

Short Communication

Primary care providers perspective on the strengths, challenges, opportunities, and threats of the integrated disease surveillance program in Puducherry

Durgesh Roy¹, Sivaranjani Kannusamy¹, Akshay Parambilankandi¹,
Ravivarman Lakshmiansamy², Srividya Vissvesaran³, Ragunathan Gurusamy³,
Mahalakshmy Thulasingam^{1*}, Sitanshu Sekhar Kar¹

¹Department of Preventive and Social Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

²Department of Health and Family Welfare, Puducherry, India

³IDSP, Department of Health and Family Welfare, Puducherry, India

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*Correspondence:

Dr. Mahalakshmy Thulasingam,

E-mail: maalakshmi.dr@gmail.com

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ABSTRACT

Integrated disease surveillance program (IDSP) is a decentralized district-based system of weekly surveillance for communicable diseases. Reviewing the existing system gives valuable insight into the surveillance system as we move toward a technology-enabled integrated health information portal (IHIP). Hence, this study explored the primary care provider's perspective on the strengths, challenges, opportunities, and threats (SCOT) of various components in IDSP, Puducherry. We conducted this qualitative study following a descriptive theoretical underpinning and included in-depth interviews of selected medical officers (MO) of primary health centers (PHCs) in Puducherry district. SCOT analysis was done by interviewing eight purposively selected MO working in the PHCs. It's a manual thematic analysis. The strength perspective is regular review, monitoring, good communication, capabilities of the IDSP unit, and Outbreak response. The challenges are offline data reporting and inadequate manpower. Opportunities are Intersectoral coordination. The perspective of threats is data quality and community participation.

Key words: Primary health care provider, Qualitative methods, Community participation, Review, Data quality, Outbreak response

INTRODUCTION

Integrated disease surveillance programme (IDSP) is a decentralized district-based system of weekly surveillance for communicable diseases established for timely and effective public health response to disease outbreaks.^{1,2} Quality in the data collection process, compilation, and analysis is essential and is primarily affected by technical, organizational, behavioral, and environmental factors.³ Studies have shown that the functioning of IDSP is continuously improving since its introduction.^{4,5} The

perspective of primary health care physicians about reporting under IDSP has not been well studied. Reviewing the existing system gives valuable insight into the surveillance system as we move toward a technology-enabled IHIP. IHIP is designed to capture real-time, case-based data, geographic information system enhanced data representation.⁶

Primary care physicians are crucial as first-level data collection supervisors and take active responsibility for timely data transmission and outbreak response. They are

actively involved in all functions of IDSP; hence, their perspective will give a better idea of the various components of the surveillance system, its challenges, threats, etc.

Therefore, this study explored the primary care provider's perspective on the SCOT of various components in IDSP, Puducherry. We have replaced the word weaknesses in SWOT analysis with challenges to bring a positive connotation so that it is reviewed for the actionable solutions.

METHODS

Study design and study setting

We conducted this qualitative study following a descriptive theoretical underpinning and included in-depth interviews of selected MO of PHCs in Puducherry district. It is the largest district of Puducherry union territory, with a population of around ten lakhs. In Puducherry, IDSP was started in 2006.

Timely reporting of S form (syndromic), P form (presumptive form), and L form (Laboratory form) is done. The reporting rate is more than 95%. All reports are verified and transmitted to the state surveillance unit and the center. In total, thirty-two PHCs are in Puducherry district.

Procedure

The study was conducted in 2019 after approval from the institutional ethics committee of JIPMER. The analysis was done by interviewing eight purposively selected MO working in the PHCs. They were interviewed using an interview guide. Confidentiality of participants was ensured.

An investigator with formal training in qualitative research conducted the interview. Each interview lasted for 30-45 minutes. Field notes were taken, and interviews were audio recorded. The interview was conducted in English, and verbatim transcription was performed on the same day to prevent the loss of information.

Ethical consideration

The study did not require approval by the institute ethics committee. Written informed consent was obtained from the study participants before enrolment into the study.

Analysis

A manual thematic analysis was done. Codes were generated inductively, further grouped into categories, and later into sub-themes such as strength, challenges, opportunity, and threats. The corresponding investigator reviewed the analyzed data to reduce the subjective interpretation.

RESULTS

The results were organized under the sub-themes SWOT of the implementation of IDSP in Puducherry (Table 1).

Strengths

Monthly reviews and daily meetings were reported as the major strength of the IDSP as they assisted in monitoring the performance, strengthening preparedness, and assessing the etiology of any identified outbreak. A participant commented:

"We are trying to identify the root cause of an increase in the number of specific diseases through monthly meetings" (MO with 19 years of experience).

Other strengths establishing a rapid response team with clear job descriptions, evidence-based early warning signs to raise alarm, and modification of micro plan according to severity of disease. Administrative support and healthy communication enhance surveillance performance.

"During the vector-borne disease outbreak, RRT played an important role in house-to-house sample collection and the collection of valid information," an MO with five years' experience commented.

"Once, there was an outbreak of food poisoning in Kirumabakkam during a temple festival. The action was initiated immediately, and we controlled the situation within three days with daily reporting and other activities." (MO with 2 ½ years' experience).

Challenges

The main hurdle in the reporting from the perspective of MO was offline reporting, as it decreased manpower efficiency and made it difficult to set up adequate time tracking. Due to the delay in forward transmission of the reports and missing data, timely analysis of the situation was challenging. Additionally, insufficient and undertrained staff impacted surveillance quality. Adding certain diseases to the district surveillance is also needed.

"Weekly offline data reporting creates an extra burden on manpower and budgetary allocation" (MO with 11 years of experience).

"There is a delay in day-to-day disease pattern analysis at district level occurs due to offline reporting of data." (MO with 24 years' experience).

"We are submitting the offline weekly report, so chances of duplication of data and losing the paper and lack of quick response" (MO with 19 years' experience).

"We have no scrub typhus in reporting format. It is the most common disease in my area" (MO with 11 years' experience).

Opportunities

Inter-departmental and inter-sectoral participation significantly helped the surveillance system during outbreaks. A good number of medical colleges with good infrastructure is an opportunity for a better surveillance system.

"We are getting the support for awareness from school students and NGO, NSS student from some college" (MO with 24 years' experience).

Threats

Poor cooperation from some facilities, fear of false alerts from the media, inadequate reporting of the population to the PHC, and possible stigma and ostracism by people during the outbreak investigation are the main threats to the IDSP performance.

"Sometimes the community did not support to identify the cause of the outbreak. Lack of trust was seen" (MO with 11 years' experience).

Table 1: SCOT related to IDSP in Puducherry from the perspective of the primary care providers.

Categories	Codes
Sub-theme: strength	
Administration	Regular review meetings with all cadre of healthcare workers Daily monitoring of reports at all levels of healthcare Good communication channel
Capabilities of the IDSP unit	Capacity building based on the surge of cases Comprehensive reporting format Detailed action plan and comprehensive surveillance strategy
Outbreak response	Cooperation by frontline workers for outbreak response Trained to identify early warning signals Trained rapid response team Higher level of alertness in the health system
Sub-theme: challenges	
Reporting and analysis	Offline data reporting Limited real-time tracking Delayed visits by patients to the healthcare facility Lack of data analysis
Manpower and facilities	Inadequate manpower for reporting and implementation of IDSP Some existing manpower are untrained Lack of diagnostic kits at the primary healthcare level
Sub-theme: opportunities	
Intersectoral coordination	Cooperation of other sectors such as the municipality, public works department, and NSS students Better lab facilities in medical colleges High number of medical colleges
Sub-theme: threats	
Data quality	Poor quality data due to poor cooperation by some facilities
Community participation	Ostracism during outbreak investigation Fear of false alerts by the media Poor reporting to the PHC

DISCUSSION

The regular supervision through the review meetings, the capabilities of the IDSP unit, and timely outbreak response were the strengths of the IDSP at Puducherry. Utilizing data for action positively changes the data collectors' attitude, improving data quality.³ Hence, importance has to be given to act on the surveillance data and provide feedback on the action taken. Our study's MO also suggested that support functions such as capacity building and communication should be strengthened in addition to the core functions. Studies have identified that in integrated disease surveillance,

support functions are often weak, leading to sub-optimal performance of core functions such as detection, registration, confirmation, reporting, and data analysis.^{4,7} Induction training alone is insufficient; regular orientation is essential to update the newer guidelines and cater to newly appointed or transferred persons.

The non-availability of a real-time line list of cases, mainly due to weekly offline data reporting, hampers timely data analysis and action. The joint monitoring mission report of IDSP 2015 also supports similar results related to offline data reporting.⁸ The successful implementation of the IHIP, which emphasizes case-

based surveillance and daily reporting, will lead to quicker outbreak response.

Though manpower and infrastructure availability are limited in some PHCs, intradepartmental coordination of small-area coverage leads to better coverage and reporting in Puducherry. Administrative support in outbreak conditions envisaged the work efficiency of health workers and the indicator-based performance of EWS (in 2018, it was 79%, and in 2018, it was 99%), with year-by-year improvements.⁸

In our study, the medical officer reported the importance of IEC activity and community engagement in the surveillance activity. The community's role is crucial for reporting the communicable disease to the health centers and during outbreak response. The current surveillance system largely relies on reporting from the government sector. Hence, as identified in our study, good communication between health workers and the general population strengthens the two-way information exchange, and health workers can access valid and reliable data for public health surveillance.

India's cultural diversity produces varied responses regarding communities' acceptability for control and prevention, as seen during the COVID-19 pandemic. During the outbreak response, stigmatization and discrimination of the index case and their family are noted.⁹ The media coverage further amplifies this. Effective communication between the community and healthcare workers is crucial for strengthening the community's trust in the public health system. It will support the outbreak response effort, and building trust during an outbreak is challenging. Hence, the training should include maintaining privacy during the outbreak investigation. If confidentiality is breached, the community may not report to PHC, fearing stigmatization. Another factor is the porous interstate borders, making screening the person before disease transmission in that neighboring area difficult. However, inter-sectoral coordination and surveillance of diseases trying to control these threat points will help.

The limitation of our study was restricting the views of only government MO. The opinions of private care providers and grassroots-level workers were not included. However, this study has several programmatic implications and has identified key areas that require strengthening for adequate reporting. These issues have to be strengthened along with the implementation of IHIP.

CONCLUSION

This study has found that digitalization of upgradation in reporting format, early warning sign preparedness, efficient rapid response team, good community participation, health education, building the community's

trust, and continued staff training are essential for a sound surveillance system.

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