Leveraging Health Information Helpline to Sustain Health-Care Delivery during the COVID Pandemic: Experiences from a State in Eastern India

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Abstract

Background: The unprecedented demands on health-care systems due to the COVID-19 pandemic made countries including India to switch toward alternative modes of health-care delivery. **Objectives:** The aim of this study was to describe the various COVID-related services delivered through 104 health information helpline (HIHL), located in Jharkhand during the pandemic. **Methods:** The de-identified secondary data from February 2020 to December 2021 related to COVID services delivered through HIHL were analyzed. **Results:** There was a significant increase in the COVID call volume during the first as well as the second wave. The HIHL has been able to guide the callers on testing, home isolation and follow-up, home-based teleconsultation, vaccination, timely referral, and support with logistic-related information. **Conclusion:** The 104 HIHL has played a critical role in sustaining health-care delivery during the pandemic, combating the "infodemic" and guiding the general public by providing authentic information.

Key words: Alternative model of health-care delivery, COVID-19, health information helpline, Jharkhand, pandemic

INTRODUCTION

The COVID-19 pandemic has placed unprecedented demands on health-care systems across the world. As health facilities continue to be overwhelmed with COVID-related services, there is a risk of essential health services being compromised.[1] To manage the tremendous burden posed by COVID on health-care facilities, there is an urgent need to transform health-care delivery using digital technologies.^[2] Most countries, including India, have switched to alternative models of delivering health care, such as home-based care, increasing the use of digital solutions such as telemedicine and health information helplines (HIHLs).[3,4] Most of these models leverage the telecom revolution and Internet availability, though these were previously existing, their usage has accelerated following the onset of the pandemic.^[5] As of 2020, the mobile phone penetration among the Indian population is 80%, of which 69% is a smartphone, and is likely to increase to 80% and 85%, respectively by 2025.^[6] The COVID pandemic necessitated the provision of accurate and timely information to

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the general public on symptoms, guidance on testing, information on health-care facilities, and medical advice. To address this demand, on January 25, 2020, a 24×7 National Helpline 1075 was operationalized by Government of India. Fifteen states/union territories utilized their preexisting 104 HIHLs for registration and resolution of COVID-related grievances and as health helplines to support the general public with medical advice during COVID-19.^[7] Jharkhand was one such state which leveraged the 104 HIHL to deliver various COVID services.

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MATERIALS AND METHODS

This is an observational study based on the secondary data from 104 HIHL, Jharkhand. The de-identified secondary data related to COVID services delivered by the 104 HIHL from February 2020 to December 2021 were considered for the study. The data were analyzed using MS Excel for COVID call trends, the demographic distribution of calls, and COVID call types. A descriptive account of the various COVID services undertaken by the state by leveraging the 104 HIHL and the beneficiary coverage through such initiatives has been provided in this article. Approval was taken from the State National Health Mission (NHM) and Institutional Ethics Committee for this study.

About the 104 health information helpline and data flow process

The 104 HIHL was set up in 2014, through a public–private partnership initiative. Staffed with health advisory officers, medical officers, and counsellors, the helpline provides medical advice for minor ailments, common health conditions, prescription of over-the-counter drugs, counseling for mental health, health facility information, and addresses grievances related to health schemes/services.

The HIHL uses an application to capture the caller's details such as name, contact number, age, gender, place of residence, and reason for calling. Based on the reason for calling, the algorithms in the application guide the health advisory officer to arrive at a provisional diagnosis and give relevant information on the condition with the help of disease summaries. The calls which require medical advice/ prescription and calls related to mental health are transferred further to the medical officer and counsellor, respectively. The callers are informed that their information is being entered into the application and the calls are being recorded for auditing purposes. After the onset of the pandemic, call tagging for COVID was created to document the COVID calls. For initiatives which were subsequently introduced by the State NHM to combat the COVID burden, the data were being documented in Excel format.

Results and Discussion

Jharkhand has 24 districts, out of which 17 are tribal and Ranchi is the state capital. The state has a population of 32.9 million with tribal population accounting for 26.2% of the population of the state.^[8,9] The 104 HIHL service is made available to all 24 districts of Jharkhand through a toll-free phone call to a three-digit number (104) from any landline or mobile phone. Since its inception in 2014, the HIHL has attended 5 million calls till December 2021.

Inbound calls related to COVID

The state of Jharkhand reported its first laboratory-confirmed case of COVID on March 30, 2020, in a foreign national.^[10,11] The 104 helpline at Jharkhand started receiving calls from the general public on COVID since February 2020. Since the onset

of the COVID pandemic, technology and social media are being used on a massive scale to keep people safe, informed, and connected. However, at the same time, the large-scale use of social media has also resulted in rapid circulation of unauthentic information, leading to an "Infodemic" causing panic among the general public, that can adversely impact the measures to control the pandemic.^[4,12] The HIHL has been able to address the calls from the general public and guide them efficiently based on validated information from authentic sources and prevent the spread of misinformation. The COVID calls included queries related to the disease, its symptoms, precautions to be taken, infection control measures, guidance on testing for people who have symptoms suggestive of COVID, guidance on home isolation, information on COVID testing, and treatment facilities. The information was given to the callers based on the content developed from advisories released by the Ministry of Health and Family Welfare, the Indian Council of Medical Research, the World Health Organization, etc.

As shown in Table 1, the COVID-related calls comprised only 1% of the total call volume in February 2020, there was a significant increase in the volume of COVID calls in March 2020, which continued in consecutive months till a dip in June 2020, this may be due to the gradual increase in the cases in India, the announcement of restriction of social gathering, and subsequent nationwide lockdown from March 25, 2020,

Table 1: Trend of COVID calls from February 2020 till

December 2021					
Year	Month	Total calls received at 104	Number of COVID calls	Percentage of COVID calls to total calls (%)	
2020	February	9791	155	1.58	
2020	March	21,167	10,040	47.43	
2020	April	29,509	15,947	54.04	
2020	May	34,003	20,718	60.93	
2020	June	17,436	5145	29.51	
2020	July	15,945	5620	35.25	
2020	August	18,894	4773	25.26	
2020	September	15,586	3683	23.63	
2020	October	12,634	1809	14.32	
2020	November	8396	604	7.19	
2020	December	8968	536	5.98	
2021	January	8409	373	4.44	
2021	February	9121	749	8.21	
2021	March	11,321	1557	13.75	
2021	April	27,115	15,284	56.37	
2021	May	40,983	29,108	71.02	
2021	June	69,426	45,844	66.03	
2021	July	110,226	73,492	66.67	
2021	August	134,329	92,229	68.66	
2021	September	115,893	79,473	68.57	
2021	October	58,636	30,012	51.18	
2021	November	49,350	21,810	44.19	
2021	December	50,454	24,236	48.04	

which continued till June 7, 2020.^[13,14] The volume of calls continued to decline from October 2020 onward till February 2021 and reported a significant increase in April 2021, coinciding with the decline of COVID cases since September 2020 and the onset of the second wave in mid-March 2021, and a peak in the number of cases after the 1st week of April 2021.^[15] Jharkhand was one among the 19 states with a high burden of COVID during the second wave.^[16] The state reported a COVID fatality rate of more than 1% between April 18, 2021, and April 24, 2021.^[17,18] The volume of COVID calls was higher than during the first wave. With the lockdowns being announced in response to the second wave in Jharkhand on April 22, 2021, which continued in May, there was a tremendous increase in the volume of cases in May 2021. The 104 HIHL has handled 69,030 COVID calls in 2020 and 4.1 lakh COVID calls in 2021.

As shown in Table 2, in the year 2020, the majority of the calls (88.1%) were made for male beneficiaries, while only 11.6% of calls were made for female beneficiaries. The same trend continued in 2021, with 85.7% of the COVID calls made for males. In the year 2020, the majority of the calls were made for beneficiaries in the age group of 20–30 years (43.4%), followed by those aged above 30 years (41.7%). In 2021, a similar trend continued, with calls from beneficiaries aged 20–30 years accounted for a large proportion of the calls (48.1%), followed by calls from individuals aged above 30 years (40.5%). This may be due to the initiation of vaccination in the year 2021.

Figure 1 shows the district-wise distribution of the calls for the years 2020 and 2021, in the year 2020, most of the calls were clustered in Ranchi (19.8%) where the helpline is located, followed by East Singhbhum and Dhanbad Districts. In the year 2021, there has been an increase in the utilization

Table 2: Distribution of COVID calls based on demographic variables of beneficiaries

Parameter	Year 2020, <i>n</i> (%)	Year 2021, <i>n</i> (%)
Distribution of callers		
based on gender		
Female	8053 (11.67)	59,043 (14.26)
Male	60,794 (88.07)	354,932 (85.7)
No information provided	183 (0.27)	192 (0.04)
Total	69,030 (100)	414,167 (100)
Distribution of callers based on age (years)		
<5	16 (0.02)	439 (0.11)
5-10	575 (0.83)	603 (0.15)
11-19	9512 (13.78)	45,826 (11.06)
20-30	29,965 (43.41)	199,237 (48.11)
31-40	15,446 (22.38)	86,911 (20.98)
41-50	7491 (10.85)	44,586 (10.77)
51-60	3747 (5.43)	20,208 (4.88)
>60	2095 (3.03)	16,219 (3.92)
No information provided	183 (0.27)	138 (0.03)
Total	69,030 (100)	414,167 (100)

of the services of the helpline by other districts as well due to increased awareness on the COVID services provided by the helpline.

Guidance on COVID vaccination

On January 16, 2021, India launched the largest vaccination drive with the COVID vaccine for its citizens in a phase-wise manner.^[19] The vaccination was initially open for health-care staff and frontline workers and subsequently made available to the elderly and individuals aged between 45 and 59 years with comorbidity (March), individuals aged above 45 years (April), and all individuals aged above 18 years (May). Following the introduction of the vaccine, vaccine-related calls comprised to a major proportion of COVID calls. In January 2021, the COVID vaccine-related calls accounted for 30.29% of the total COVID calls, which further increased to 60% in February and March 2021. Following a dip in the month of April, there was a massive increase in the COVID vaccination-related calls from May onward. This coincides with the announcement to include all individuals aged 18 years and above for vaccination from May 2021. These calls included queries about the vaccine available in India, their side effect, information on eligible groups, vaccination in the presence of comorbidities, vaccination among COVID-infected individuals, and guidance on registration in CoWIN portal. The helplines were also leveraged to report any adverse event following immunization (AEFI), as shown in Figure 2.

The helpline has been able to guide 102,136 beneficiaries by addressing their queries related to CoWIN portal. These queries were related to the guidance on registration in CoWIN portal, queries on nonreceipt of text messages or certificates following vaccination, and any other technical hassles encountered while using CoWIN portal. Follow-up of AEFI following COVID vaccination was also conducted by 104.

Provision of COVID-related services for mild/asymptomatic cases in the safe confines of their homes through the following initiatives

Outbound calls for the follow-up of COVID patients under home isolation

About 80% of COVID patients present with mild symptoms or may have no symptoms and can be cared at home,^[20] while immunocompromised patients, elderly, or those with any underlying comorbidity should be assessed by the treating doctor before recommending home isolation.[21] The service of outbound calls for follow-up of COVID patients was initiated from August 27, 2020, by 104 HIHL. The objective of the call was to monitor the mild/asymptomatic COVID cases, provide health advice, and address health concerns of patients with underlying morbidity, to ascertain compliance with medication and COVID precautions, and to guide prompt referral in patients with serious signs/symptoms. The data of the COVID patients under home isolation were received from the Integrated Disease Surveillance Project cell, and five HAOs were trained to manage the outbound calls. Till December 31, 2021, 55,000 COVID



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Figure 1: District-wise distribution of the COVID calls for the year 2020 and 2021.

patients under home isolation have been monitored through outbound calls. The periodic outbound calls were intended to prevent the overburdening of the health facilities while ensuring the facilities remain available for patients with moderate-to-severe disease.

Teleconsultation of beneficiaries

The teleconsultation facilities were launched by NHM, by connecting the callers with practitioners of allopathic and AYUSH systems of medicine. The teleconsultation services with allopathic and AYUSH practitioners started on April 15, 2021, and from 10th May, respectively. Till December 31, 2021, allopathic and AYUSH consultation services have been provided to 12,156 and 450 beneficiaries, respectively. A team

of 50 volunteer doctors were providing consultation 24×7 for 24 districts of Jharkhand. The consultation process was coordinated by a team of eight moderators from 104 helplines. Three channels were created to handle high call volume and immediate consultation. There was neither any wait time involved for consultation nor any prior booking required, which allowed any citizen with smartphone access to avail of this service free of cost at a single click.

Delivery of home isolation kits to COVID patients

Under this initiative, the home isolation kits were delivered to the doorsteps of COVID patients under home isolation. The kit consists of nine types of drugs, a mask, sanitizers, and a pulse oximeter. Once a request for the kit is received at 104 HIHL,



Figure 2: Percentage of calls related to COVID vaccine and AEFI out of total COVID calls. AEFI: Adverse event following immunization.

the patient details were taken and verified for authenticity. The kits were delivered within 24 hours by a delivery partner. Under this initiative, 25,000 home isolation kits have been delivered till date, since its launch in April 2021. The kit consisted of an advisory on the symptoms, guidance on the use of medications, reinforce COVID-appropriate behavior and information on the toll-free HIHL number 104.

Timely support to COVID patients requiring hospitalization

This initiative was launched in April 2021. After the onset of the second wave, there were an increase in the burden of cases and a subsequent increase in the patients requiring hospitalization. There was an acute shortage of facilities such as hospital beds with oxygen and ventilator in both private and government hospitals. To overcome this issue and provide timely support with hospitalization, the 104 helpline played a vital role in allocating beds. The hourly updates on bed availability were received from all hospitals, and based on the information, the beds were booked. To avoid the waiting time, dual cross-checking was done directly with the hospital and the patient name was booked. Then, the patient was informed, and a unique registration number was provided for a smooth process. A total of 1600 beds at both government and private hospitals were made available to the beneficiaries through an efficient management system.

COVID circuit

This initiative was launched on April 25, 2021. When a COVID patient requires hospitalization but there are no beds available in the same district, the patient is transferred to their adjacent districts based on the availability of beds. For this, a dedicated

ambulance was assigned and patients were transferred through the green corridor. Till date, 500 beneficiaries have benefited from the COVID circuit initiative.

Chatbot facility

A chatbot facility was also introduced to provide authentic information on COVID to the general public. The 104 service was provided to the beneficiary through the chatbot option through WhatsApp. The beneficiary can get the relevant information on sending "Hi" to 8595524447.

Plasma donation

Launched on April 25, 2021, under this initiative, patients who have recovered from COVID were counseled to donate plasma and a database of 5000 plasma donors of all blood groups across the state were identified. On request for plasma from any district in Jharkhand, donor details were sent to the beneficiary/family member who requires plasma after obtaining consent from the donor. One thousand patients were helped through this initiative. (This initiative was undertaken before plasma therapy was dropped from the clinical management protocol).

Address grievance due to overpricing at private health-care facilities

To combat overcharging by private hospitals for COVID care services, charges for COVID treatment were fixed by the Government of Jharkhand for National Accreditation Board for Hospitals (NABHs) and Non-NABH accredited Hospitals. This initiative was launched and a committee was formed after receiving grievance calls related to overcharging by the hospitals for facilities such as oxygen, ventilators, and medications such as Remdesivir, through 104 HIHL. Any grievance received on overcharging was immediately brought to the notice of the District Commissioner of that concerned district. Immediate action was initiated by the respective District Commissioner (DC) by applying a penalty against the hospital and the extra amount charged was also returned to the beneficiaries. The helpline has been able to provide support to 36 beneficiaries and address their concerns through this initiative.

CONCLUSION AND WAY FORWARD

As the pandemic put an unprecedented burden on health-care systems and compromised health-care delivery, the 104 HIHLs have emerged as resilient models of health-care delivery. The helpline played a crucial role in providing care to mild COVID patients who form more than 80% of COVID cases and thereby supported in reducing the burden on health-care facilities which were already overwhelmed with severe and moderate cases of COVID. Due to the various initiatives planned to support the COVID patients through the 104 HIHL, Jharkhand, many patients have been able to receive doctor's consultations within the safe confines of their homes, and patients with moderate or severe disease were able to receive timely support with hospitalization.

The helplines have also emerged as a mass communication platform which has helped combat the infodemic and provide guidance to the general public based on authentic information. However, disparities in utilization of the COVID services based on gender and location highlight the critical need to improve awareness among the general public about the 104 HIHL through sustained Information, Education, and Communication activities, to improve coverage and enable timely support and guidance to the people.

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Conflicts of interest

There are no conflicts of interest.

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