

MAKING A HEALTH SERVICES DATABASE

A Discussion Note

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HISTORICAL ASPECTS

Social research of health and health care is a discipline just out of its infancy. Consequently, databases related to it are underdeveloped and what little exists quite dispersed and unorganised.

The importance of health information in the colonial period was confined to the boundaries of the cantonments and civil lines. Health care development was given a very low priority. Some data pertaining to public health and communicable diseases however did emerge because these aspects threatened the colonial administration. Infact the development and growth of health care during the colonial era was clearly biased in favour of the demands of the army and civil administration.

The Bhore Committee (GOI, 1946) which carried out probably the first major health survey of the country realised this deficiency and tried to, to whatever extent possible, create a benchmark for a variety of health information. Thus, the Bhore Committee Report provides us with the first organised set of health care data for the country as a whole. Prior to that the records and reports of the public health department and the Census forms the only source of any health or related information.

The situation in the post-colonial period did not change drastically and this is again largely because the State did not commit itself to assure the people of the country basic health care as a right. The recommendations of the Bhore Committee were not taken as a whole but only selectively and it is this attitude of selective programming, which has kept health care underdeveloped in India.

The only effort at a general health survey in post-colonial India was undertaken in the late fifties and early sixties by S C Seal of the AIIH&PH (Seal, 1955..1963). This study of districts selected from all major states was modeled around the British General Health Survey and data from this if compiled systematically can form a baseline for the country. The only copies of the study volumes which I have seen are in the AIIH&PH library in Calcutta and afew volumes in the National Medical Library in New Delhi. This is valuble data and efforts at saving it must be done by the ICSSR because the volumes are already in tatters (I have compiled selected data on health care utilisation and expenditure but not for

all the states). Apart from this very few efforts at a national level generation and compilation of data has taken place.

The census every ten years gives some demographic data, which has some use for health sector analysis. Similarly the National Sample Survey Organisation and the Registrar Generals Office's Sample Registration Scheme data gives regular sets of data, again largely demographic. The NSS only in the 42nd Round in 1986-87 made a special effort for a detailed health care survey but very little of it has been published as yet and neither does the NSS lend out raw data for independent analysis (*Pravin Visaria has been able to do some selective analysis and some of it is available though not widely distributed*). An effort needs to be made in compiling all health and related data from different NSS Rounds. The ICSSR should persuade the NSS to do this or make their files available to research agencies, which have an interest in doing this compilation. Apart from this the only other national effort at generating health related data was through the National Family Health Survey (NFHS) in 1992-93. A discussion on this is in a later section. However, it is important to mention here that the NCAER's recent surveys (NCAER, 1992 and 1994) on health care utilisation have filled the gap to some extent and if such a survey is better designed and made more comprehensive like a general health survey and canvassed periodically then a great deal would be achieved.

Another important point to note in this section is the overemphasis on demographic and family planning data even within the health sector - this also explains why the NFHS is not a health survey and much less a family health survey! The State's obsession with fertility reduction and that too through the Ministry of Health has been responsible for the present scenario of poor health information. The data pertaining to the demographic situation and family planning is much better organised and more widely available whereas data on health care services, utilisation, epidemiology and morbidity patterns, health care availability, health care expenditures, manpower etc. is most inadequate and not easily available.

At the micro level the situation is similar. A large number of micro studies have been carried out but a large majority of them are again demographic or family planning related. This is largely because funding for such studies comes either from the family planning department or international agencies whose primary concern is fertility reduction. In a national review of such research done in 1993 by the research team of the Foundation of Research in Community Health it was found that an overwhelming majority of such funded research, a small proportion of it very good, lies unpublished and inaccessible to those who would like to use such research findings (FRCH, 1993).

DATA AVAILABILITY AND ORGANISATION

In India data collection, compilation and distribution is almost the sole monopoly of the Central Statistical Organisation (CSO). The NSSO and the RGO's offices provide the CSO with a fair amount of support in its efforts at compiling and publishing a wide array of data. The CSO is also dependent on other bodies to feed it with the necessary data, which is collected through their routine functioning.

The CSO publishes a wide range of statistical compendia that provide information on all aspects of the economy and society (CSO, 1989). The users of this information are also a highly differentiated group and are appreciative of the thankless task that the CSO undertakes. However, the CSO encounters many problems in compiling this data. It is evident from their numerous documents that they invariably do not receive complete information for the variables which they publish in their various compilations. This is largely because of the poor organisation and lack of cooperation on the part of bodies which generate the data and are supposed to supply regularly to the CSO - while a large part of the data from public bodies is more or less regularly available it is the private institutions whose compliance is very poor, and this is especially crucial for the health sector in India because of the overwhelming dominance of the private sector.

The NSSO is one agency, which collects primary data on practically every socio-economic issue. Its sample cuts across the entire country and hence its contribution is very vital for any database. Its methodology and credibility (though of recent being questioned) is generally held in high esteem internationally. Unfortunately it has failed to provide data on time - the delay most often being about seven to eight years.

Here our concern is with health and related data so we will not comment on other data. As discussed in the 25th Sept meeting of the ICSSR Data Archives Committee the present note would look at health services data widely and not just look at the NFHS, the original topic for the note, since the latter is concerned largely with demographic data which Pravin Visaria would cover in his note.

Compilation of health services data at the national level is the responsibility of the Central Bureau of Health Intelligence (CBHI). Similar bureaus at the state level lend support as clearing houses for respective states. The CBHI has been regularly bringing out its annual publication "Health Statistics of India", now called "Health Information of India". Though the range of subjects is diverse, it covers mostly the public sector and it is this, which is its major shortcoming because health care in India is largely in the private sector. And in recent years, inspite of computerisation the time lag in availability of this document has become 5 years. The latest data available today is for 1993. Once in 5 years they also bring

out a Directory of Hospitals which gives details about hospitals, its bed capacity etc.. for each hospital which is registered or files its return to the appropriate authority. In this too it is seen that while all public hospitals are covered, private hospitals are grossly underenumerated because regulation and control of private health care facilities is not taken seriously in most states (Mahapatra and Berman, 1992; Duggal and Nandraj, 1991 and 1996).

The CBHI's Health Information of India, apart from giving basic socio-economic and demographic information, which it draws from either the RGO or the CSO, publishes information, in a number of cases state-wise, on health care infrastructure like hospitals, dispensaries PHCs and beds (including private sector, which studies now show are underestimated in the CBHI compendium), communicable diseases like leprosy, tuberculosis, malaria, etc.. which is data mainly from public institutions hence grossly underestimated, health manpower - doctors of various systems, nurses, paramedics in government health programs, rural health care personnel, medical education admissions and outturns etc., public health expenditures in aggregate form, cause of death statistics, and health insurance (public sector only) statistics.

While the data categories appear to have a wide range of coverage basic morbidity data or an epidemiological profile on which all health care planning should be based is not available. Morbidity/epidemiological studies on a national scale have never been done, except for the one on tuberculosis way back in 1957. The quality of the data and its uptodateness is far from what is desired. This inadequacy of even the existing data is largely due to the laxity of data collecting and reporting agencies. The CBHI can only report from what it gets. The blame lies mainly with the state bureaus who do not put serious efforts at assuring that the data from the agencies responsible for supply of the respective data reaches them. For instance, the state Medical Councils is supposed to supply information on registration of allopathic doctors. While some state medical councils have been quite regular and uptodate many have not been doing their duty of sending updated records to the health information bureaus. Thus, for a number of states we see that data reported on the number of registered doctors is for upto even five years ago. In contrast the Nursing Council and the Dental Council are much more efficient and timely.

Now for nearly a decade the CBHI's Health Information is computerised but that has not changed the way it reports data. Neither has it made them uptodate nor has the presentation improved. Computerisation gives the opportunity for analytical statements but nothing has been forthcoming.

Further CBHI reports some sets of data which are meaningless - reporting targets achieved for treatment of communicable diseases makes no sense, what is needed is to report actual prevalence and/ incidence and then the percent of such cases who have received treatment. Similarly, the 1988 Health Information reported that there were only 9375 deaths due to tuberculosis in India in 1987 (Table 10.17, pg.178) - this is a ridiculous figure to present for those who don't know that it represents deaths only in public hospitals and that too partially reported. In the same volume in Table 11.3 on page 202 the RGO data on survey of causes of death is reported in which of all surveyed rural deaths 5.29% were due to tuberculosis of the lungs - this gives us an all India figure for 1986 of over 353,000 deaths due to pulmonary tuberculosis in rural areas alone!

But all said and done the CBHI is the only compiled source for major health services data and ICSSR must get a group of such data experts to collaborate with the CBHI to make its database rational, of better quality, presentable and more usable.

Other national level efforts have been from the Census (data on professions which gives us estimates of doctors of different systems, nurses, paramedics etc., in the Census Economic Tables, data on disabilities, data on establishments etc.), from the NSS (Expenditure on medical care in selected consumption expenditure rounds, morbidity, 42nd round on morbidity and utilisation, disability, nutrition, health care establishments, immunisation, indebtedness due to health care etc.), Comptroller and Auditor General which gives public health spending by major programs in its Combined Finance and Revenue Accounts - which unfortunately since 1987 has stopped publishing the document (also state Budget documents), NCAER's recent surveys on health care utilisation and expenditures and ofcourse the NFHS carried out by the International Institute of Population Sciences.

While the NCAER surveys focus on household morbidity, utilisation and expenditure patterns, the NFHS is mostly demographic and family planning related and provides health data pertaining only to immunisation, pregnancy, delivery (MCH related) and of important communicable diseases like malaria, tuberculosis and malaria, and physical disabilities, and ARI and diarrhoea among children. Both NCAER and NFHS data sets are computerised and the latter is available to any serious researcher from the IIPS on request on floppies. The NFHS has a volume on India and separately for each state. They also plan to bring out selected subject-wise reports and a series of NFHS Research Bulletins.

The sample for NFHS was drawn from 88,562 households from a universe that covers 99% of the country's population. The variables reported include basic household characteristics, nuptiality related, fertility related, family planning related, selective morbidity as mentioned above, mortality, especially infant, child and maternal, and MCH related. The survey was

conducted in 1992-93 and by end 1994 the reports started coming out. Quality wise it is a good survey but its name is misleading as the health component data from this survey is very small. As stated earlier it is primarily a family planning survey and must be viewed as such. The little health data it gives must be considered a bonus. There is some more health data also which has not been published as yet and since it is possible to get raw data on floppy further information can also be generated.

Presently the next round of NFHS is being planned and lets hope this time round the health part of the survey is taken up more seriously so that it can justify its name. We hope that an improved version of the NFHS will become a periodic activity like the NSS and thus develops into a genuine health database by involving health research agencies other than the population research units also.

MAKING A HEALTH DATABASE

When I was at FRCH we began the first efforts at evolving a health services database. Public health finance was the item selected to begin this process because it was the most organised form of data and easily accessible. From 1951 to 1985 all available data on public health finance for each state and union territory was compiled and computerised. Now at the Centre for Enquiry into Health and Allied Themes (CEHAT) we have continued this process. The health finance database has been updated upto 1996-97 and other health services data like health personnel, hospitals, beds, PHCs, mortality and fertility rates, immunisation, ante-natal care etc. has also been partially compiled. The CEHAT core research team is committed to building a complete health care database and as an initial step for making it public we have published a core part of it in the Economic and Political Weekly (April 15 and 22, 1995). Recently with some small support CEHAT has completed electronic compilation and programming of a limited set of data referred to above. This data is available on a single year basis from 1951 to 1997 for each state and union territory in a set of two floppies along with a user-friendly program. Presently this is being peer reviewed and will be available for public distribution by June 1998. CEHAT is working out a strategy to make this process an ongoing one, add newer categories of data, including those from micro studies and make these updates available at a regular interval at one level, and also place it on a national network or website or as a dial-in bulletin board service (BBS) at another level. It all depends on the kind of support we are able to garner.

To conclude, each set of health data has been discussed below in the context of its sources, availability, quality, access etc. and the work that CEHAT has already done is also highlighted:

HEALTH POLICY AND PLANNING

- Five year plan documents: health program recommendations, allocations, investment expenditures
- Various Committee reports' recommendations: Bhore Committee, Mudaliar Committee, Chopra Committee, Shrivastava Committee, Kartar Singh Committee, ICMR-ICSSR Committee etc..
- Annual Reports of the Ministry of Health and the Report and Recommendations of the Joint Council of Health and Family Welfare.

Some efforts at compilation have been done by the Ministry of Health, annotations can be compiled into a database. This is not a very difficult task to accomplish and we at CEHAT have already collated most of this information and it has to be only put on the computer as a database.

HEALTH EXPENDITURES

- Combined Finance and Revenue Accounts of the Union and State Governments and the State Budget Papers for public health expenditures by major health programs
- For private expenditures national level data from NSSO's consumption expenditure rounds as also CSO's estimates. Recent years NCAER survey data also available. Estimates also from various micro studies.
- Municipal and other local body expenditures available for selected years: Statistical Abstract of India, Health Statistics of India, NCAER and NIUA studies for some specific years and the Census village and town directories

While the public expenditure data is easily available from the CFRA and the State Budgets, and the CBHI publishes atleast aggregate data for the previous year in its annual Health Information compendium, that in the private sector is not available - the NSS and CSO estimates are underestimates as shown by various micro studies. NIPFP (1993), FRCH (Duggal et.al.1992) and CEHAT (Duggal et.al.,1995) too have compiled data on public health expenditures in a more systematic and analytic manner. The public health expenditure data in its disaggregated form has now been compiled into a computerised database by CEHAT for all states with single-year data from 1951 onwards - part of this has been published in the EPW of April 15 and 22, 1995 as a 5 year time-series data set. Now it is available on floppy for the years 1951-1997 for each year for each state and union territory. The data categories include overall health expenditure as incurred by the Ministries of Health, and separately expenditures of the Medical department, Public Health department and Family Planning department. In each of these departments further disaggregations have been made - hospital and dispensaries, medical education and

research, disease programs, rural family planning services, urban family planning services, maternal and child health services, public health training etc.. From 1986 onwards for selected programs expenditures further disaggregations like leprosy, tuberculosis, malaria programs etc. and on each of these expenditures on line items like salaries, medicines, transport, maintenance etc. are also available.

One problem faced presently is that the CFRA has not been published from 1987 onwards and hence a compiled source of Finance data for all states together is no longer available in the details which CFRA used to provide. Now for such data we have to go to each state's budget individually and thus the process of compiling such data becomes much more cumbersome. We hope the CFRA gets back to publishing its reports as earlier, and perhaps also make the data available on floppies.

HEALTH PERSONNEL

- State Councils for allopathic and ISM&H doctors, dentists and nurses which generate information on registered practitioners and the CBHI publishes it in Health Information of India (HII), also data on medical colleges, admissions and outturn
- Information on paramedics and all other health personnel in rural government health care in Rural Health Bulletin and CBHI's HII
- Census Economic Tables for all categories of health personnel for census years
- IAMR also publishes health personnel data in its statistical compendium -
Manpower Profile Yearbook

The quality of registration data, especially of the State (allopathic) Medical Councils is unsatisfactory and in many states there is a lag of over five years in reporting. Other problems with this data is that it is registration data and does not reflect on the number of active practitioners - often those who have died, migrated to other countries or have stopped practising continue to be on the list and on the other hand many who are practicing have not registered and hence are not included in the list. CBHI in its HII publishes most of the above data for previous year. The Census economic tables give more accurate data on doctors who are economically active and here we get breakdown by gender, pathy, rural/urban residence, age, educational background etc.. Analysis of Census data which comes once in ten years shows that for allopathic doctors for the same year as the Census the Medical Councils make an overcount by 15-20%. CEHAT has compiled a substantial part of this data for single year since 1951 and the Census data too and computerised it - part of it published in the EPW as mentioned above and upto 1993 it is now available on floppies. The data categories include number of doctors, dentists, nurses registered with the respective Councils, breakdowns of the Census data by gender,

pathy, residence. Also included are different categories of paramedics like ANMs, MPWs, pharmacists etc.. in government services.

HEALTH INFRASTRUCTURE

-HII compiles annual information on hospitals, dispensaries, hospital and dispensary beds, PHCs, Subcentres. The hospital and dispensary data includes private hospitals also. CBHI also rings out a Hospital Directory every few years. PHC and other rural health infrastructure also available in the Rural Health Bulletin of the Ministry of Health

Various micro studies have shown that the private sector data is very much underestimated. CEHAT has compiled all the available data in this category and upto 1993 it is available on floppies. Data categories include hospital and dispensaries and beds by rural/urban location and by private/public ownership. Apart from CBHI another sources of information are the Establishment survey data of the economic census which lists directory/non-directory establishments and own account enterprises in the health sector. This data is still to be incorporated in the CEHAT database.

UTILISATION AND MORBIDITY

-NSS and NCAER are the only major sources for such data

-Number of micro studies provide good information

This is one set of data, which is not available on a regular time series basis. The NSS morbidity and utilisation surveys are very few and the only detailed survey was in the 42nd round in 1987. In the eighties a number of micro studies were done which for the first time brought such data on agenda and as a consequence NCAER did two national level studies in 1992 and 1994. Both NSS and NCAER data is computerised but is not available on floppies for use and analysis. The NSS data is published in Sarvekshana and NCAER data in book form. Some important micro studies are those done by FRCH in Maharashtra and Madhya Pradesh (Duggal and Amin, 1989; George et.al. 1993;), KSSP in Kerala (Kanan et.al. 1991) etc..

Morbidity data is also available in a limited way for captive populations like users of public hospitals (published by CSO in Statistical Abstract of India - but since returns are not filed by all hospitals regularly this data has very little value, except perhaps for percent distribution of cause of morbidity), for users of railway, postal, mining, CGHS and ESIS health services. Such data can be used to give useful proxy estimates in the absence of better quality data. This data is available in respective health services' annual reports.

FAMILY PLANNING

-Family Welfare Yearbook, an annual publication of the Dept. of Family Welfare of the Ministry of Health publishes detailed data on contraceptive methods use, fertility related indices, family planning expenditures, MCH related data etc., also NFHS data

This data is quite comprehensive but a fair part of it relating to contraception acceptance is suspect. Ofcourse, the data refers only to the public system. The NFHS data is very useful here because it gives an opportunity to compare field level data with service statistics of the Family Planning department.

HEALTH INDICES

-RGO's SRS data on mortality and fertility, cause of death data and data on use of medical facility at birth and death, also NSSO and Census data and now NFHS data. Some of this data has been compiled by CEHAT also.

Data categories include crude birth and death rates, infant mortality rates, total fertility rates, age-specific fertility rates, % users of medical facilities at birth and death etc..

HEALTH INSURANCE

-ESIS, CGHS, Railways data on expenditure and utilisation from their Annual Reports, HII also publishes some of this data

-Also data on various other insurance programs under Acts covering various miners, maternity benefit, plantation workers, beedi workers etc...

-Data on Mediclaim could be compiled from the various insurance companies; this will provide information on both corporate health insurance from group policies as well as individual insurance cover

PHARMACEUTICAL PRODUCTION

-Data on overall and key drugs production and availability from Ministry of Chemicals, and association of pharmaceutical producers like IDMA and OPPI, also from ORG which compiles market intelligence on drugs

CONCLUDING REMARKS

The above review of data on health and health care services shows that the available data on this sector is fairly inadequate and the little that is available is poorly organised with very limited access for users. However the potential for making this limited data better organised and more easily accessible is not such a difficult task as is evident by some of the efforts put in by the research team of CEHAT. Some recent developments show that the Comptroller and Auditor General of India is seriously considering improving the quality of

presentation of data on the accounts of the nation which should make the public health expenditure data available in more useful categories. Many government departments are now making special efforts at improving the quality of their reports, statistical compendiums etc. and to do this they have now made a large number of their non-priced publications as priced ones. The Ministry of Health too has adopted pricing but the quality of its data or timely availability is still far from being what it should be. It must be remembered that HII is the only compiled source on a wide array of health information and the users of health data are at its mercy. Hence a lot of pressure on the Ministry of Health will have to be put to make it meet the demands for quality and timely availability of health and health care data. And the ministry in turn will have to exert similar pressure on its constituents from whom it gets the data it compiles.

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