EDITORIAL

# From Numbers to Governance: The Future of Vital Statistics in India

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**"A nation's progress is measured not by its wealth, but by the well-being of its people"**

Vital statistics are not merely numbers, they are rather the heart of a nation's demographic and developmental trajectory. Indicators such as birth rate, death rate, infant mortality rate, and total fertility rate help in planning of health budget, education and social protection schemes. The concept of vital statistics began in 17th-century England with the recording of births and deaths. A landmark development was in 1662 when John Graunt analysed how death data could reveal patterns of disease and population trends. William Farr advanced this concept further. Over time, countries established formal Civil Registration Systems to legally record births, deaths, and marriages. In India, systematic registration began during the British period and the modern system was strengthened under the Registration of Births and Deaths Act, 1969. (1)

In India, four major pillars support the vital statistics framework are the Census, Civil Registration System (CRS), Sample Registration System (SRS), and National Family Health Survey (NFHS). Together, they provide a composite picture of population structure, fertility behaviour, and mortality patterns. Emphasizing vital statistics contextualizes health indicators like mortality, fertility, and life expectancy within national data systems, allowing better interpretation and comparison.

The Census of India is a decennial, complete enumeration of the entire population conducted under the Census Act, 1948. It collects detailed demographic and socio-economic information such as population size, age–sex distribution, literacy, occupation, migration, and housing characteristics. Its main purpose is to provide a comprehensive database for planning, policy-making, and allocation of resources. The key strength of the Census is its universal coverage down to village and ward level, serving as the primary source of population denominators. Its main limitation is that it is conducted only once every ten years, so data may become outdated between rounds. (2, 3)

The Civil Registration System (CRS) is a continuous administrative system that legally records vital events such as births, deaths, and stillbirths across the entire country. It generates actual registered numbers and publishes annual reports. Its main purpose is legal registration of vital events, and its strength lies in providing real counts. However, its limitation is under-registration in some states. (4)

The Sample Registration System (SRS) is a sample-based, dual-record system that provides reliable annual estimates of demographic indicators such as birth rate, death rate, Total Fertility Rate (TFR), and Infant Mortality Rate (IMR). It covers representative sample units across India and releases annual estimates. Its strength is reliable annual rate estimation, but as it is sample-based, it does not provide a full count of events. (5)

The National Family Health Survey (NFHS) is a large-scale household survey conducted in rounds approximately every 5–6 years. It provides detailed data on demographic characteristics, fertility, health, nutrition, and socio-behavioral indicators across representative households in India. Its strength is comprehensive and detailed data, but it is not conducted annually. (6)

The integration of data from multiple sources ensures that if one system underperforms, the others compensate. The introduction of digital CRS platforms, mandatory Medical Certification of Cause of Death (MCCD), and automation of SRS processes represent commendable modernization efforts towards strengthening of the vital statistic records. NFHS-6 has proposed to explore new domains of menstrual hygiene, COVID-19 indicators, direct benefit transfer, digital literacy, post-abortion family planning counselling, health and wellness centre utilization and knowledge of anaemia, hepatitis B and C and syphilis. The move toward digital registration, centralized databases, and the proposed fully digital Census 2027 with online self-enumeration and GIS integration shows administrative progress and modernization.

However, the postponement of Census 2021 has created a vacuum in updated population statistics. Planning continues to rely on projections derived from Census 2011, which may influence resource allocation. Also, CRS completeness varies widely across states. Though birth registration has improved, there is under-registration of death and MCCD especially in rural areas. Also, there are existing discrepancies across data sources that can complicate interpretation. Indicators reported different

sources may differ due to recall bias and sampling design differences. Interstate variability exists which signals socio-economic and gender inequities that extend beyond demographic behaviour. Digitization can improve the accuracy and timeliness of data collection. However, limited digital literacy and differences in administrative capacity across regions may create new challenges. In addition, ongoing inconsistencies between data sources, delays in conducting the Census, and uneven performance among states highlight persistent systemic weaknesses. The question of the hour is whether the data ecosystem is sufficiently, timely, and responsive to existing public health needs.

## Conclusion

India does not suffer from absence of data systems; it suffers from fragmentation, uneven completeness, and under-utilization of existing architecture. The country stands at a demographic inflection point, fertility is declining, digital reforms are expanding, and administrative capacity is improving. **Yet, data gaps, interstate disparities, and delayed census operations threaten to dilute the precision required for effective governance.** The COVID-19 pandemic demonstrated the critical importance of integrated and real-time data systems. Rapid case reporting, mortality tracking, vaccination dashboards, and coordinated surveillance mechanisms enabled evidence-based decision-making at national and state levels. Where reporting was timely and integrated across platforms, response strategies were faster, more targeted, and more effective. The pandemic proved that robust vital statistics and surveillance systems are not merely administrative tools, but pillars of health security.

India already possesses a strong institutional framework under the National Health Mission, supported by CRS, SRS, and disease surveillance programs. The challenge now is not creation of new structures, but optimal utilization of existing logistics, manpower, and digital platforms. Greater decentralization of data analysis at district levels, accountable private sector reporting, interoperability between databases, and real-time audit mechanisms can significantly strengthen surveillance without proportionately increasing expenditure.

Going forward, emphasis must shift towards early detection of emerging and re-emerging diseases through **strengthened Integrated Disease Surveillance Programme linkages**, laboratory networking, and automated digital alerts. Timely diagnosis, standardized reporting from both public and private facilities, and data triangulation across systems are essential for preparedness.

What India needs now is sustained administrative energy, coordinated integration, **decentralized accountability**, and intelligent use of data. When surveillance systems are actively monitored, regularly validated, and effectively utilized, they transform from passive repositories into powerful instruments of public health action.

The way forward is not to multiply surveys, **but to integrate systems**; not to politicize fertility differentials, but to contextualize them; and not merely to digitize records, but to ensure completeness, accountability, and equity. A nation aspiring toward demographic dividend and sustainable development cannot afford fragmented data. Improving the coverage of Medical Certification of Cause of Death (MCCD) is equally important. Regular training, supervision, and audit mechanisms are necessary to ensure that mortality data are not only registered but meaningfully classified.

Vital statistics are more than administrative exercises—they are instruments of justice. When every birth and every death is counted accurately, policy moves closer to the people it intends to serve.

## Authors Contribution

Both authors have contributed equally.

## Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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