



## Completeness of death registration in the Civil Registration System, India (2005 to 2015)

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**Background & objectives:** In many developing countries including India, the civil registration data are incomplete, inadequate and not timely, therefore, compromising the usefulness of these data. The completeness of registration of death (CoRD) in the Indian Civil Registration System (CRS) was assessed from 2005 to 2015 at State level to understand its current status and trends over time and also to identify gaps in data to improve CRS data quality.

**Methods:** CoRD for each year for each State was calculated from the CRS reports for 2005-2015. Data were analyzed nationally by geographic region and individual State. The availability of CoRD by age group and sex was also reported.

**Results:** About 40 per cent increase in CoRD was documented for India between 2005 and 2015, with CoRD of 76.6 per cent in 2015. CoRD was >90 per cent in the western and southern regions and the eastern, central and northeastern regions had CoRD lower than the Indian average in 2015. Among the 29 States, 16 (55.2%) State had CoRD >80 per cent and five (17.2%) <50 per cent and 10 States recorded 100 per cent CoRD. Despite the highest per cent increase during 2005-2015 (108.5%), CoRD in Uttar Pradesh was 44.2 per cent in 2015. Varying levels of progress in 2015 were seen between the State with similar CoRD estimates in 2015. Nagaland (-63.3%), Manipur (-33.1%) and Tripura (-30.3%) were the only States that documented a decrease in CoRD during 2005-2015. The age non-availability for India ranged from 37.0 per cent in 2009 to 37.9 per cent in 2015, an average of 41.5 per cent over the seven years and was an average of 35.6 and 36.6 per cent for males and females, respectively. Age was available for all registered deaths only in five (17.2%) of the 29 States in 2009 and four (13.8%) in 2015. Sex non-availability for the recorded deaths was much lower as compared with that for age.

**Interpretation & conclusions:** Despite the significant progress made in CoRD in India, critical differences between the States within the CRS remain, with poor availability of reporting by age and sex. Concentrated efforts to assess the strengths and weaknesses at the State level of the CRS processes, quality of data and plausibility of information generated are needed in India.

**Key words** Civil Registration System - CRVS - death - India - vital registration

Statistics on the number of births, deaths and medical cause of death are imperative for decision-making in health<sup>1</sup>, and the Civil Registration System (CRS) is responsible for generating these vital statistics. In many developing countries, the CRS data are incomplete, inadequate and not timely, therefore, compromising the usefulness of these data<sup>2-8</sup>. The inadequacy of the CRS to count births, deaths and causes of death, thereby, leaving countries powerless to track and protect the well-being of their populations, has been termed as ‘the scandal of invisibility’, wherein millions are born and die without leaving any record of their existence<sup>9</sup>.

Registration of Births and Deaths Act (RBD Act) was enacted in India in 1969 to promote compulsory RBDs<sup>10</sup>. As the level of registration in the CRS remained poor, India implemented registration of a sample of births and deaths as part of the Sample Registration System (SRS) in 1970<sup>11</sup>, which is the main source of vital statistics including cause of death for India. In the global assessment of the CRS, India was rated with the lowest vital statistics performance index (<0.25), despite a notable increase in death registrations in India in recent years<sup>4,8</sup>. We investigated death registration in the CRS in India from 2005 to 2015 with the aim of understanding the trends and current status of completeness of death registration. The aim was to report these nationally by geographic region and individual State with the aim of highlighting the variability in death registration that could facilitate prioritization of immediate actions to improve coverage, and to identify the gaps in data to improve CRS data quality. It is important to note that the CRS in India does not routinely document information on the cause of death which is supplemented by SRS.

### Material & Methods

The ‘Vital Statistics of India based on Civil Registration System’ was utilized which provided information on the completeness of death registration for each State for a given year<sup>12,13</sup>. The administrative reporting system of a birth/death event in India starts at the local level; the consolidated registrations from the local level are transmitted to the chief registrar of a State from where an annual consolidation of these data is sent to the Office of the Registrar General and Census Commissioner of India (RGI), Government of India<sup>12,13</sup>. Based on this State-level annual consolidation, the RGI office produces the CRS reports annually for each State<sup>12,13</sup>. These reports were downloaded which were publicly available each year from 2009 to 2015, the most recent year available at

the time of this analysis was 2015<sup>10</sup>. The death registration details were compiled from these reports for analysis. We considered the years 2005 to 2015 for this analysis as these captured the CRS post-operationalization of revamped CRS in all the Indian States<sup>12,13</sup>. This study was undertaken at the Public Health Foundation of India, Gurugram from February to August 2017. We report on the longitudinal trends in completeness of registration of deaths (CoRD) for years 2005 to 2015 from CRS, and the change in coverage from 2005 to 2015 for India overall, by geographic regions, and for each State. CoRD in the CRS report is defined as the percentage of registered deaths to the deaths estimated through SRS for a given year as shown in the formula below<sup>13</sup>:

$$\text{CoRD in CRS} = \frac{\text{Number of registered deaths in CRS in a given year}}{\text{Number of estimated deaths in SRS in a given year}} \times 100$$

India was categorized into six geographic regions based on the SRS classification<sup>14</sup>. The geographic region coverage was calculated as the average coverage of all States in that region. To further understand the progress made in CoRD over time in the CRS data at the State level, the States were grouped based on the CoRD in 2005 and change was examined between 2005 and 2015. The availability of age and sex for the registered deaths for India, by geographic regions and State, was also reported. This was done for the years 2009 to 2015 as these data were available only for these years in the CRS reports in public domain.

*Statistical analysis:* All analyses were carried out using STATA 13 (StataCorp LLC, USA) and MS Excel 2013. The *z*-test was applied where relevant to assess significance in univariate analysis. Stillbirths were not included in this analysis. The union territories were excluded, Delhi was considered as a State and the States of Andhra Pradesh and Telangana were combined for this analysis.

### Results

The CoRD in India increased in the CRS from 55.0 per cent in 2005 to 76.6 per cent in 2015, a significant increase of 39.3 per cent over 11 years ( $P < 0.001$ , Fig. 1). Considering the geographic regions, in 2015, the CoRD was >90 per cent in the western and southern regions and the eastern, central and northeastern regions had CoRD lesser than the national average (Table). The highest per cent change in the geographic regions was documented in the eastern region (50.4%) and almost no change in the northeastern region (-2.9%) as shown in the Table.

There was a heterogeneous increase in CoRD across most States during this period (Table). The highest change in CoRD over these years was documented in Uttar Pradesh (108.5%) even though the average per cent change in the central region was only 26.7 per cent (Table). Among the 29 States, 16 (55.2%) had CoRD >80

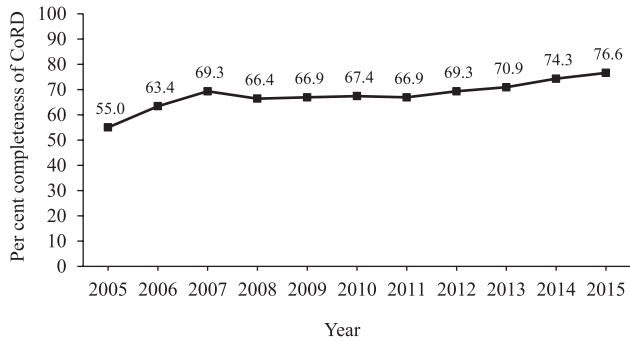


Fig. 1. Completeness of Registration of Death (CoRD) coverage for India in the Civil Registration System (CRS) from 2005 to 2015.

per cent in 2015, with nine States recording 100 per cent of CoRD (Table). Despite the highest per cent increase, the CoRD in Uttar Pradesh was 44.2 per cent. Five States (17.2%) had CoRD <50 per cent in 2015 with three of these in the northeastern region. Nagaland (-63.3%), Manipur (-33.1%) and Tripura (-30.3%) were the only States that documented decrease in CoRD between 2005 and 2015 (Table). Looking closely at the nine States with 100 per cent CoRD in 2015, the estimated number of deaths in SRS (denominator) was less than the registered number of deaths in Civil Registration and Vital Statistics (CRVS)<sup>13</sup>, and the difference in deaths ranged from 162 in Goa to 104,926 deaths in Tamil Nadu.

On grouping the States by similar level of CoRD in 2005, the comparative progress in CoRD from 2005 to 2015 for each State is shown in Fig. 2. Among the three States which had CoRD between 10 and 30 per cent in 2005, Arunachal Pradesh and Uttar Pradesh showed a

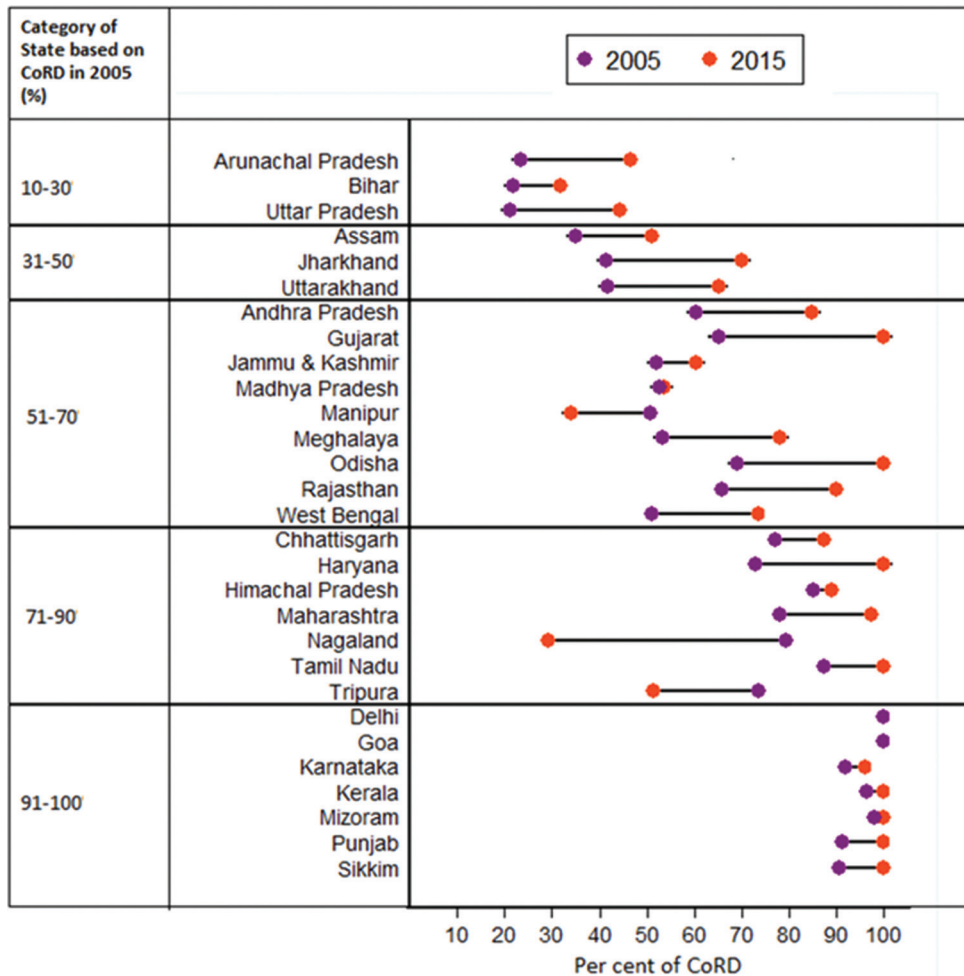


Fig. 2. Comparative progress made in Completeness of Registration of Death (CoRD) in the year 2015 in the Indian States by grouping the States by CoRD in 2005 based on the Civil Registration System data.

**Table.** Completeness of Registration of Deaths (CoRD) in 2005, 2010 and 2015 and per cent change from 2005 to 2015 for India, the geographic regions and each Indian State in the Civil Registration System

Geographic region/State Year	CoRD (%)			Per cent change in CoRD between 2005 and 2015
	2005	2010	2015	
India	55.0	66.9	76.6	39.3
Central	54.3	62.0	68.8	26.7
Chhattisgarh	77.3	60.1	87.3	12.9
Madhya Pradesh	52.6	54.8	53.8	2.3
Rajasthan	65.9	82.4	89.9	36.4
Uttar Pradesh	21.2	50.6	44.2	108.5
East	45.8	51.5	68.9	50.4
Bihar	21.7	16.5	31.9	47.0
Jharkhand	41.3	49.4	70.1	69.7
Odisha	69.1	80	100	44.7
West Bengal	51.1	59.9	73.5	43.8
North East	63.1	62.9	61.3	-2.9
Arunachal Pradesh	23.5	35.7	46.6	98.3
Assam	35.1	41.8	51.1	45.6
Manipur	50.8	40.7	34	-33.1
Meghalaya	53.3	67.5	78.2	46.7
Mizoram	97.9	100	100	2.1
Nagaland	79.5	85.1	29.2	-63.3
Sikkim	90.8	89.1	100	10.1
Tripura	73.7	43.5	51.4	-30.3
North	73.9	79.3	85.8	16.1
Delhi	100	100	100	-
Haryana	72.9	88.6	100	37.2
Himachal Pradesh	85.2	89.7	89	4.5
Jammu and Kashmir	52	53.4	60.4	16.2
Punjab	91.4	97	100	9.4
Uttarakhand	41.6	46.9	65.4	57.2
South	84.1	86.9	95.3	13.3
Andhra Pradesh	60.5	64.8	84.9	40.3
Karnataka	91.9	91.1	96.2	4.7
Kerala	96.4	99.2	100	3.7
Tamil Nadu	87.4	92.6	100	14.4
West	81.1	91.3	99.2	22.3
Goa	100	100	100	-
Gujarat	65.1	82.6	100	53.6
Maharashtra	78.1	91.4	97.5	24.8

significant increase in CoRD, with 46.6 and 44.2 per cent CoRD in 2015, respectively, whereas Bihar remained almost static. An increase in CoRD was seen in all the three States, with CoRD of 31-50 per cent in 2005. Of the nine States with CoRD of 51-70 per cent in 2005, the level of completeness was reduced in one State and remained in the same category for another, two States each achieved 100 and >80 per cent completeness and three States had between 70 and 80 per cent in 2015. For the seven States with a CoRD of 71-90 per cent in 2005, two (28.6%) and three (42.9%) had achieved 100 and >85 per cent completeness, respectively, and two (28.6%) recorded decline. Lastly, all the seven State with 91-100 per cent CoRD in 2005 reported 100 per cent completeness in 2015 except Karnataka (96.2%).

The non-availability of age and sex for the deaths registered in the CRS from 2009 to 2015 is shown in Fig. 3. The proportion of age non-availability was higher than that of sex non-availability across the years, with the latter increasing in 2015. The age non-availability ranged from 37.0 per cent in 2009 to 37.9 per cent in 2015, an average of 41.5 per cent over the seven years and was an average of 35.6 and 36.6 per cent for males and females across the seven years, respectively. The age non-availability in the CRS varied for the Indian States. Among the 29 State in

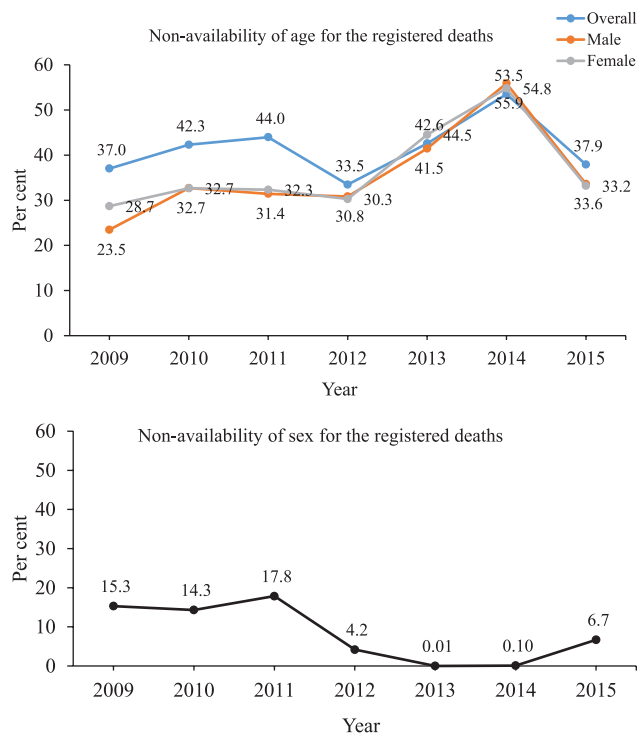
India, age was available for all registered deaths only for five (17.2%) States in 2009 and four (13.8%) States in 2015. For nine (31.0%) States, age was not reported at all for 2015. Sex non-availability was much lower in the CRS as compared with that for age and showed significant drop in 2012, but an increase again was seen in 2015.

## Discussion

While confirming the significant progress made in the completeness of death registration in the Indian CRS, our analysis highlighted critical differences across the States within the CRS and poor quality of age and sex reporting for deaths in India. These data highlighted the trends in progress made in death registration and its heterogeneity at State level in India over a decade.

Overall, a 40 per cent increase in CoRD was documented for the CRS between 2005 and 2015. The CRS documented 76.6 per cent completeness for India in 2015, and this completeness ranged from <50 per cent in some States to nearly 100 per cent in some, and a decrease was documented in a few States in 2015 as compared to 2005. In general, wide variations in the completeness of CoRD by the administrative units were documented. A reasonable extent of these variations in data can be explained by the decentralized process of vital events' registration with multiple levels of administration, with each State having an independent structure for its administration<sup>13,15</sup>. The process of vital events reported in the annual CRS report is an inter-sectoral network starting from the smallest administrative unit in a State and ending at the RGI office at the national level<sup>16</sup>. Issues with collection and flow of data in the context of quality and timeliness of reporting have been documented previously, and recommendations have been made to streamline and strengthen the uniqueness of registration units and for improved coordination between the reporting hierarchy at the State and national levels<sup>17-20</sup>.

The extent of variation in the CoRD across the States, and importantly the varied progress made by the individual States over the decade, reinforces that the steps to improve CoRD will have to be addressed at the State level, as generic recommendations to improve CoRD may not be applicable across all States. Lessons could be learnt from the States which have made progress in CoRD for the States which are lagging behind. Only the states of Manipur,



**Fig. 3.** Non-availability of age and sex for the deaths registered in the Civil Registration System in India from 2009 to 2015.



Tripura and Nagaland in the northeastern region documented a decrease in CoRD between 2005 and 2015. It has been previously suggested that internal and international migration patterns, and the political issues that affect the northeastern region, have implications on the demographic estimates of the region<sup>21</sup>. Furthermore, poor implementation of the online registration of deaths including backlog in death registration could have contributed to the decline in the estimates<sup>22</sup>.

Another aspect for consideration in the variability of CoRD estimates is the denominator which is provided by the SRS. This variability in the SRS estimates also resulted in 100 per cent CoRD estimation in nine States which had higher number of registered deaths in CRVS than the number of deaths estimated in SRS. The estimated overall deaths in SRS are based on a fixed panel sample of representative population in a geographic location over a 10 yr period<sup>11</sup>. No evaluation of completeness of reporting in SRS has been done since 1992 though it was noted in the earlier evaluations that SRS captured 90 per cent of all vital events<sup>23</sup>. The SRS bulletins describe the method of gathering data, but do not provide the level of missing data that can allow assessment of the level of completeness<sup>11,24</sup>. Furthermore, the fixity of the sample areas over a 10-yr period in SRS could result in biased estimates of overall deaths<sup>25</sup>. An attempt at estimating the extent of under-registration in the SRS data at all India level from the early 1990s up to 2007 indicated that the CoRD under SRS had comparatively worsened at the all India level<sup>23</sup>. Therefore, to improve the quality of CoRD estimation, the SRS data on death estimates will need to improve as well. The present analysis was limited in terms of age- and sex-specific CoRD assessment due to non-availability of age and sex for the estimated deaths in SRS. It would be prudent for such data to be publicly available from SRS. It was also not possible to assess CoRD by age and sex in the CRS as SRS does not provide the number of estimated deaths by age and sex categories that are needed for the CoRD calculation. Age and sex availability is a major gap in the CRS not only between the State but also between the years, with no definite pattern seen in this non-availability. The extent and variation of non-availability of age in the CRS do not allow meaningful use of these data. A global analysis has established that an improved CRVS performance coincides with improved health outcomes including child mortality risk<sup>26</sup>. In India, the

health policies and programmes use the estimates for neonatal, infant and under-5 mortality from the SRS and demographic health surveys because these data are not readily available in the CRS.

In general, some facilitators for death registration such as access to the insurance funds and succession of property owned by the deceased, barriers to death registration such as discontinuation of the government pension post death of a retired public sector employee or poor inclination to register death of a child are acknowledged in India. Sex of the deceased was well documented in the CRS and showed improvement over time but showed a decreasing trend in quality in 2015. Death registration was documented higher for males than females. This under-registration of female deaths is likely because India is a patriarchal society with the succession rights linked to males<sup>18</sup>. However, it remains unclear if this represents a relatively low probability of registration for women and/or true sex differences in the levels of mortality. These findings point to the significant need for focused research to understand the facilitators and barriers and the possible interventions to improve the completeness and quality of death registration in India. India has improved birth registration in the CRS<sup>13</sup>, and conditional cash transfer for institutional deliveries and requirement of birth certificate for school enrolment are cited as reasons for this improvement<sup>20</sup>. It is possible to improve death registration, and strategies ranging from linkage with burial services<sup>18</sup>, compensation to health workers to register community deaths, and adoption of direct electronic death registration have to be explored further<sup>14</sup>.

This analysis assessed only completeness for death registration, which underestimates the performance of CRVS because birth registration in India has shown tremendous improvement<sup>13</sup>. Several challenges and opportunities to monitor and strengthen CRS have been documented globally<sup>6-8</sup>. The inability of retrospective documentation of deaths in SRS to warn about an impending health crisis has been highlighted previously<sup>25</sup>, and recommendations to utilise the technical capacity of SRS to further improve CRVS have already been made<sup>25</sup>. Recently, the Government of India has indicated interest in introducing transformational changes in CRVS using information technology to register births and deaths on a near real-time basis, the implementation of which is planned at the local level within the States<sup>27</sup>.

In conclusion, the present analysis suggests that it is time for India to give sufficient and long overdue priority to improving CRS and reducing its dependence on SRS for birth and death estimations. The importance of the CRS as a cornerstone for health information system and its benefits for public health policy and practice cannot be undermined<sup>9</sup>. Concentrated effort in the assessment of strengths and weaknesses at the State level of not only the CRS process, but also of its outcome in terms of quality of data it produces and plausibility of information generated, are urgently needed.

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### References

- Shibuya K, Scheele S, Boerma T. Health statistics: Time to get serious. *Bull World Health Organ* 2005; 83 : 722.
- Nichols EK, Giles D, Kang'oma S, Mwalwanda L, Onaka A, Notzon F. Rapid assessment of Malawi's civil registration and vital statistics system. *Public Health Action* 2015; 5 : 162-4.
- Schmidt M, Pedersen L, Sørensen HT. The Danish civil registration system as a tool in epidemiology. *Eur J Epidemiol* 2014; 29 : 541-9.
- Phillips DE, Lozano R, Naghavi M, Atkinson C, Gonzalez-Medina D, Mikkelsen L, et al. A composite metric for assessing data on mortality and causes of death: The vital statistics performance index. *Popul Health Metr* 2014; 12 : 14.
- Rao C, Osterberger B, Anh TD, MacDonald M, Chuc NT, Hill PS. Compiling mortality statistics from civil registration systems in Vietnam: The long road ahead. *Bull World Health Organ* 2010; 88 : 58-65.
- Mahapatra P, Shibuya K, Lopez AD, Coullare F, Notzon FC, Rao C, et al. Civil registration systems and vital statistics: Successes and missed opportunities. *Lancet* 2007; 370 : 1653-63.
- AbouZahr C, de Savigny D, Mikkelsen L, Setel PW, Lozano R, Lopez AD. Towards universal civil registration and vital statistics systems: The time is now. *Lancet* 2015; 386 : 1407-18.
- Mikkelsen L, Phillips DE, AbouZahr C, Setel PW, de Savigny D, Lozano R, et al. A global assessment of civil registration and vital statistics systems: Monitoring data quality and progress. *Lancet* 2015; 386 : 1395-406.
- Setel PW, Macfarlane SB, Szreter S, Mikkelsen L, Jha P, Stout S, et al. A scandal of invisibility: Making everyone count by counting everyone. *Lancet* 2007; 370 : 1569-77.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. Civil Registration System in India; 2017. Available from: <http://crsorgi.gov.in/about-us.html>, accessed on July 27, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. Sample Registration; 2019. Available from: [http://www.censusindia.gov.in/Vital\\_Statistics/SRS/Sample\\_Registration\\_System.html](http://www.censusindia.gov.in/Vital_Statistics/SRS/Sample_Registration_System.html), accessed on July 27, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. *Vital statistics of India based on the civil registration system 2014*. New Delhi: ORGI; 2016. Available from: [http://www.censusindia.gov.in/vital\\_statistics/SRS\\_Reports\\_2014.html](http://www.censusindia.gov.in/vital_statistics/SRS_Reports_2014.html), accessed on April 24, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. *Vital statistics of India based on the civil registration system 2015*. New Delhi: ORGI; 2017. Available from: [http://www.censusindia.gov.in/vital\\_statistics/SRS\\_Reports\\_2015.html](http://www.censusindia.gov.in/vital_statistics/SRS_Reports_2015.html), accessed on October 23, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. Sample Registration System. Available from: [http://censusindia.gov.in/vital\\_statistics/SRS/Sample\\_Registration\\_System.aspx](http://censusindia.gov.in/vital_statistics/SRS/Sample_Registration_System.aspx), accessed on July 27, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. Presentation on CRS. Available from: [http://crsorgi.gov.in/crs\\_software\\_Presentation.pptx](http://crsorgi.gov.in/crs_software_Presentation.pptx), accessed on July 20, 2017.
- Office of the Registrar General of India, Ministry of Home Affairs, Government of India. FAQs on CRS. Available from: [http://crsorgi.gov.in/web/uploads/download/FAQ\\_of\\_CRS.pdf](http://crsorgi.gov.in/web/uploads/download/FAQ_of_CRS.pdf), accessed on July 27, 2017.
- Ministry of Health and Family Welfare, Government of India. *Report of the technical committee on strengthening of the civil registration system*. New Delhi: MoHFW; 2012.
- Gupta M, Rao C, Lakshmi PV, Prinja S, Kumar R. Estimating mortality using data from civil registration: A cross-sectional study in India. *Bull World Health Organ* 2016; 94 : 10-21.
- Singh PK, Kaur M, Jaswal N, Kumar R. Impact of policy initiatives on civil registration system in Haryana. *Indian J Community Med* 2012; 37 : 122-5.
- James KS, Kavitha N, George A, Kulkarni PM, Prasad S, Kumar S. *Preliminary assessment of the quality of civil registration system in Kerala, Odisha and Rajasthan*. New Delhi: UNFPA; 2013. Available from: <http://india.unfpa.org/sites/default/files/pub-pdf/ReportonCRS-Final.pdf>, accessed on July 27, 2017.
- Maharatna A, Sinha A. *Long-term demographic trends in North-East India and their wider significance, 1901-2001*. Kolkata: Institute of Development Studies; 2011. Available from: <http://idsk.edu.in/wp-content/uploads/2015/07/OP-26.pdf>, accessed on July 27, 2017.
- Bhattacharyya S. Births, deaths in online mess - poor infrastructure doubles trouble; 24 December, 2016. Available from: [https://www.telegraphindia.com/1161224/jsp/northeast/story\\_126516.jsp](https://www.telegraphindia.com/1161224/jsp/northeast/story_126516.jsp), accessed on August 12, 2017.

23. Mahapatra P. *Sample registration system in India - An overview*. Prince Mahidol Award Conference. Bangkok: Institute of Health Systems; 2010. <https://unstats.un.org/unsd/vitalstatkb/KnowledgebaseArticle50447.aspx>, accessed on August 12, 2017.
24. Office of the Registrar General of India, Ministry of Home Affairs, Government of India. *SRS Statistical Report 2015*. New Delhi: ORGI; 2016. Available from: [http://www.censusindia.gov.in/vital\\_statistics/SRS\\_Reports\\_2015.html](http://www.censusindia.gov.in/vital_statistics/SRS_Reports_2015.html), accessed on July 29, 2017.
25. Hill K, Lopez AD, Shibuya K, Jha P; Monitoring of Vital Events (MoVE). Interim measures for meeting needs for health sector data: Births, deaths, and causes of death. *Lancet* 2007; 370 : 1726-35.
26. Phillips DE, AbouZahr C, Lopez AD, Mikkelsen L, de Savigny D, Lozano R, *et al*. Are well functioning civil registration and vital statistics systems associated with better health outcomes? *Lancet* 2015; 386 : 1386-94.
27. Ministry of Home Affairs, Government of India. *Citizen feedback for transformation of births and deaths registration system*. New Delhi: MHA; 2017. Available from: <https://www.mygov.in/mygov-survey/citizen-feedback-transformation-births-and-deaths-registration-system/>, accessed on April 20, 2017.

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