Pattern of patients attending COVID 19 screening clinic: SWOT analysis of a salutogenic endeavour in North Bengal Medical College, Darjeeling district, West Bengal

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Abstract

Background: COVID-19 pandemic is a unique public health challenge causing unprecedented disruptions in normalcy. Low-and-middle-income countries need more context-relevant approaches since a majority of the world population lives here. Pandemic response in India was graded, and routine healthcare came to a screeching halt. COVID 19 Screening clinic was initiated with the intent to screen suspects and provide needful care after required consultation. It imparted preventive health education and addressed relevant queries, alleviating stress in the process. The second wave hit hard despite vaccination. Objectives: To determine the pattern of patients attending, to conduct SWOT analysis for an insight into clinic functioning and to generate a database for further simulation were primary objectives. Methods: Descriptive cross-sectional hospital-based secondary data analysis was conducted in North Bengal medical college and hospital (NBMCH) for three months with the help of preformed proforma, interview guide and available records. An exit interview was conducted. Willing participants were enrolled. Verbal consent and Institutional Ethics Clearance were taken. Results: An induction program was held every two months by the Department of Medicine, NBMCH. The clinic recorded 60,427 cases from 23rd March 2020 to 28th February 2021. The majority were males, Hindus and from rural areas of the Darjeeling district. 60.4% were symptomatic. Total cases quarantined, tested and admitted were 39.8%, 74.9% and 34.7%, respectively. However, unlike before, from September, 80.1% of the cases were symptomatic, and the majority came only for testing as national lockdown had ceased. SWOT Analysis revealed Strength as being able to operate 24*7 with coordination among all tiers of health care workers. Select seniors helped in its smooth conduction. The Weakness identified was clinic location beside the emergency, creating confusion.

Keywords: Core functioning, preventive behaviour awareness, screening clinic, supportive supervision

Background

COVID-19 pandemic is a unique public health challenge causing unprecedented disruption in normalcy. Around 4.5 million people were affected globally, with 300,000 deaths causing a massive hit to financial sectors. India faced dire consequences with the reported 80,000 cases and 25,000 COVID-19

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related mortalities in the first few months alone.[1] It became evident that preventive strategies, which were the only cure, were resource-intensive and needed collective community ownership. The Low-and-middle-income countries (LMIC) especially needed more context-relevant approaches since a majority of the world population lived here. Pandemic response in India was graded and kept evolving due to incomplete know-how, under-preparedness and variegated epidemiological socio-political vulnerabilities.[3] The first case of COVID-19 in India was reported on 30th January 2020.[4] The breached border controls in February ushered disaster. The World Health Organization, on 11th March 2020, declared COVID-19 as a pandemic of global concern. On war footing, strategies were formulated, implemented and modified based upon operational feasibility in accordance with the dynamic course of the pandemic.[4]

North Bengal Medical College was no exception and geared up to join the fight alongside the country. Situated in the sub-Himalayan region, 600 km away from the state capital, in an era of lockdown, it faced its usual human resource and other logistic constraints. Notwithstanding limitations, various new setups were made functional to screen, treat and control the pandemic within and in adjoining areas of states as patients percolated from Bihar, Sikkim, Nepal, etc. At one point, all outdoor services were stalled, and new setups like Isolation wards, RICU, VRDL Laboratory, COVID 19 Testing Kiosk and COVID 19 Screening clinic were opened.

Family physicians are the first contact point of patients within the medical fraternity, and during COVID, they restored back the faith and trust in doctors through their exemplary dedication. Run by doctors who were from majority pre and paraclinical disciplines along with interns who gave a holistic treatment, the endeavour can serve as a blueprint of how a setup run by family physicians with teamwork and cooperation can withstand a year of other health facilities shut down. Mutual trust of service providers and beneficiaries goes a long way in caring and curing. The clinic became the first contact point of the community attending NBMCH. It was functional round the clock for one year without any leave. It operated from a newly designated area just beside emergency and was manned by faculties and junior doctors alongside dedicated nursing staff, security guards and drivers who worked in shifts ensuring the clinic did not go vacant even for 30 minutes a day. Logistics PPE was arranged painstakingly by the administrative hierarchy. New directives, signage, tie-up with other new facilities like Isolation wards, kiosks and COVID Hospitals outside the campus were operationalised under supervision. Every batch of interns had a mandatory internship induction session conducted by the Department of Medicine, NBMCH, where the essentials of smooth functioning were reiterated. Requisite records were sent to the district administration to track home quarantine cases. A huge patient load was managed to ensure queue discipline and social distancing.

Relevance
The clinic bore the major brunt of the deadly pandemic and admitted, tested and referred covid suspects and affected as needful. Panic struck high. The clinic also served as a counselling and information dissemination point for many and worked in close coordination with testing kiosks and Isolation wards. However, it was dismantled after one year of continuous run. Now reports of the second wave came lashing by. Similar setups have been started in other colleges also, but NBMCH was the only college to have a round-the-clock setup catering to all kinds of patients. Hence an overview of clinic functioning is sought to be portrayed so that similar setups may be simulated if, unfortunately, need arises. Since it was the first of its kind in the Darjeeling district with its unique set of directives, a SWOT analysis was attempted to identify unique characteristics and attempt for further modifications. There is a dearth of published literature on the topic. Moreover, understanding the trends and patterns of clinic attendees will provide insight into the epidemiological profile of the covid suspects and affected people. Various rates of testing, admission and quarantine will also help predict the pandemic curve of 2020. In the aforesaid context, the study was commenced with the following.

Objectives
1. To determine the sociodemographic profile of patients attending the COVID-19 Screening clinic
2. To understand the trends and patterns of patients attending the clinic
3. To ascertain attendee outcome, viz. quarantine, testing and admission at the study setting
4. To conduct a SWOT analysis of the clinic with insight to simulate similarly in concurrent circumstances.

Methods
A descriptive cross-sectional hospital-based study with secondary data analysis by record review was done to understand the patient profile attending the clinic, their fate and admissibility rate. The study area was North Bengal Medical College, situated in the Darjeeling district and the study setting was attending a screening clinic in its new setup for a period of one year (March 2020–Feb 2021). A SWOT Analysis was attempted on clinic functioning by qualitative methods of data collection among primary stakeholders of the clinic. Perception of the then college hierarchy and select staff one from each category, viz. doctors, junior doctors, nursing staff, security guards and drivers, was elicited by interview method using predesigned pretested semi-structured questionnaire. Anonymity and confidentiality of respondents were ensured. Data was collected for academic purposes only.

Proforma for secondary data analysis and interview guide were study techniques, whereas secondary data analysis by record review from documented registers and in-depth interview method were data collection techniques. Only willing participants
were enrolled for study purposes after pre-sensitisation and briefing about study intent and benefits. Data collected was compiled, cleaned and collated, then entered into Microsoft Excel and analysed using inferential statistics applying SPSS version 21.

The study was conducted after requisite permission from concerned higher authorities of North Bengal Medical College. Ethical clearance from Institutional Ethics Committee, NBMCH had been obtained duly before commencing the study. Requisite permission from the Principal and MSVP and concerned Head of Departments were obtained. The study was conducted by the appointed Screening clinic In-charge, NBMCH.

Results

COVID-19 Screening clinic recorded a total of 60,427 cases on record from 23rd March 2020 to 28th February 2021. COVID positive cases coming to the clinic were not accounted and were redirected to identified COVID Hospitals. Data was maintained and compiled routinely by the designated screening clinic in charge. The result was presented in the following subheadings:

Basic descriptors

The majority of respondents were males (41,309, 68.4%), Hindus (37,128, 61.4%), adults aged between 18 and 60 years (38,121, 63.1%), residing in rural areas (39,212, 64.9%) and married (49,107, 81.2%). The majority could sign their names. Respondents were mostly literate (32,129, 53.1%) and employed (31,074, 51.4%). Though mainly clinic attendees were from Siliguri (11,806, 19.1%), patients were from Bihar, mostly Purnea and Kishanganj, followed by Nepal (9,384, 15.5%). During lockdown, respondents coming from adjoining states were less though few came from Bombay, Assam, Meghalaya and Gujarat on the road. Migrant movement occurred.

Overall though asymptomatic cases were reported, the majority of respondents reported were symptomatic (36,481, 60.4%). Total number of cases quarantined, tested and admitted were (25,016, 41.4%), (45,290, 74.9%) and (20,965, 34.7%), respectively [Table 1].

Results of the next two sections, b and c, has been subdivided according to six monthly data review to have a clear insight which shows the initial part of the clinic had more footfall than the latter part.

1. March–August 2020 (number of cases reported were 41,407, 68.5%)
2. September 2020–February 2021 (number of cases reported were 19,020, 31.5%).

Trend and pattern of clinic attendees

Pulse oximeter readings were taken for all patients irrespective. Hand hygiene, masks and social distancing were ensured unanimously in each case.

Among 41,407 respondents who attended the clinic till August, the proportion of asymptomatic cases reported was high (20,167, 48.7%) though the majority were symptomatic cases (21,240, 51.3%). Only 24.8% had a history of travel (10,284) cases and 22.6% cases had a history of contact with an known covid positive case. Most of the people were locked up in homes and visited the hospital at the behest of their neighbours, or social media-generated panic. Among 19,020 cases reported after September, however, the majority of reported cases were symptomatic (15,241, 80.1%). Asymptomatic cases were reported less. History of known contact was present in (10,791, 56.7%) cases, and travel history was present in (12,741, 66.9%) cases.

The change in pattern indicates that after six months of the pandemic, more symptomatic cases with a history of travel or known contacts visited the clinic. Asymptomatic cases did not visit the clinic after September in significant number. It reflects changes in community awareness and preparedness regarding the pandemic alongside their changing understanding of clinic purpose.

Ascertaining fate of clinic attendees

Clinic functioning adhered to fixed directives issued by competent and relevant higher authorities. Among 41,407 respondents till August 2020, 78.3% reported lack of awareness and panic as the main reason for attending the clinic in the initial months. The majority were counselled and advised quarantine (18,298, 44.2%), mostly home quarantine, as sending them to institutional quarantine routinely was beyond the scope of the clinic. Testing was done in 27,169 cases (65.6%). The rate of admission from the clinic varied. Among 12,492, 30.2% of patients were admitted. The majority got admitted under Isolation Ward under the Department of Medicine, which bore a massive brunt. Moribund cases with SpO2 less than 93% got admitted in RICU Wards.

From September 2020 onwards, among 19,020 cases the majority of patients attended the clinic for testing (18,121, 95.2%). 6,712, 35.3% of willing patients were advised quarantine, especially with positive contact history and travel history from identified high-risk states. Many clinicians and private nursing homes also advised testing and sent patients to the NBMCH Screening clinic. Among the 19,020 admitted were 8,473, 44.5% were admitted, mostly in Isolation Wards 1. Moribund cases were shifted to RICU Wards.

| Subdivided 2020-21 | Symptomatic cases (n%) | Quarantine (n%) | Testing (n%) | Admission (n%) |
|--------------------|------------------------|----------------|--------------|---------------|
| March-August (n=41407) | 21240 (51.3%) | 18298 (44.2%) | 27169 (65.6%) | 12492 (20.7%) |
| September-February (n=19020) | 15241 (80.2%) | 6712 (35.3%) | 18121 (95.3%) | 8473 (44.5%) |
| Total (n=60427) | 36481 (60.4%) | 25010 (41.4%) | 45290 (35.2%) | 20965 (35.2%) |

Percentages depicted are row percentages (proportions). Caseload was very high till August. Testing was the major reason for patients attending the clinic, especially in the latter part of the year.
Data clearly reflects a manifold increase in testing after September. Admission rates are higher, whereas quarantine has gone down, possibly because of the opening of lockdown. It reflects a sea change in reasons for attending the clinic among patients. Inference on the decrease in the autonomy of serving doctors regarding testing may be drawn, although it needs to be explored further.

**SWOT analysis**

In-depth interviews of primary stakeholders of the clinic revealed Strengths as being able to operate round the clock with coordination among all tiers of health care workers. Logistics, customized directives, flexible hierarchy, routines and rosters in place, proactive support staffs, 24-hour supportive supervision from the Department of Medicine and Head of Department alongside the support of MSVP with designated In-charge were strengths identified. The Weakness identified was the clinic location beside the emergency, which created confusion among the community and the lack of a police outpost near the new structure. Night duty for females in times of lockdown was minimized. Opportunities were extrinsic. Support of local media, continuous mingling, provision of a full-time ambulance with a driver, support of district administration with identified quarantine centres and COVID hospitals were primary. Awareness regarding the functions of the clinic was clearly mandated. Behaviour of the clinic staff was welcoming and non-judgemental. Threats perceived were low as it was operating in a government institute. However, till the opening of the kiosk, queue discipline was difficult to maintain by external agency guards. It stood the threat of politely refusing COVID-positive patients and a few stray emergency cases. People taking it as a drop-in centre for availing testing anytime irrespective of the discretion of on-duty doctors was another threat.

**Discussion**

COVID-19 was an infodemic (WHO). Basic reproduction rate, asymptomatic transmission, quarantine became keywords and preventive health care strategies were the only cure. Novelty: In anticipation to segregate and implement preventive health care strategies, screening clinics came into being. It differed from fever clinics of elsewhere government setups due to the manpower, type of cases handled and working hours. Unlike fever clinics which ran from 9 am–4 pm, it was a full-time job. Separate Kiosk for testing started functioning from May 2020 with continued efforts of select seniors and it worked in close coordination with the clinic. Tests could be done at the discretion of serving doctors without harassing the patient. COVID positive and emergency cases, however, remained unaccounted.

As with most of the setups, a waxing waning phase was noted, with initial months witnessing a surge of cases between March and August 2020. About 300–350 visited every day. In the latter part, during September–October and then February 2021, the load decreased considerably. It was seen that initially, patients attended for quarantine advices, then testing, and few came for admission. However, later, most attendees came for testing alone [Table 1]. Table 2, citing reasons, reflects testing as the sole reason to attend the clinic, especially in the later part of the year.

Family physicians play a role in testing ans treating the cause. At a time when ‘specialised’ health care shut down completely, the actual reality of the health care system opened. They treated the index case and cured the entire family with preventive and promotive setups. Round-the-clock monitoring and emergency contact helped India survive the crisis and also realise how testing is mandatory, as is quarantine and isolation. Primary care physicians treated the cause and health educated the family about various dimensions of the disease. Such setups hence may be a new beginning of 24*7 setups, where family physicians can function in coordination and take care of the neighbouring communities providing support to the existing yet ailing three-tier public health care delivery system.

Referral from other health facilities to NBMCH and no refusal policy with free testing at kiosks increased the testing rates. Discretion of clinic doctors took a back seat while testing decisions, especially after September, as they were referred for testing by senior doctors or nursing homes. This is in contrast to other fever clinic work settings. Admission was smooth due to the continuous supervision of senior doctors in the clinic and hence many refused patients (due to covid status) reported at NBMCH.

**Summarizing**

Community though underprepared, remained not panicked in contrast to another study finding. Not one complaint was there and despite the hectic job, teamwork and dedication made the work worthwhile. Preventive health behaviour like wearing masks and using hand sanitizers though was maintained as was reinforced by clinic doctors repeatedly. This reiterates the change in understanding of community regarding the purpose of the clinic as well. The clinic stopped functioning from a separate building on 28th February 2021. Cases were on the decline, the index case and cured the entire family with preventive and promotive setups. Round-the-clock monitoring and emergency contact helped India survive the crisis and also realise how testing is mandatory, as is quarantine and isolation. Primary care physicians treated the cause and health educated the family about various dimensions of the disease. Such setups hence may be a new beginning of 24*7 setups, where family physicians can function in coordination and take care of the neighbouring communities providing support to the existing yet ailing three-tier public health care delivery system.

**Conclusion**

Notwithstanding limitations, COVID-19 Screening clinic stood the test of time. It catered to a vast majority of the population with variegated epidemiological profiles and socio-political sensibilities. Round-the-clock service functioned smoothly, facing minor glitches yet surviving owing to continuous monitoring and supportive supervision from select seniors, as SWOT analysis revealed. Patient load was very high in the first half of the year. The majority of respondents were symptomatic and got tested.
Trends and patterns of patient profile attending the clinic and reasons to attend reflect a major transition. Various factors may be associated. The novel endeavour was a success yet short-lived due to the ever-evolving circumstances around the pandemic.

**Limitation**

The study was single-handed and done for academic purposes only. No funds were available. Responses may have been guarded as all respondents were from the same institute. The interview was done in a natural setting. Records, in some cases, may have been overlooked given the huge data pool.

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**Conflicts of interest**

There are no conflicts of interest.

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### Table 2: Distribution of study subjects according to reasons for attending the clinic (Multiple response*)

| Reasons for attending clinic | March-August (n=41407) (n) | September-February (n=19020) (n) |
|-----------------------------|-----------------------------|---------------------------------|
| 1. Seeking information      | 21241 (51.3%)               | 4679 (24.6%)                    |
| 2. Seeking medicines        | 3892 (09.4%)                | 6505 (34.2%)                    |
| 3. Testing for travel       | 9813 (23.7%)                | 18487 (97.2%)                   |
| 4. Referred by others/self  | 13084 (31.6%)               | 18335 (96.4%)                   |
| 5. Admission/emergency     | 27908 (67.4%)               | 8768 (46.1%)                    |
| 6. Decreased availability/access to health services | 32380 (78.2%) | 10708 (56.3%) |

Responses were multiple and attending for testing purposes was the major cause, followed by decreased health care availability in the first half of the year.