

Health Economics

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Week - 11

Lecture 54- Data in Health: Sources and Indicators- II

Welcome friends once again to our NPTEL MOOC module on health economics. This is our second lecture of the eleventh week on explaining the data in healthcare. Hence, we are focusing on sources and indicators. This is in continuation to the previous lecture on observational data from micro settings. We have qualitative and quantitative survey data at the very disaggregated level. So, this is what we discussed previously. Right now, our focus is on administrative data. We will focus on the importance, sources, macro dimensions and indicators, their challenges and limitations.

Coming to the understanding of the administrative data, although health economics is mostly about dealing with microeconomic data sources that are obtained from observational studies. Administrative data acts as a link between both micro and macro data sources. This provides both micro-level information, for example, clinical records and macro-level information, such as birth or death rates at the state or country level. However, unlike the data obtained from observational studies, administrative data are not directly usable for research, as they are designed for administrative decisions and policy making. Usually, the administrative data has hardly any options left for deriving what I call research questions, to validate or to reject since these are government records, and this has to be considered as the parameter to compare your findings from the ground.

The importance of administrative data should be discussed. Administrative data provides useful information to health economists. For example, insurance claim data, birth and death registration data, etc. These data are less prone to both differential non-responses and item non-responses than observational studies or micro-data. So, when I mean differential non-responses, that means it has significant difference in non-responses, mostly due to death, institutionalization, emigration, refusal etc. Coming to item non-response, it refers to refusal or answering with 'don't know' in the questionnaire. These issues are mostly found in micro or observation studies, along with other measurement errors that needs to be taken care of.

It has broad coverage, comparability, policy orientations, linkages with observational studies, predictive analysis etc. So far as the broad coverage is concerned, it is often linked to another administrative dataset using unique identifiers that make them comparable. Comparability is important, as administrative data also provides information aggregates, it allows comparison between different states and countries possible. This is based on different indicators that share common methods of computation. Coming to policy orientation, it has a leveraging aspect, such as leveraging macro health data enables

evidence-based in a decision-making and targeted public health initiatives, improving overall population health.

This has a strong linkage with observational studies because many of the macro aggregates or administrative aggregates are taken from micro-foundations or micro surveys. Many studies now link the administrative data with the survey data, which provides micro-level information. This raises potential of both data sets. About predictive analysis: by identifying health trends and patterns, macro health data aids in predicting and preventing potential health threats.

For examples of Indian health-related administrative data sources, we usually refer to the sample registration system (SRS):



SRS was developed long ago and has consistently given different figures over the years. In India, there was a need for macro data on population for planning development programs. These records are needed. Hence, the Office of the Registrar General of India initiated SRS in the year 1964-65 on a pilot basis, and from 1969-70, it was operational on a full scale. This provides information on birth and death rates, infant and maternal mortality rates and ratios, etc. The link is given here. It's from the census website. It's part of the census as well. Rather the specific, it is called sample registration system.

National health accounts are another administrative data source that is highly referred to for international comparison purposes.

National Health Accounts



<https://nhsrcindia.org/national-health-accounts-records>

National health accounts, it's link is given here. You can download the complete report. Let me also open up a bit on this. I will open at this moment, and then I will guide you. So, here

it is for different years. The latest available one, we are just opening in front of you. It is considered to be a standard document to start with the research. It has 100 pages, and this is the latest record of the government of India on health issues, so far as the administrative data on healthcare is concerned. In order to have the strongest foundation for your research, I will refer to this document to start with. So, there are abbreviations given, and I think contents we have already shown to you, and these are highly useful.

I will go straight away to the contents again. How relevant this is for your research is important. So, here it is. Yes, the table. You can see key health financing indicators, expenditure estimates by national health accounts, classification, etc. You might have read from the newspaper that our out-of-pocket expenditure is very high. It is still high, even by all means taken by the government, whatever the steps they have taken; it is still more than 64%. So, that means the people incur huge healthcare costs and are expected to be impoverished due to healthcare expenditure. This information you can straight away get from this source. And you can also check with different state-level information as well. This gives information about capital formation at all primary, secondary, and tertiary care expenditures. You will also get information about other issues, such as broad health financing and macroeconomic indicators. Even the out-of-pocket expenditure in PPP terms are also given. So, I suggest you follow this. It will help you a lot.

Then, coming to the national health profile.



<https://cbhidghs.mohfw.gov.in/index7.php?lang=1&level=0&linkid=1086&lid=1107&color=1>

Yes, this is from the Ministry of Health and Family Welfare Records. This also gives you more information about the demographic indicators, socioeconomic indicators, health status, health finance, human resources, etc. Another important aspect is health infrastructure, so they are also available.

To continue, we also need to check the Central Bureau of Health Intelligence, the Health Sector Reform Option (HSRO) database, etc.

This website provides information about good health service management practices and innovations carried out by state governments, development partners and NGOs.

Further, we will also suggest you to follow some other institutional databases including the time-series data from EPW (Economic and Political Weekly) Research Foundation time-series data. It has different components of health information. Also, we suggest you refer to the SDG India index, part of the NITI Aayog. I think you can just click on this, I will show you some interesting aspects. You will find the ranking of the states. This was started from the previous episodes, and the baseline index was also given. If you see, 2018 was the beginning period, and you can have a comparison with different years till 2020.

Interestingly, it gives information about which the front runner states, which the performer states, and which the achiever, front runner, performer, and aspirant states are based on the caller combinations. It has a component on 'good health and well-being'. The ranking of the states can easily be understood from this single website. And, to foster your base for taking up research, I will surely suggest you refer to this. It gives you a choice of state if you want to focus on field observation from a state or a district, but at least the state indicators are clearly available here.

You can filter the state and cite this website. For example, as far as good health and well-being is concerned as per the latest figure states, you can just have a look. And from the figure itself, performer districts are in yellow, whereas the front runner states are in (this is on state-level information green colour. So, now your focus would have been on the

performer states such as Uttar Pradesh, Madhya Pradesh, Chhattisgarh, and in some part of northeast India.

One good thing is that we have no single state in the aspirant one category. Hence, you can similarly see other indicators, like your first, that is eradicating poverty, then, this is on hunger, this is well-being which you have said, this is on quality education, this is on gender equality, this is water. You will have good information for all indicators to start the research work. This is one.



The last one we need to refer here is the Digital India initiative, the Government of India portal, which it gives information about the human development index and its components by state, and it will also give you very strong backup for your research so far as administrative data is concerned and for comparison.

Few examples of international health-related administrative data sources are mentioned here:



For India, the WHO is considered to be the best in comparison with India across the globe. Hence, we have given the link here. Another one is called the OECD dataset for comparison. Even the EPWRF also gives a strong backup for time-series analysis for international comparison, but there is very limited information for comparison. Another interesting data source is called the Global Board of Diseases (GBD). It is by IHME. So, the link is given here. I will suggest you to cross-check if you are working on this. I mean, focus on this if you are working on diseases.

Similarly, the World Bank site projects and their aggregate datasets are important. The Human Development Index used to be referred. Last but not the least one is Statista. It is usually a paid one, but the macro aggregates are considered very good and give aggregate information for comparison. I am not going into the details, the links are here for your reference.

Few examples of other administrative data sources are also mentioned here like pharmaceutical companies and their databases like CMI ProwessIQ. Usually, these are paid. You can follow it. Pharmaceutical companies maintain databases for drug research, clinical trials and, pharmacovigilance etc. ProwessIQ is also referred.

Hospital Information System (HIS): Private hospitals use HISs to manage patient data, appointments, billing, and inventory. Digital health platforms, such as electronic media records, health information apps, and telemedicine, provide datasets as well. For academic and research institutions, they also provide macro or administrative data sources as well. Universities and research institutions conduct different studies and surveys. They also pull those surveys to generate macro health data.

Indicators derived from our administrative database are like public expenditure, mortality, morbidity, fertility rates by gender, life expectancy at birth, age dependency ratio, disease burden which includes health status, health risk etc, including maternal and paternal nutrition conditions. Infrastructure includes health resources and equipment, such as the performance of facilities and the number of beds in Indian hospitals. Service delivery indicators include health care use, efficiency, and quality and performance assessment. Some economic indicators are also relevant while understanding these administrative datasets, such as health-related expenditure, like as I mentioned, out-of-pocket expenditure, its ratio to overall expenditure of the economy etc.

There are also challenges involved in administrative data collection, such as accessibility issues, it is also a costly affair, and interoperability and data integration is also a concern integrating data. It has challenges related to infrastructure and resources, inadequate technological structure and limited resources that hinder efficient and comprehensive data collection processes. Last, to emphasize here, it also considers ethical and regulatory considerations. Compliance with ethical standards, data protection laws and research regulations complicate access to health data for research analysis.

So, I think this are all. Let us summarize what we said. Administrative data sources are a vital source of information for any health economist, as they contain both micro and macro data, which enhances the reliability and accuracy of analysis.

Harnessing diverse data sources for effective utilization is necessary for informed decisions and advancing healthcare innovation. However, their accessibility concerns many researchers, especially those with low financial support. Addressing this issue is crucial for fostering collaboration, innovation and policy development in the healthcare sector. This is because the data assists us in understanding health trends, assessing population health

needs, monitoring health policy effectiveness, etc. So, whatever we have done so far is explained, especially this week, in the first two lectures, on the observational data through surveys and the administrative data from pooling, collating different administrative units and their observations at a fairly aggregate level.

So, what we have thought of for the next lecture? It explains econometric modelling in health economics and some estimation methods which health economists largely use.

I think you can refer to our chapter and module on this for further clarification. So, that is all. I hope to see you in our next lecture. With this I must say. Thank you.