Strengthening of local vital events registration: lessons learnt from a voluntary sector initiative in a district in southern India

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Introduction

Reliable vital statistics based on births and deaths are necessary for population health assessment, epidemiological research, health planning and programme evaluation. Civil registration is considered the optimal source of statistics on vital events (i.e. births and deaths). The national authority for civil registration in India is the Office of the Registrar-General and Census Commissioner, under the Ministry of Home Affairs. Registration is, however, decentralized to India’s 29 states and 6 union territories. In theory, India’s registration system provides a good basis for overall coordination, direction, technical guidance and standards for birth and death statistics, but the reality is vastly different. For population health assessment, epidemiological research, and death rates of 18.9 and 7.3 per 1000 respectively.5

Local setting

In the government sector, registration is given low priority and there is an attitude of blaming the victim, ascribing low levels of vital event registration to “cultural reasons/ignorance”. In the community, low registration was due to lack of awareness about the importance of and procedures for registration.

Relevant changes

This initiative helped improve registration of births and deaths at the subdistrict level. Vital event registration was significantly associated with local equity stratifiers such as gender, socioeconomic status and geography.

Lessons learnt

The voluntary sector can interface effectively between the government and the community to strengthen vital registration. With political support from the government, outreach activities can dramatically improve vital event registration rates, especially in disadvantaged populations. The potential relevance of the data and the data collection process to stakeholders at the local level is a critical factor for success.

System components

The duration of the programme was 12 months (September 2007–August 2008). Fig. 1 summarizes the existing process of vital event registration, the various interventions3,4 and the consequent learning points for improving civil registration in India.3 These interventions targeted both the “supply-side” (civil registration and vital statistics by the government) and the “demand-side” (service utilization by the community) with the objective of achieving target rates of 75% for birth registration and 50% for death registration.

Supply-side interventions

The nongovernmental organization (St John’s Research Institute, Bangalore, India) fostered partnerships with local government departments including revenue, social welfare, health and education.6

Awareness workshops on registration procedures were held at each mandal, chaired by the mandal revenue officer/assistant statistical officer.

Data management mechanisms were set up between the government and project staff to share information on vital events.

Programme setting

The programme was held in five mandals (subdistricts) – Palamaner, Gangavaram, Baireddypalle, V Kota and Ramakuppam – with a total population of 281 500 (in the year 2007) in Chittoor district of Andhra Pradesh state. The first three proximal mandals were located at a mean distance of 15 km and the last two distal mandals were at a mean distance of 50 km away from Palamaner, the main town. Estimated annual number of births and deaths were 5320 and 2055 respectively, based on crude birth and death rates of 18.9 and 7.3 per 1000 respectively.3

Problem

Birth and death registration rates are low in most parts of India. Poor registration rates are due to constraints in both the government system (supply-side) and the general population (demand-side).

Approach

We strengthened vital event registration at the local level within the existing legal framework by: (i) involving a non-profit organization as an interface between the government and the community; (ii) conducting supply-side interventions such as sensitization workshops for government officials, training for hospital staff and building data-sharing partnerships between stakeholders; (iii) monitoring for vital events by active surveillance through lay-informants; and (iv) conducting demand-side interventions such as publicity campaigns, education of families and assistance with registration.

Abstracts in العربية, 中文, Français, Русский and Español at the end of each article.

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Discussion was held with public and private hospitals for the transmission of data on births and deaths to the government. Procedures were also established to evaluate project outcomes using evidence of birth and death registration.

**Demand-side interventions**

Publicity campaigns were conducted to improve awareness in the community using various media such as pamphlets, audio announcements via village drummers and recorded messages, and brief jingles on local cable television.

The project staff visited households to inform them of the juridical and statistical benefits of vital event registration. Juridical benefits include establishing nationality, legal rights, ration card/identity card/passport, access to education, welfare schemes and utility services. Registration also has the statistical purpose of enabling measurement and monitoring of the health status of the population.

This education was subsequently followed by encouragement for registration. Overall, 78% (3322/4259) of families were encouraged successfully to proceed with birth registration. It was significantly higher in rural (80%) than urban areas (70%) \( P < 0.005 \) and in proximal (82%) than distal mandals (74%) \( P < 0.005 \); it did not vary by sex of baby \( P = 0.68 \) or place of delivery (institutional vs home).
or location of mandals days after births and within 7 days after the event. Households were advised to report to project staff within 2–3 days of the event, due to conflicting work schedules in urban areas and women relocating to their mothers’ houses to give birth.

The identification of vital events was done by about 400 local lay-informants who were paid a small honorarium for reporting to project staff within 2–3 days of the event. Households were advised on how and where to register within 14 days after births and within 7 days after deaths (Fig. 1).

**Lessons learnt**

**Processes**

Awareness work with managerial staff from local government departments was important because of their involvement in various registration activities. However, there was a lack of clarity on their roles and responsibilities. While the state authorizes the village revenue officer to issue certificates, these were often issued only at the mandal level, necessitating unnecessary travel to collect certificates. These workshops helped to partially decentralize registration to the village level.

In advocacy meetings, there was low participation of private medical practitioners and very few medical officers or health officials among the health workers from the government sector. Separate advocacy meetings with private clinics resulted in increased birth registration, less so with death registration.

Active surveillance by lay-informants yielded a large number of events that would not have been picked up by the short-staffed government system. Death registration levels were especially low at extremes of age (i.e., among children and the elderly). Although certificates were supposed to be free, some households reported incurring expenses either because of multiple visits or because of unofficial payments to collect the certificate.

A lack of computerization/training was an impediment to efficient dataflow and feedback. The involvement of personnel from different departments led to “blame-shifting.” Furthermore, due to the lack of a unique identification system in India, there was also the possibility of duplicate registration of events, especially among women giving birth at their mothers’ homes.

**Outputs**

During the programme, 80% of births and 61% of deaths were registered, as compared with pre-intervention rates of 50% of births and 25% of deaths. While birth registration rose from 50% to over 80% in about 4 months after the start of the programme, death registration reached a peak 3 months later. Registration rates for both births and deaths were higher in households that received the intervention; these differences were statistically significant for all determinants ($P < 0.01$).

Registration of births was significantly associated with residence (urban > rural; $P < 0.01$), place of delivery (institutional > home; $P < 0.001$) and location of mandal (proximal > distal; $P < 0.01$). Similarly, registration of deaths was associated with sex (males > females; $P < 0.01$), age (middle age > extremes of age; $P < 0.01$), residence (urban > rural; $P < 0.01$) and location of mandal (proximal > distal; $P < 0.01$); it did not vary by sex of baby ($P > 0.05$). Further, encouragement and guidance for registration tended to narrow the male–female gap, urban–rural gap and the proximal–distal mandal gap. Multivariate logistic regression analysis yielded similar results.

**Discussion**

Vital statistics are inextricably linked to health and development outcomes; and the social advantage linked to vital event registration could vary by key equity stratifiers – socioeconomic status, gender and geography. Before the intervention, gender was linked to both birth and death registration. Place of delivery is a proxy for socioeconomic status, and the social advantage linked to vital event registration could vary by key equity stratifiers.

Geographic considerations such as urban/rural residence and location of the subdistrict could affect event registration either as a logistic issue (by way of distance, topography or transport difficulties) or as a political issue (by way of resource allocation or discrimination).

In addition to the supply-side interventions, the unique outreach strategy of combining education/guidance of the public with active surveillance increased birth registration substantially and death registration modestly in this rural area. Though assessing cost-effectiveness of this initiative was not a specific objective, crude estimates of costs incurred totalled about 2 Indian rupees (US$ 0.05) per person which is considered cost-effective for a vital events surveillance system by the Disease Control Priorities Project for developing countries. Note these costs were in addition to the existing vital registration system.

Key lessons learnt should enable targeted interventions that are sustainable and cost-effective. For example, community campaigns, strengthening collaboration between government departments, capacity building of health staff, holding intensive mobile registration drives to target priority areas such as rural home deliveries and deaths of children and elderly people.

Corruption in the issue of certificates was a recurrent problem. Though it might have reduced to some extent by a more efficient registration system during the intervention period, it was still reported by citizens. A new mother-and-child tracking system was expected to reduce problems due to migration, duplication and others.

Key limitations of the programme included difficulty determining the contribution each intervention made towards improving registration, as well as uncertainty about sustaining registration at high levels in the long-term. Further, it is possible that those who did not receive the household intervention were a biased group whose unmeasured characteristics were likely to be confounded with their choices to register. Lastly, the focus and intensity of the intervention itself could have caused favourable outcomes (Hawthorne effect or observation bias).

The Commission on the Social Determinants of Health has identified that further strengthening is needed on the evidence base on the social determinants of health and what works to improve them. This initiative aims, in part, to fulfill a gap in understanding vital registration through identification of problems and provision of solutions with consequent improvements in birth/death registration as evidence. Identifying variations in event registration by local equity stratifiers could help improve the targeting of services. Civil society plays an important role in supporting public participation.
Lessons from the field

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providing feedback on which to base improvements to the system, and intervention efforts for increasing registration. It could also help increase accountability within the civil registration system.

In summary, coordinated efforts at the local level by voluntary organizations, government and the general public can improve birth and death registration in developing countries. Lessons learnt at the local level can then be used to identify scalable solutions at a regional or national level (Box 1).

Funding: This study received partial financial support from the Sir Ratan Tata Trust, Mumbai, India.

Competing interests: None declared.

Box 1. Summary of main lessons learnt

- Voluntary organizations can facilitate government–society interaction and help increase local vital event registration.
- Multi-level interventions – at the community, government and household-level – were effective.
- Equity stratifiers such as gender, socioeconomic status and geography affect vital event registration rates in communities; there may be a need to target services to those who need it the most.

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Consolidación del Registro civil local: experiencias aprendidas en una iniciativa voluntaria en un distrito del Sur de la India

Situción. La mayor parte de la India presenta unos índices bajos de registros de nacimientos y defunciones. Estos bajos índices de registro se deben a las limitaciones existentes, tanto en el sistema gubernamental (suministro) como en la población en general (demanda).

Enfoque. Hemos consolidado las inscripciones del registro civil a nivel local dentro del marco legal existente, aplicando los siguientes métodos:
(a) implicación de una organización sin ánimo de lucro para actuar como intermediaria entre el Gobierno y la comunidad; (b) intervenciones dirigidas al sistema público, como talleres de sensibilización destinados a los funcionarios públicos, formación del personal hospitalario y creación de asociaciones entre los interesados para compartir información al respecto; (c) supervisión de las inscripciones en el registro civil mediante un control activo a través de informadores no especializados; y (d) intervenciones dirigidas a la población en general como campañas de publicidad, formación de las familias y ayuda en el registro.

Marco regional. El sector gubernamental asigna un nivel bajo de prioridad al registro y suele culpar a la víctima, atribuyendo el bajo porcentaje de inscripciones a «motivos culturales e ignorancia». En la comunidad, el bajo porcentaje se debió a una falta de concienciación sobre la importancia del registro y sus procedimientos.

Cambios importantes. Esta iniciativa ayudó a mejorar la inscripción de nacimientos y defunciones en los subdistritos. La inscripción en el registro
civil se asoció de manera significativa a estratificadores locales de equidad como el género, el nivel socioeconómico y la geografía.

**Lecciones aprendidas** El voluntariado puede intermediar de forma efectiva entre el Gobierno y la comunidad para consolidar el registro civil. Con el apoyo político del Gobierno, las actividades de divulgación pueden mejorar enormemente los índices de inscripciones en el registro civil, especialmente entre las poblaciones menos favorecidas. La importancia potencial de los datos y del proceso de recopilación de datos para los interesados a nivel local es un factor fundamental de éxito.

**References**