (Lateps) and member of the team of the Observatory of Health Technicians (OTS) of the Polytechnic School of Health Joaquim Venâncio (EPSJV/Fiocruz).

Carla Cabral Gomes Carneiro. Dental Surgeon (UFPE). PhD and Master in Public Health (ENSP/Fiocruz). Research professor at the Laboratory of Work and Professional Education in Health (Lateps) and member of the team of the Observatory of Health Technicians (OTS) of the Polytechnic School of Health Joaquim Venâncio (EPSJV/Fiocruz).

Rafael de Lima Bilio. Pedagogue (UNIRIO). Doctor and Master in Education (Uff). Advisor to the Vice Directorate of Education (EPSJV/FIOCRUZ) and member of the team of the Observatory of Health Technicians (EPSJV/FIOCRUZ).

João Gabriel Ribeiro Pessanha Leal. Administrative Technician (JBM/Faetec). Public Administrator (Uenf). PhD student in Public Health (ENSP/Fiocruz). Master in Political Science (Unirio). Research fellow and data analyst at the Observatory of Health Technicians (EPSJV/Fiocruz).

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