IIHMR UNIVERSITY

Reporting of Medical Certificate of Cause of Death (MCCD) in Death Certificate

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MBA-HM (2020-2022)

Context

Introduction

- The Registration of birth and deaths Act was first proposed in Rajya Sabha in 1969, but it lapsed when the parliament was dissolved.
- On February 27, 1968, the Rajya Sabha passed the bill for the first time.
- The bill was amended and passed by the Lok Sabha on May 27, 1969.
- Rajya Sabha approved it in 1969.
- On May 31, 1969, it received the president's consent.
- On June 2, 1969, it was published in the Gazette of India, Extraordinary, Part II, Section I.

Introduction

- As per provision of the Registration of birth and deaths act 1969 registration of every birth and death is compulsory. The persons who are to report the events of births and deaths to their nearest registration units within 21 days of occurrence of such events failing which late fees for delayed registration are charged.
- Implementation of the act is the responsibility of the state governments.
- Rules framed by the state governments are based on a model set of rules provided by the central government (Registrar General, India).

Introduction: Rajasthan State

- Enforced in Rajasthan State in April 1970 for the implementation of RBD Act 1969 in the state.
- Rajasthan Registration of Births and Death Rules, 1972 were framed.
- The state rules were further amended in year 2000.
- The Director of Economic & Statistics had been appointed as the Chief Registrar of Births & Deaths.
- Persons required to register birth and death under Section 8(1)(f).
- Form of certificate as to the cause of death under Section 10 (3).

Medical Certificate of Cause of Death (MCCD)

- Under the system of Registration of Births & Deaths, the scheme of Medical Certification of Cause of Death (MCCD) – an integral part of the Vital Statistics System, aims at providing a reliable and temporal database for generating cause-specific mortality statistics.
- Generally issued by government employed medical officer or a private practitioner.

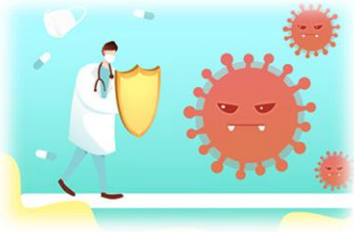
Importance of MCCD

Important morbidity & mortality statistics

Backbone of National Health Policy and Planning

For medical research

monitoring of population health trends

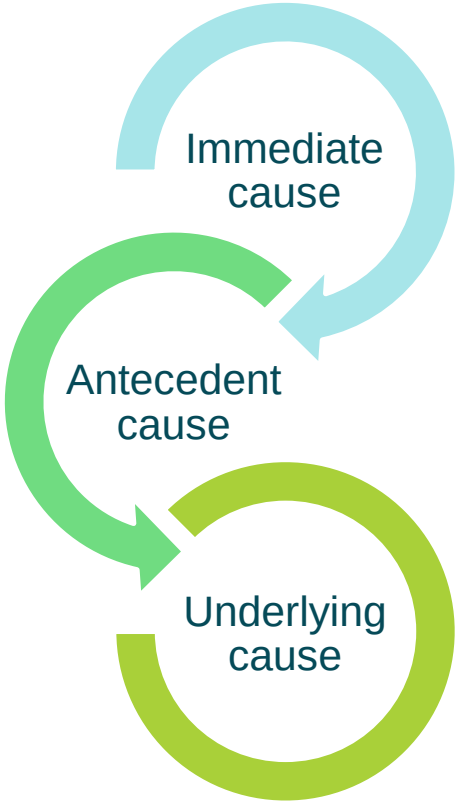


therapeutic and preventative actions for various health concerns

Definition of Cause of Death

- In 1967, the 20th World Health Assembly defined the causes of death to be entered on the medical certificate of cause of death as “all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries”.
- In a given situation more than one of the above conditions may be present, which may be completely unrelated to each other or they may be causally related to each other, i.e. one leading to the other, thus establishing a sequence.

Chain of Cause of Death



- The importance of recording the sequence correctly lies in the fact that appropriate strategies can be adopted to cut the chain at its most vulnerable point and thus prevent death.

- **Example:** In a case of Diabetes Mellitus, dying of septicemia due to gangrene of a limb-
  - Immediate Cause : Septicemia
  - Antecedent Cause : Gangrene of Limb
  - Underlying Cause : Diabetes Mellitus

Study objective & Methodology

Research Question: Why MCCD reporting is low in Rajasthan?

Objective

- To study the scenario of death registration in Rajasthan state.
- To undertake secondary data analysis for comparing MCCD status across state.

Study type: Secondary study
Study design: Observational Descriptive study.
Study Tool:

- Online PubMed and google scholar site.
- Structured search strategy using appropriate key words and Mesh terms.

Inclusion Criteria

- MCCD report 2019 and 2020 of India.
- MCCD report 2019 of Rajasthan state.
- Literature from year Jan 2011 to May 2022.

Exclusion Criteria

- MCCD reports other than 2019 & 2020 of India.
- MCCD reports of other states/UTs.
- Any literature that did not meet the above-mentioned inclusion criteria

Data Collection Methods:
Secondary data on the medical certificate of cause of death of Rajasthan state was taken from India's MCCD reports of 2019 and 2020 to perform this study.

1. To study the scenario of death registration in Rajasthan state.

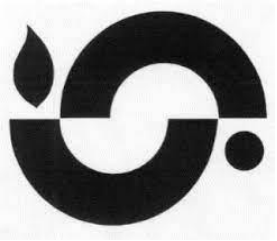
Civil Registration and Vital Statistics:

- Civil registration is a process whereby major vital events occurring in a population are officially recorded.
- The goal of civil registration is to record all vital events that occur in a country as they occur.
- The United Nations Statistics Division (UNSD) defines civil registration as “the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population, as provided through decree or regulation in accordance with the legal requirements in each country” (UNSD 2014).

Formats – Vital Registration:

- **Form 2-** Death reporting form.
- **Form 3-** Is still birth reporting form.
- **Form 4-** Medical certificate of cause of death form for the death occurred in hospitals.
- **Form 4A-** Is MCCD form for death occurred in housed, (MCCD- Medical certificate of cause of death)
- **Form 6-** Death certificate.

CRVS reporting in Rajasthan state



- In 2014, the state created and deployed an indigenous registration system known as "Pehchan“ portal.
- Establish by Rajasthan's Directorate of Economics and Statistics (DES), cooperated by NIC (National Informatics Centre).
- Integrating Aadhar and digital signatures with Pehchan in 2015.
- Marriage registration began in 2016.
- Bhamashah (single registry system) was fully integrated in 2017.

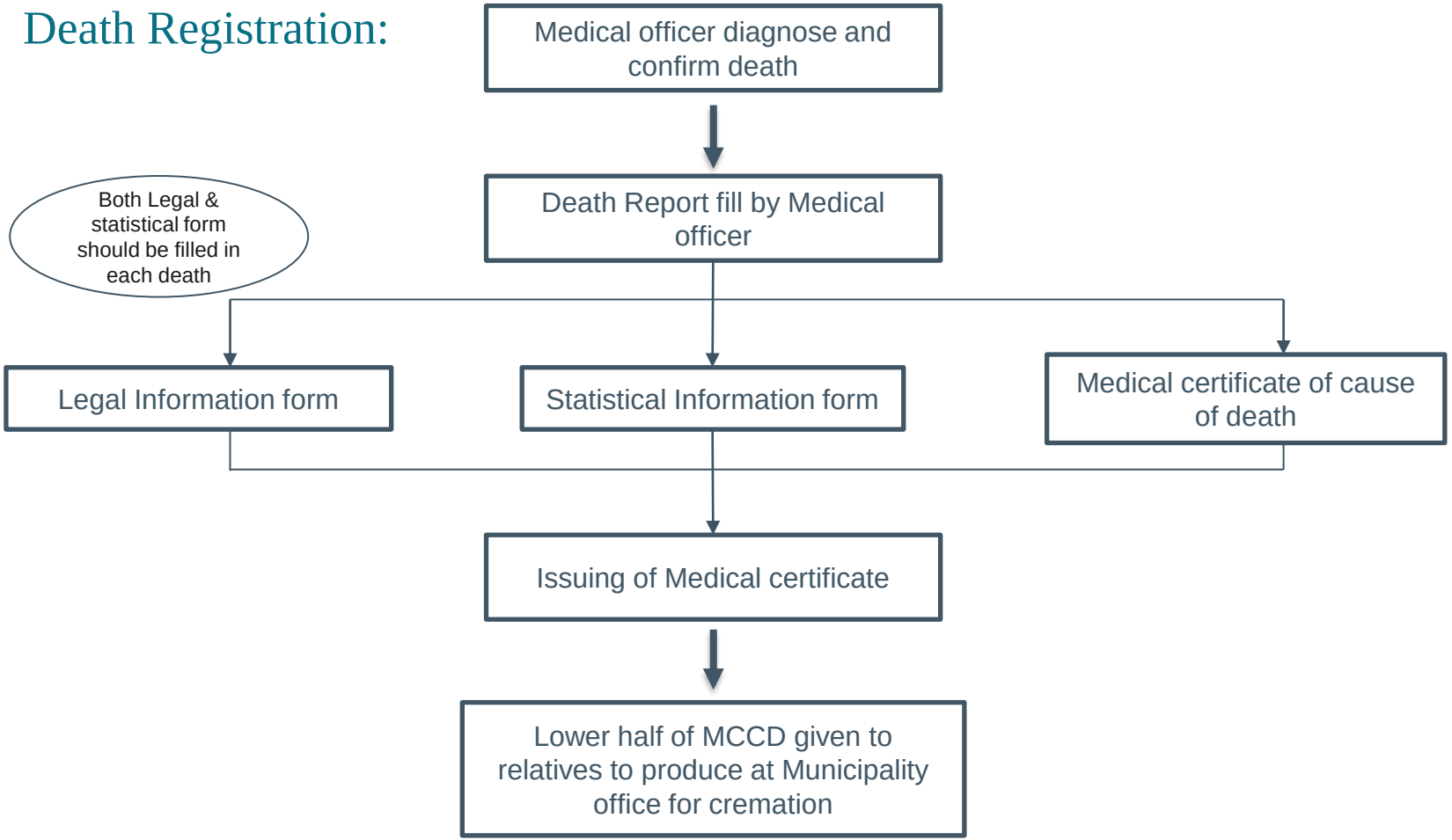
CRVS reporting in Rajasthan state

- In 2018, Chief Registrar of Births and Deaths of Rajasthan issued an order for mandating the use of digital certificates for all births, deaths, and marriage registration.
- To reach out to registrars and beneficiaries at their convenience, Pehchan android app created.
- On Pehchan, the state government has established "NICCI," an artificial intelligence chatbot for online help.

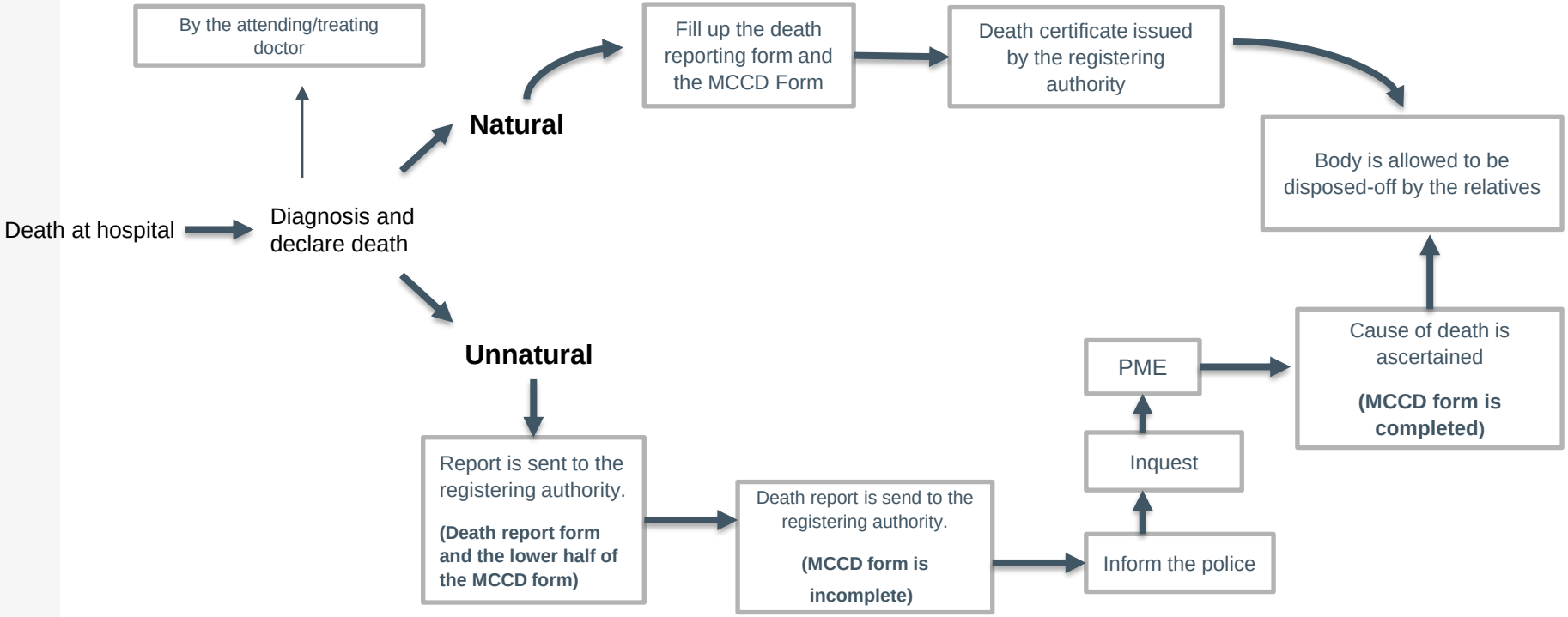
Who can report death?

- It is the responsibility of the medical officer in charge of the hospital or primary health centre, where the delivery/death, has taken place, to report the death for registration.
- It is the responsibility of the head of the household/nearest relative, to report the births/ death that takes place in households.
- A birth or death to be reported for registration, within 21 days of occurrence.
- Any death, after the expiry of 21 days, but with 30 days of occurrence, shall be registered on payment of a late-fees.
- Not been reported within 1 year of its occurrence, shall be registered only on orders of the first class judicial magistrate and on payment of a late fees.

Death Registration:



Chronology of events following death in hospital



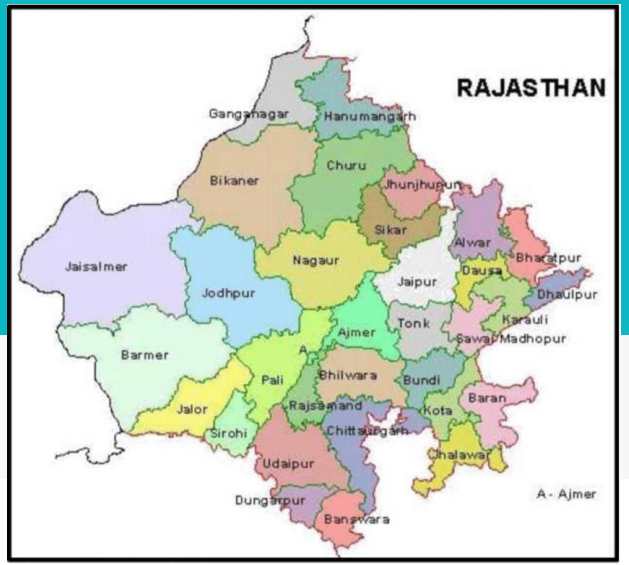
Person responsible for doing birth and deaths registration:

Area	Birth and Death Registration
Village Panchayats	Village Administrative officers (Panchayat sewak)
Nagar Panchayats	Health officer/ Executive Officers
Corporation/ Municipal Areas	Executive officers/Health officer/Sanitary Inspectors of the division
Plantations/Estates	Estate Manager/Plantation Manager

2. To undertake secondary data analysis for comparing MCCD status across state.

MCCD Status 2020:

Rajasthan State Scenario



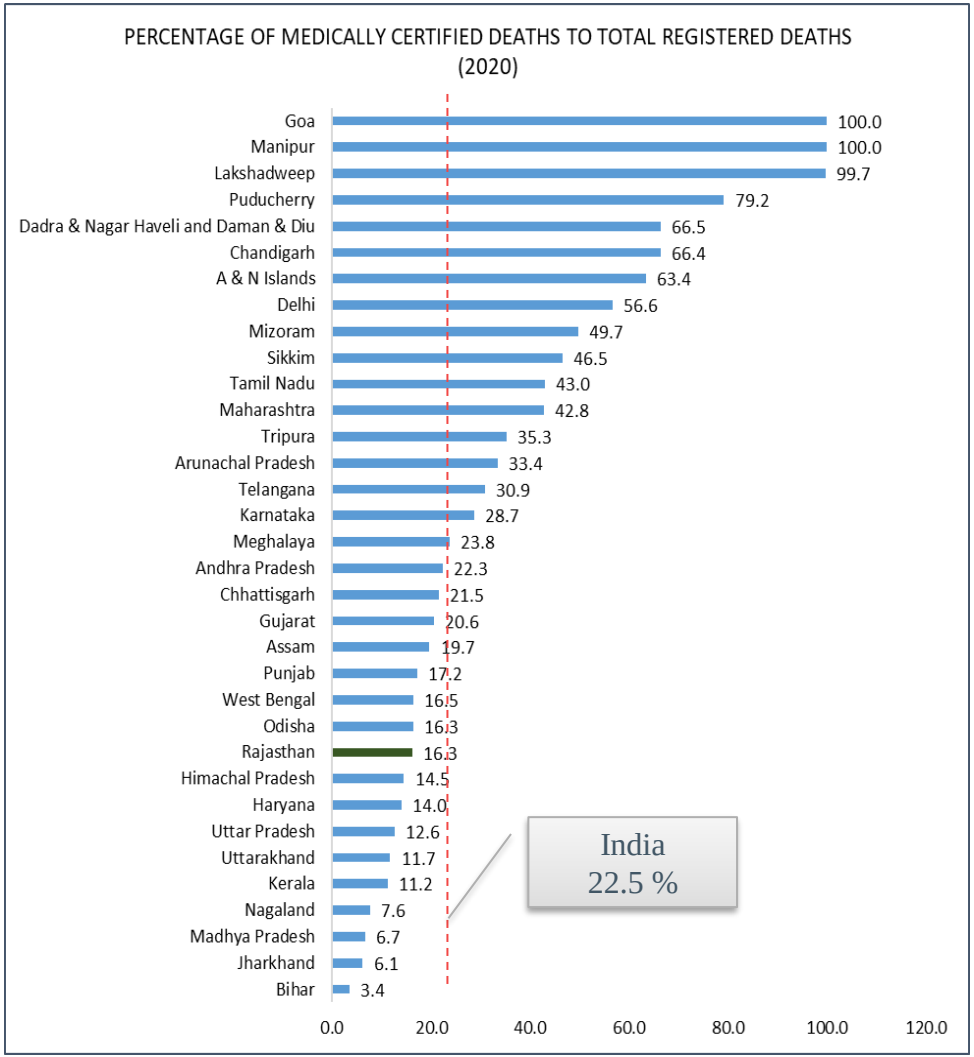
Ranking of Rajasthan state with respect to other States/UT's : 2020

The highest level of MCCD among states:

- Mizoram (49.7 %)
- Sikkim (46.5%)
- Tamil Nadu (43.0 %)
- Maharashtra (42.8 %)
- Tripura (30.4 %)

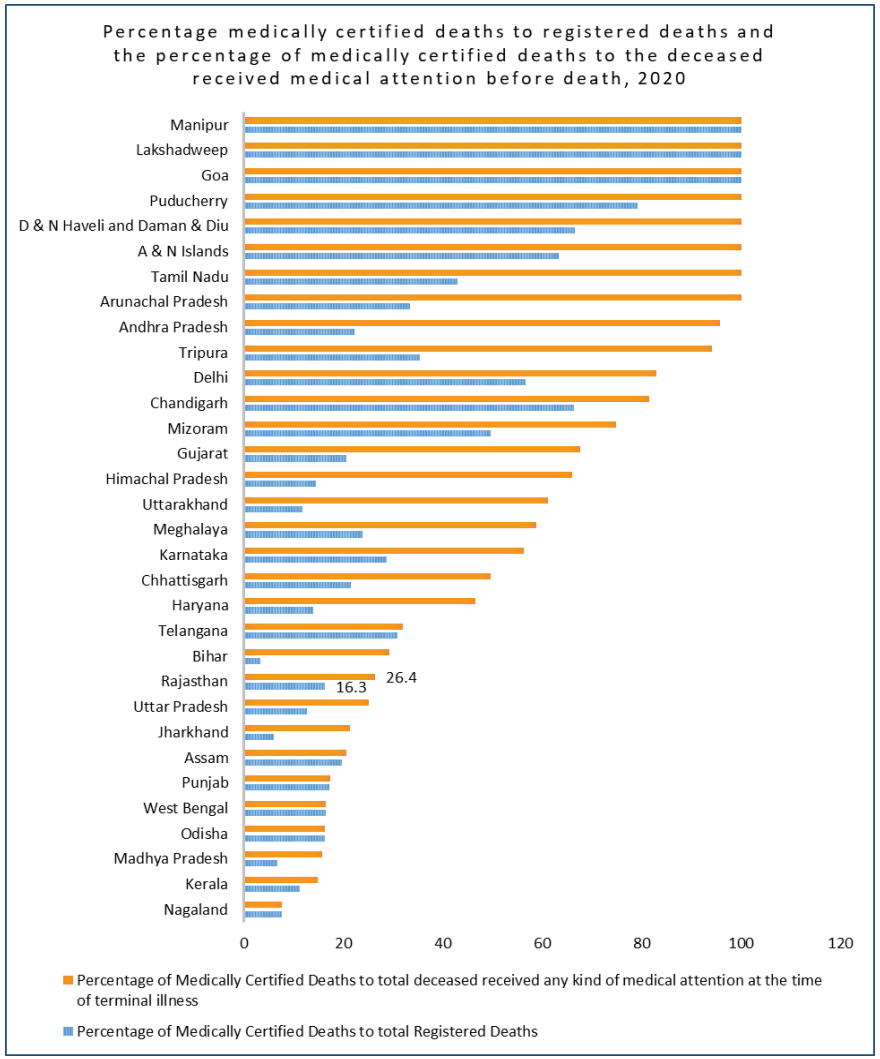
For union territories:

- Goa (100 %)
- Manipur (100 %)
- Lakshadweep (99.7 %)
- Puducherry (79.2 %)
- Dadra & Nagar Haveli and Daman Diu (66.5 %)

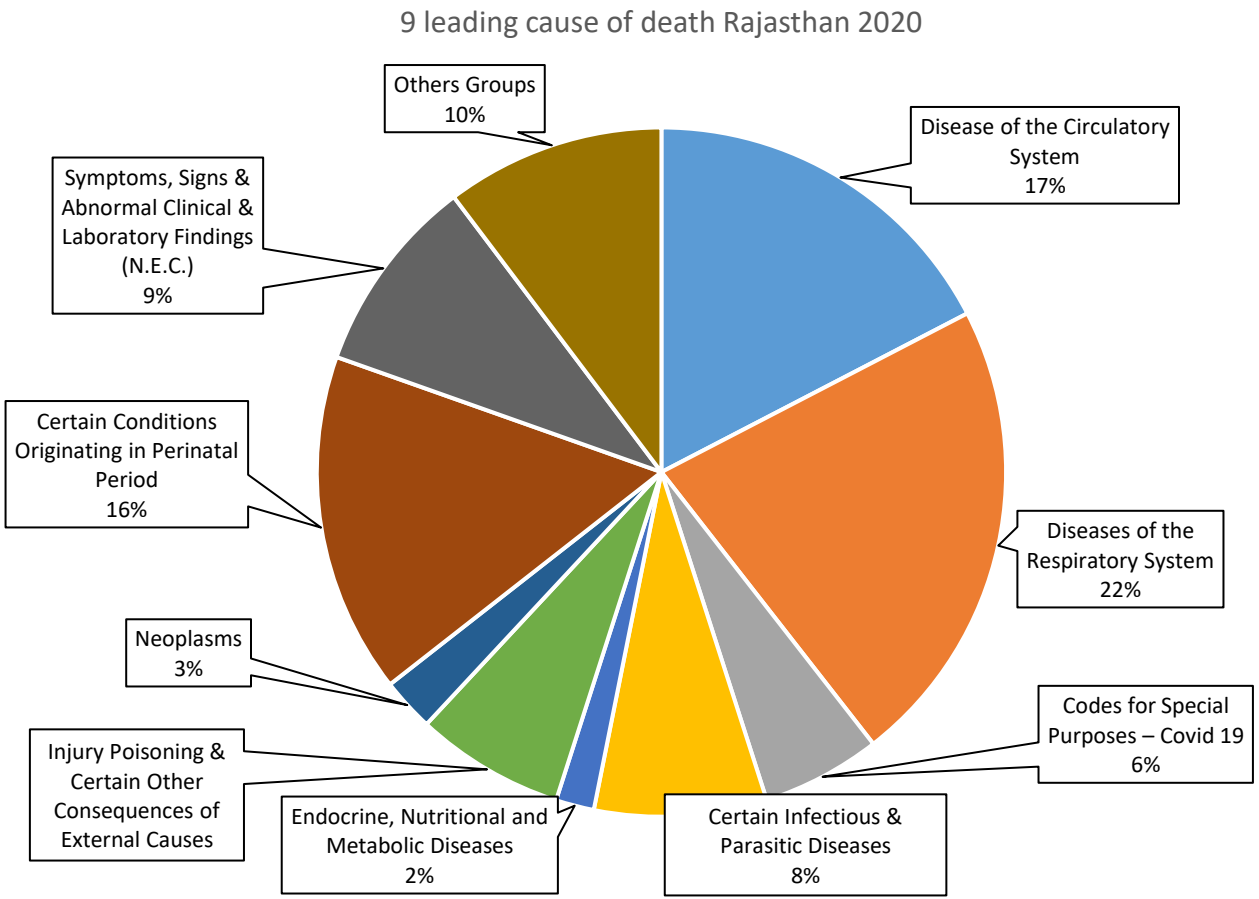


Percentage of MCCD to the percentage of diseased who received medical attention (2020)

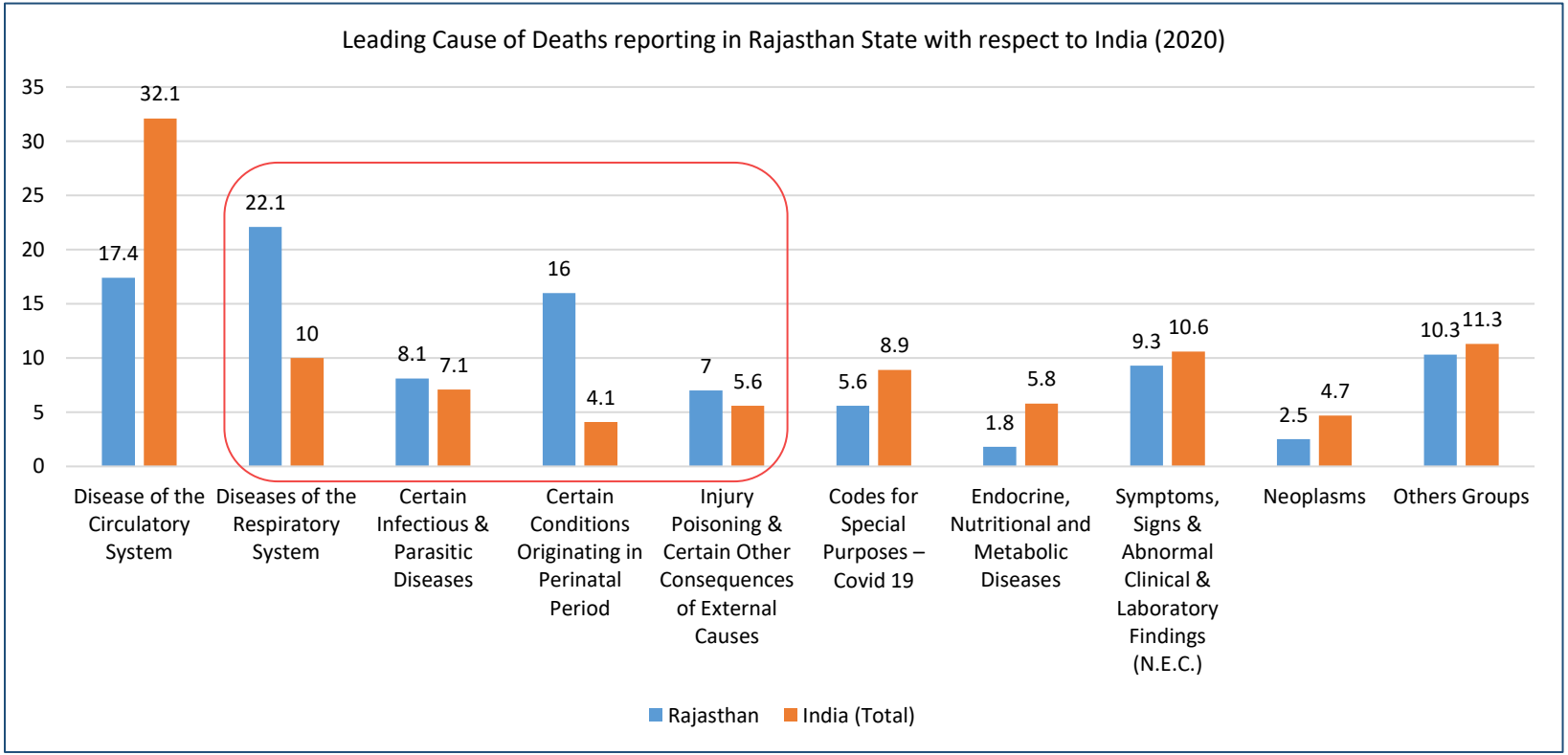
- Chart shows the states where the deceased had got any form of medical assistance during their final illness, the percentage of medical certification of cause of death is encouraging in States/UTs namely A & N Islands, Arunachal Pradesh, D & N Haveli and Daman & Diu, Goa, Lakshadweep, Manipur, Puducherry and Tamil Nadu, it is 100 percent.
- The proportion of deceased who received medical treatment before death is 26.4 percent for Rajasthan state.



Percentage of Major Leading cause of death in Rajasthan state (2020)

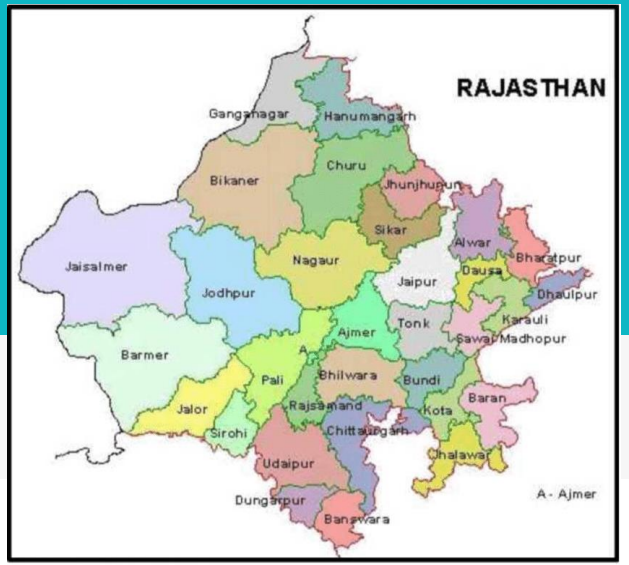


Leading Cause of Deaths reporting in Rajasthan State with respect to India (2020)



MCCD Status 2019:

Rajasthan State Scenario



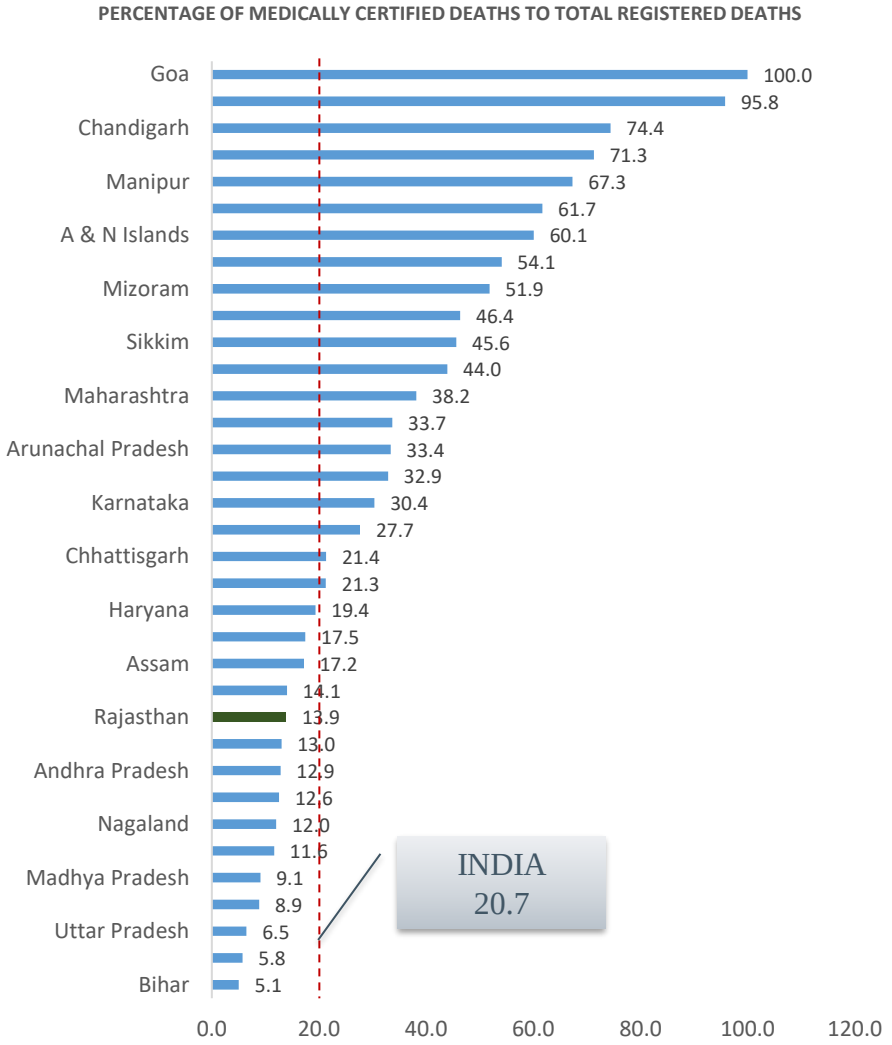
Ranking of state 2019:

The highest level of MCCD among states:

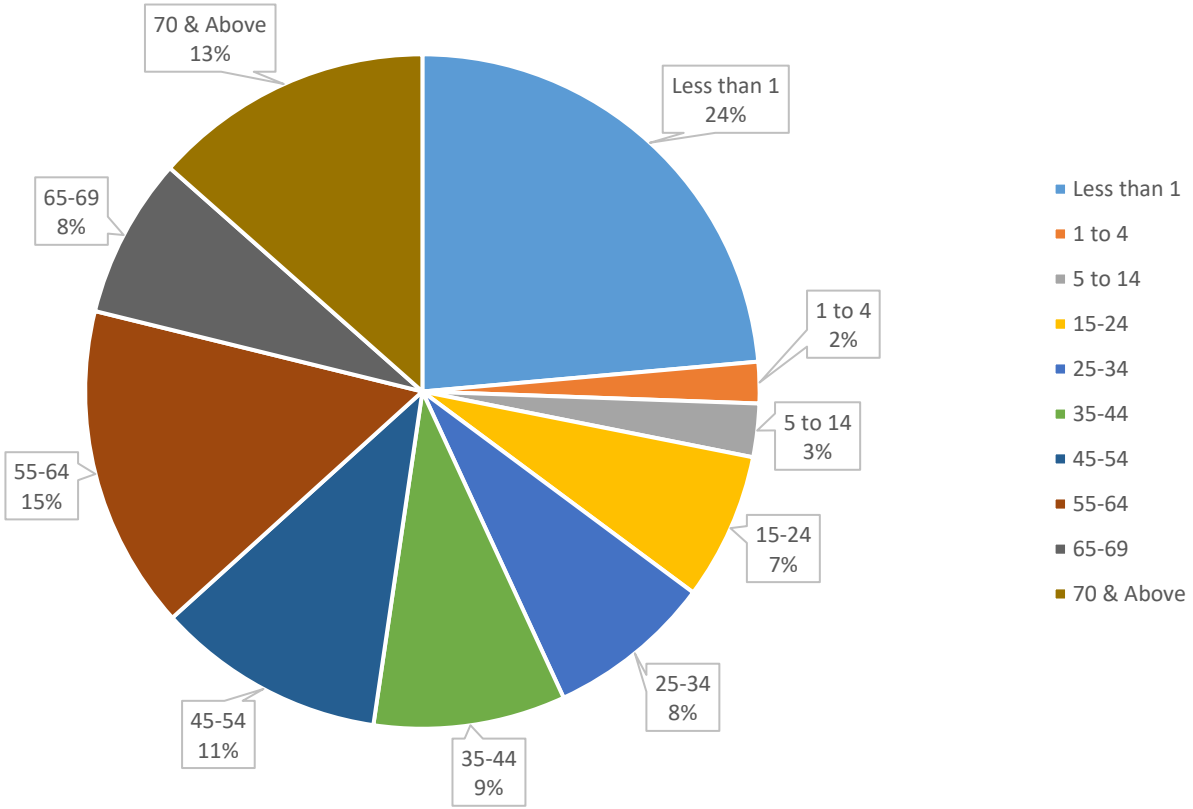
1. Tamil Nadu (44.0 %)
2. Maharashtra (38.2 %)
3. Karnataka (30.4 %)
4. Telangana (27.7 %)
5. Gujarat (21.3 %).

For union territories:

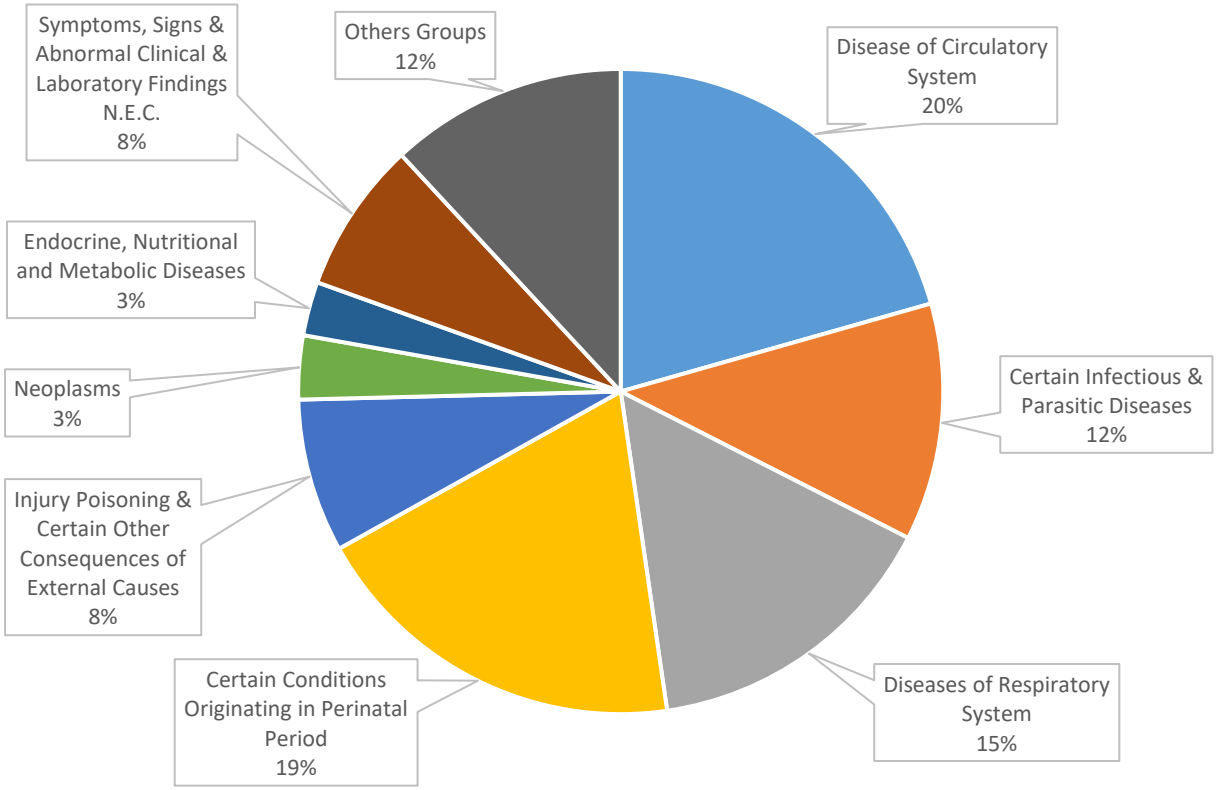
1. Goa (100.0 %)
2. Lakshadweep (95.8 %)
3. Chandigarh (74.4 %)
4. Puducherry (71.3 %)
5. Manipur (67.3 %)
6. Delhi (61.7 %)



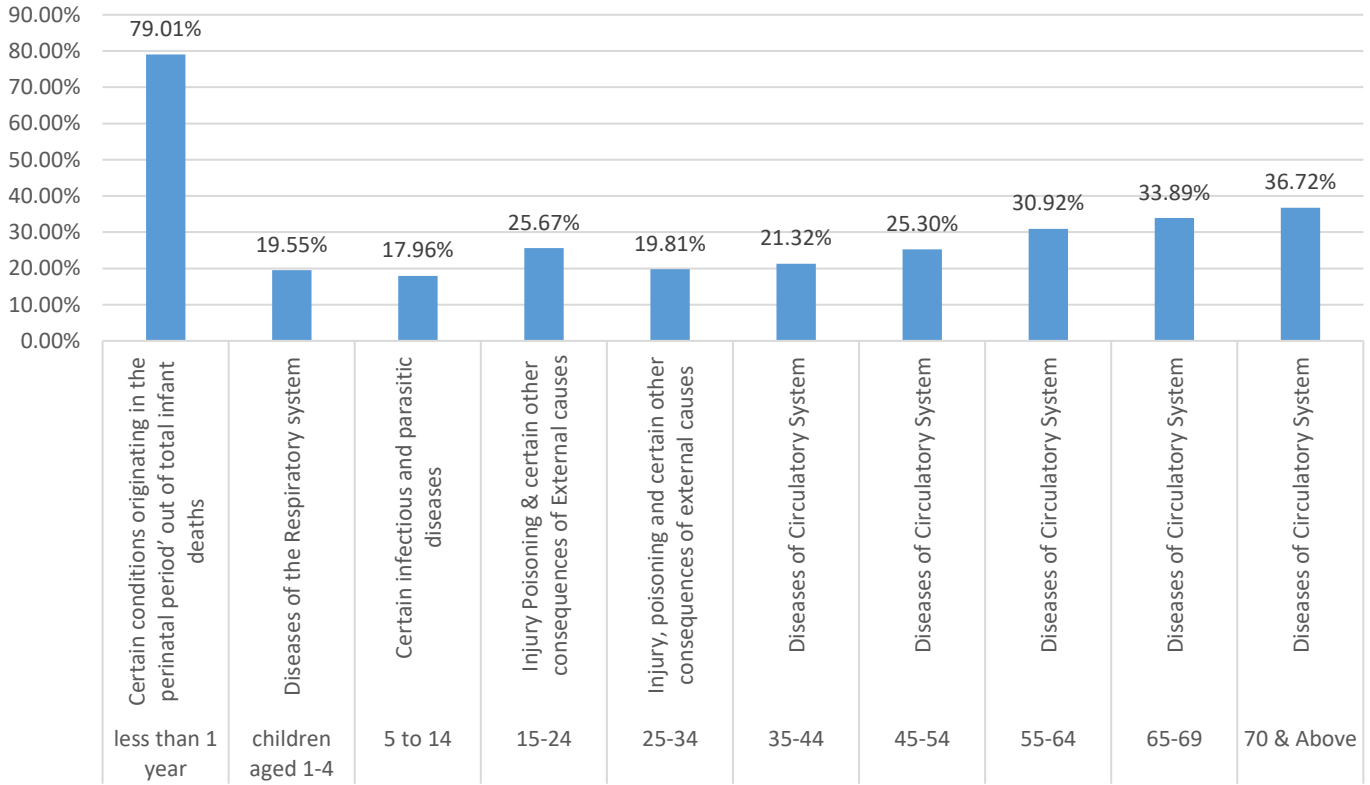
Percentage of MCCD death registered of that age group to total registered MCCD- Rajasthan (2019)



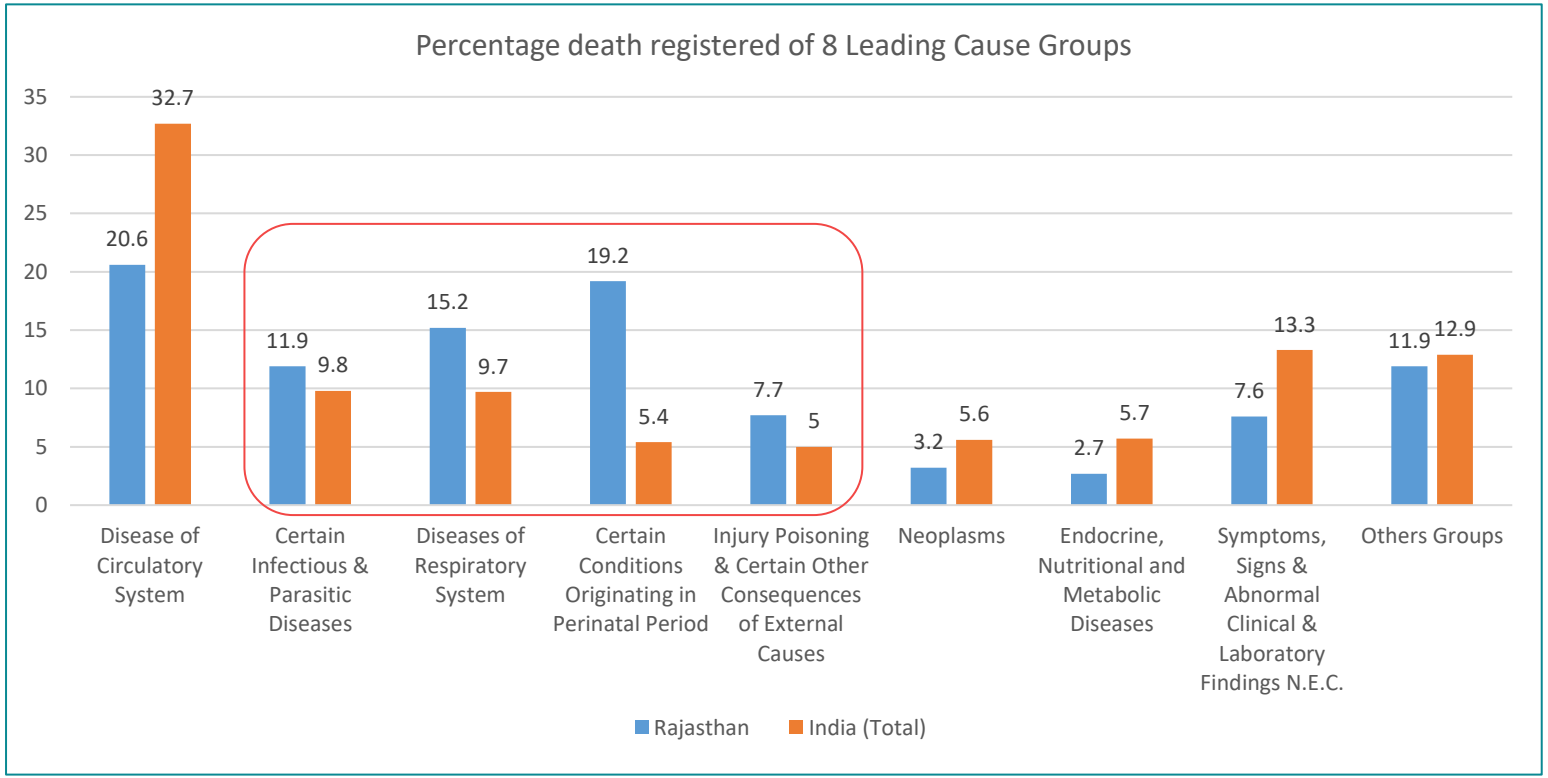
Percentage of 8 Major Leading cause of death in Rajasthan state (2019)



Leading Cause of Deaths of Particular Age Groups of Rajasthan State (2019)



Comparing Leading cause of death in Rajasthan state with India(2019)



Shifting Pattern:

Of MCCD reporting from 2019 to 2020 in Rajasthan state :

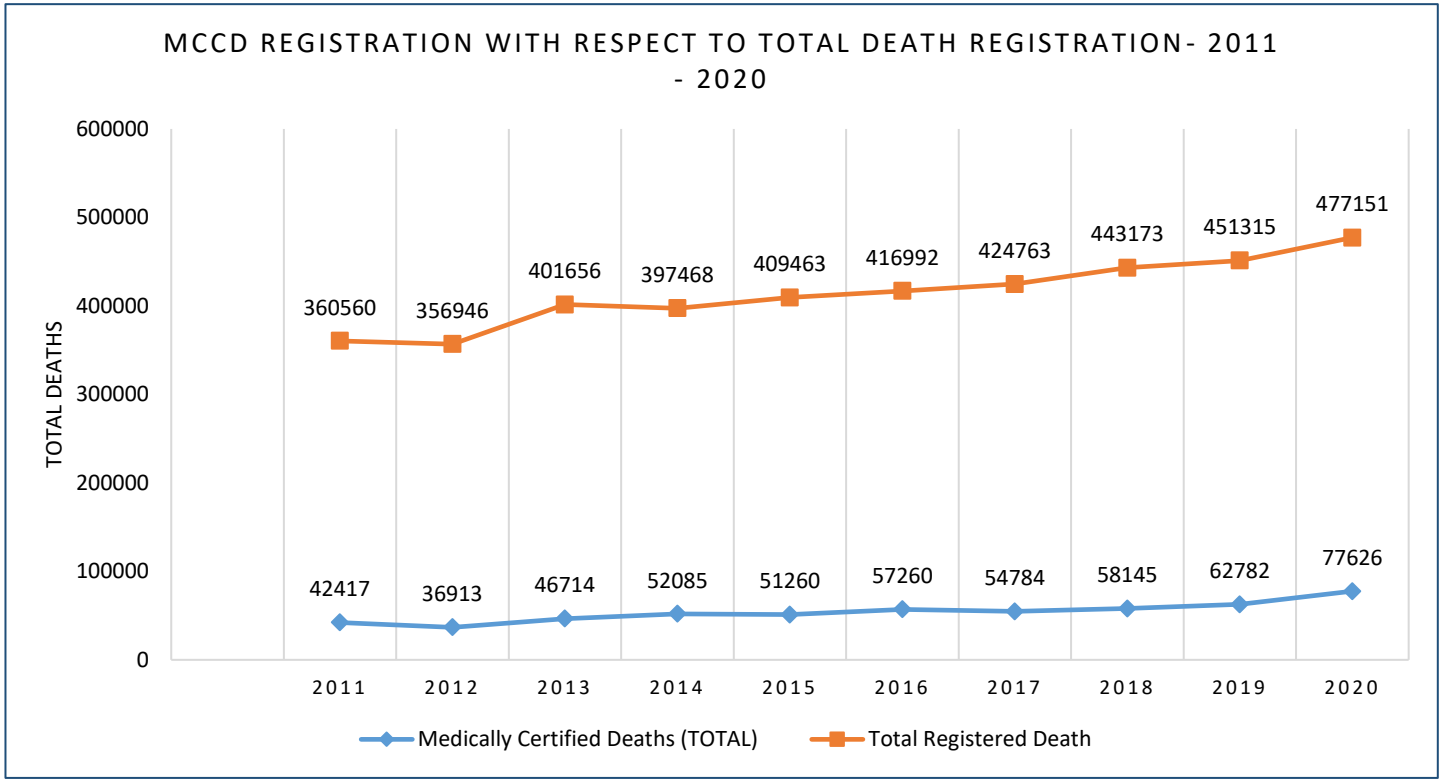
Shifting pattern of death registration and MCCD in Rajasthan state 2019 & 2020

- "Vital Statistics based on Civil Registration System" for the year 2019 at the national level has been released on 15th June 2021.
- The registration level of deaths during 2020 has increased to 92.0% from 66.4% in 2011 in India.

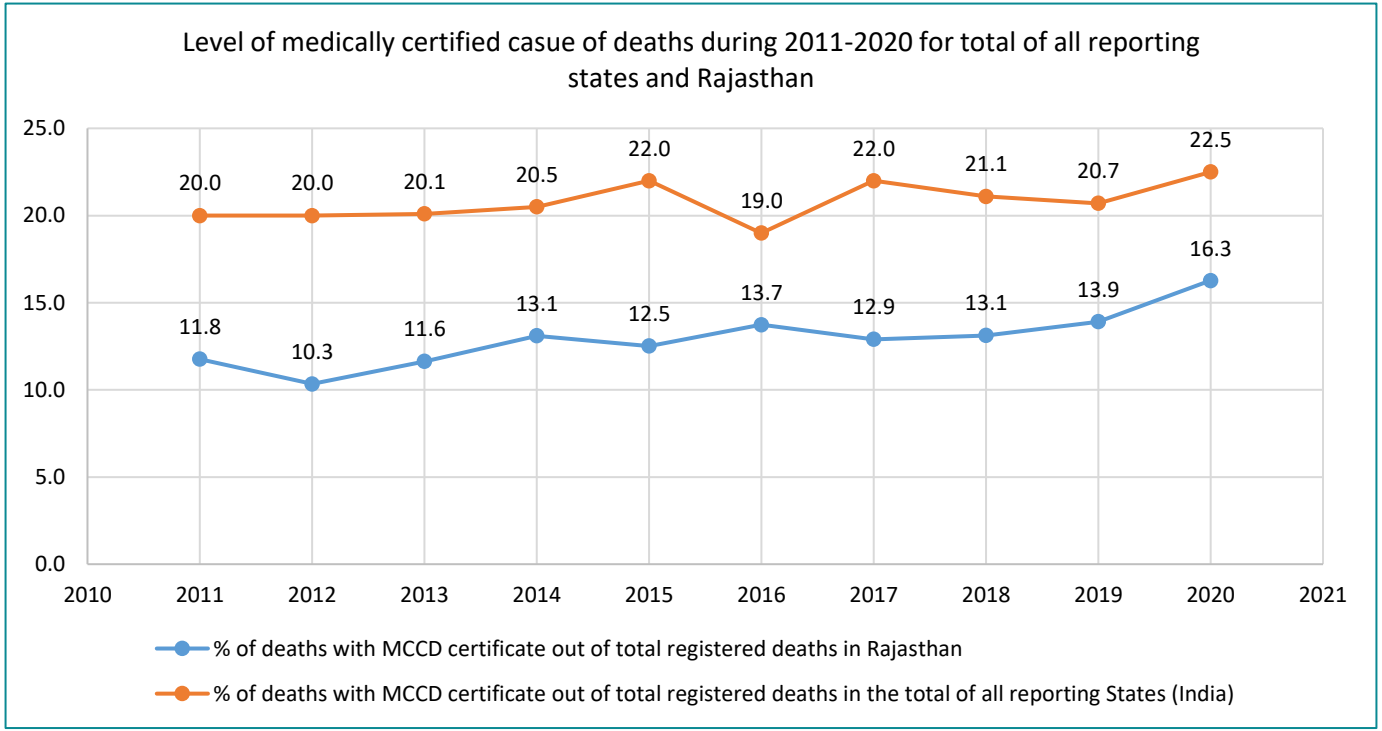
Percentage of Medical Certified death to registered death in State Rajasthan (Year 2016 to 2020)			
Year	**Total Registered Death**	**Medically Certified Deaths (TOTAL)**	**% Of deaths with MCCD certified out of total registered deaths in Rajasthan**
2016	416992	57260	13.7
2017	424763	54784	12.9
2018	443173	58145	13.1
2019	451315	62782	13.9
2020	**477151**	**77626**	**16.3**

Table no 1: No: of registered death and medically certified registered death in state Rajasthan (2011-2019)

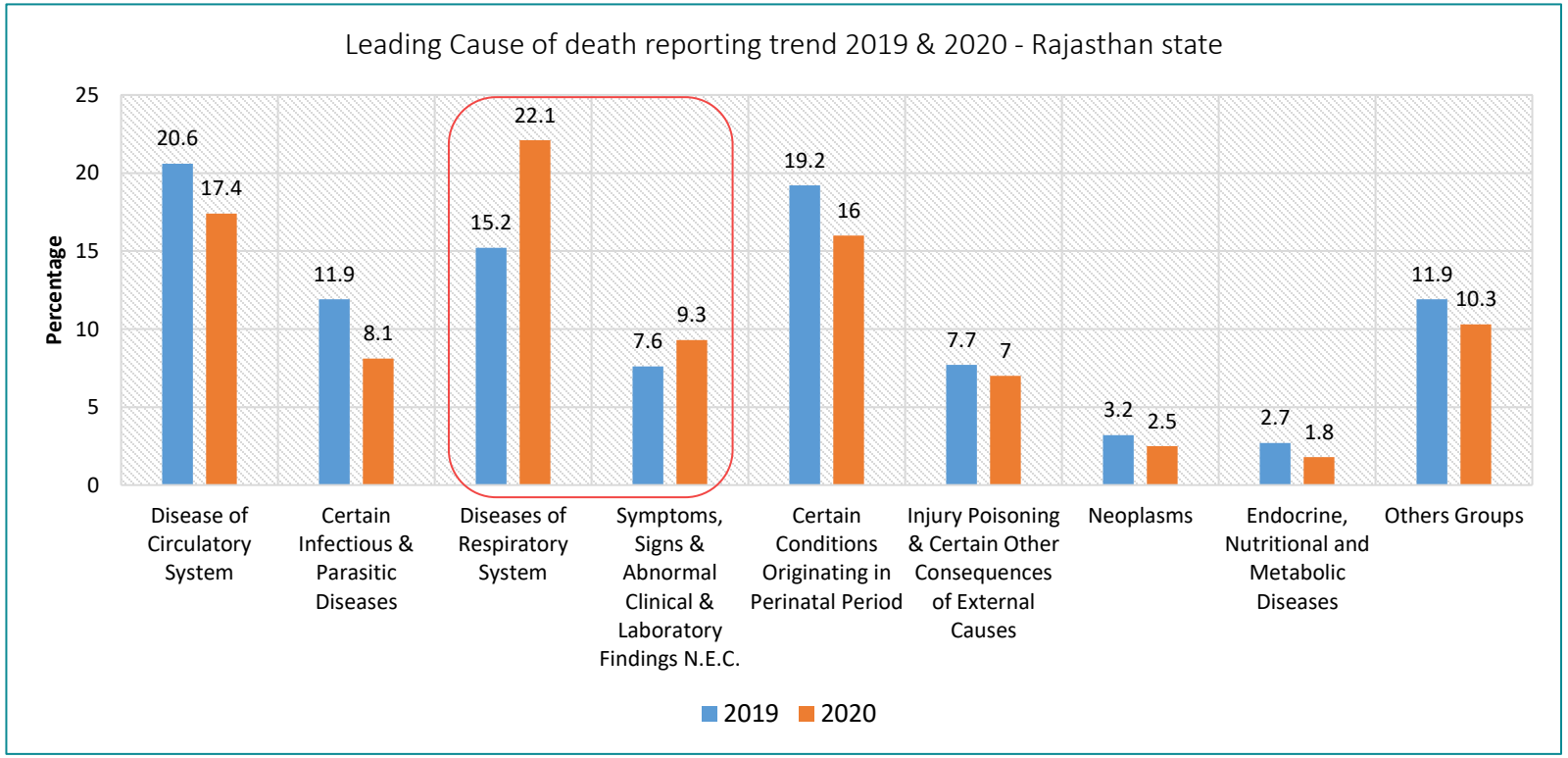
MCCD registration with respect to total death registration in Rajasthan state (2011 – 2020)



Comparison of MCCD registered in Rajasthan with National average (2011-2020)



Comparison of MCCD registered in Rajasthan with National average (2011-2020)



Conclusion

- Mortality data are an essential component of the vital statistics system. They are a fundamental component of population expansion. Furthermore, cause-specific mortality rates are important indicators of population health trends and are supplied on a scientific foundation by the system of medical certification of cause of death.
- Age, gender, and cause-specific death rates are essential markers for evidence-based monitoring of population health trends. Statistics on causes of mortality are critical for planners, administrators, and medical experts to implement effective therapeutic and preventative actions for a variety of health issues.
- Recognizing the centrality of proper medical cause of death certification and death registration, the preceding discussion of the many parts of the same has attempted to address the challenges and concerns that licensed medical practitioners have, when certifying death. Even with exceptional medical knowledge and competence, many medical professionals incorrectly answer this form. Understanding the pathology of the underlying and contributory causes of death is essential for the certifier.

Conclusion

- Medical research is currently being affected by the spread of illnesses such as cancer, AIDS, heart disease, non-communicable and communicable diseases, and so on. In order to address these concerns, good documentation of information on causes of death is required.
- Despite the high death registration rate in Rajasthan, there is an extremely low medical certified death registration rate. This low MCCD registration rate has been continuously below the national average for the previous nine years. The state is ranked 25th out of 35 states and territories. Secondly, the partial and imprecise completion of the MCCD form by the medical physician is directly affecting the data for actual cause of death, leading to variation in statistical documentation, further effecting formulation in National health policy planning.
- Cause-specific mortality rates are key indicators of the health trends in the population. So, Cause of death certification is a critical skill that all physicians should acquire in order to enhance the accuracy of population mortality statistics.

Recommendations:

- To move the MCCD project ahead in a systematic manner across the country, the Registrar General of India must persuade all States/UTs to include all hospitals (public and private) and private medical practitioners, both in rural and urban regions, in the scheme.
- The cause of death should be properly investigated in the presence of an experienced physician, and monthly review sessions should be held.
- An evidence-based knowledge of the relative relevance of medical certification mistakes on cause of death data should drive efforts to examine and enhance the quality of medical certification, particularly medical physician training in correct certification.

Recommendations:

- In India, to enhance death registrations and medically confirmed death reporting:
  - There is a need to raise community knowledge about the advantages of death registration.
  - Improving the procedure for first reporting of deaths.
  - Implementing rigorous and more effective monitoring system of death registration data.
  - Strengthening capacity building of staff .
  - Making registration offices more readily accessible.
  - At the municipal and state levels, digitization of death data entry and flow of cause of death is one way to enhance registration.
  - Strengthening the private sector's death and MCCD reporting.
  - Municipalities and health agencies had a joint evaluation meeting.

Reference

- https://urban.rajasthan.gov.in/content/raj/udh/ctp/en/urban-profile/rajasthan-at-glance.html
- https://crsorgi.gov.in/web/uploads/download/MCCD_Report_2019.pdf
- https://plan.rajasthan.gov.in/content/dam/planning-portal/Directorate%20of%20Economics%20and%20Statistics/Publication/Other%20publication/a%20decade%20of%20medical%20certification%20of%20cause%20of%20deaths%20in%20rajasthan%201999-2008.pdf
- https://www.census2011.co.in/census/state/rajasthan.html#all
- https://en.wikipedia.org/wiki/Rajasthan#Demographics
- https://pehchan.raj.nic.in/pehchan5/Mainpage.aspx
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4923180/#cesec110title
- https://www.medrxiv.org/content/10.1101/2021.12.09.21267291v1.full.pdf

Thank You!