INTERNSHIP TRAINING

AT

JHPIEGO, BHOPAL

DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)

BY

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PG/19/049

UNDER THE GUIDANCE OF

Dr. ANANDHI RAMACHANDRAN

POST GRADUATE DIPLOMA IN HOSPITAL AND HEALTH MANAGEMENT

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INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT AND RESEARCH, NEW DELHI

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Nainsy Kumari** student of PGDM (Health IT Management) from International Institute of Health Management Research, New Delhi has undergone internship training at **Jhpiego, Bhopal** from **1st 2021 to 31st May 2021.**

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I wish her all success in all his future endeavors.

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DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)

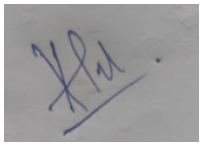
and having successfully completed her Project on

Date: 31st May , 2021

JHPIEGO, BHOPAL

She comes across as a committed, sincere & diligent person, who has a strong drive & zeal for learning

We wish her all the best for future endeavors.



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Certificate of Approval

The following dissertation titled

"DEVELOPMENT AND ADVANCEMNT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)"

at

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is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Health IT Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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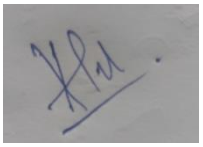
This is to certify that **Miss. Nainsy Kumari,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. She is submitting this dissertation titled "DEVELOPMENT AND ADVANCEMENT OF D IGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP) " at **JHPIEGO, BHOPAL** in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge. No part of it has been reproduced from any other dissertation, monograph, report or book.



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FEEDBACK FORM

Name of the Student: Nainsy kumari

Dissertation Organisation: JHPIEGO, Bhopal

Area of Dissertation: DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP) at JHPIEGO 'BHOPAL'

Attendance: 100%

Objectives achieved:

1. Understanding the level of awareness among people about the improvement of Integrated Health Information system.
2. Understanding how digital health has a strong impact on Disease surveillance system of India.

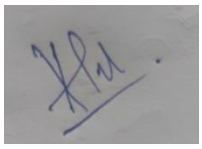
Deliverables:

1. Presentation for the development and advancement of digital health through IHIP.
2. Excel dashboard for the analysis for IHIP intervention.

Strengths: Nainsy kumari is a hardworking individual and has a keen eye for attention to detail. In a short span of time she could understand the project and thereafter took forward the study.

Suggestions for Improvement: She needs to work upon improving his presentation skills.

Suggestions for Institute (course curriculum, industry interaction, placement, alumni): The students should be instructed on proposal writing and drafting official documents and GIS .



Signature of the Organization Mentor (Dissertation)

Date: 28.06.2021
Place:Bhopal

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "**DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP) at JHPIEGO 'BHOPAL**" and submitted by **NAINSY KUMARI**, Enrollment No. **PG/19/049** under the supervision of **Dr. ANANDHI RAMACHANDRAN** for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from **01st April, 2016** to **30th May, 2016** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Nainsy Kumari
PG/19/049
PGDHM (2019-21) - Health IT

DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)

ABSTRACT

Key Words: IHIP, IDSP, MoHFW, WHO, Digital Health, HIS, Implementation, Barriers, Challenges.

Digital Health in India alludes to the devices and administrations utilized for well-being administrations with the assistance of information and communication technologies, including the prevention, diagnosis, treatment, monitoring and management of diseases. Ongoing drives in Digital Health being executed by MoHFW include: Reproductive Child Healthcare (RCH); Integrated Disease Surveillance Program (IDSP); Integrated Health Information System (IHIP); e-Hospital, e-Shushrut, Electronic Vaccine Intelligence Network (eVIN); Central Government Health Scheme (CGHS); Integrated Health Information Platform (IHIP); National Health Portal (NHP); National Identification Number (NIN); Online Registration System (ORS); Mera Aspatal (Patient Feedback System); Health Management Information System (HMIS); and National Medical College Network (NMCN). IHIP gives the Health Information System(HIS) development for real time, case - based information, integrated analytic, etc. It maintain the data entry and management for India,s disease surveillance program (IDSP)., India needs a comprehensive information system to monitor emerging and emerging public health threats, disasters and mass events. This is a Descriptive based study. Measures includes telephonic interviews, observations, facts, statistics, MoHFW & WHO guidelines. Search terms include combinations of Integrated Disease Surveillance Program+Integrated Health Information Platform+ testing+ challenges+ regulations+ growth+ global learning.Use of IHIP to describe and analyze geographic variations in diseases in the context of demographic, environmental, behavioral, socioeconomic, genetic, and infectious risk factors, current scenario of the Disease surveillance, key challenges expected to restrain the growth of IHIP implementation, need for proper regulations of IHIP are explored and discussed.

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First and foremost, I would like to thank The Almighty GOD whose grace makes all the things possible.

I would like to take the opportunity to devote my thanks and express deep sense of gratitude to my mentor **Dr. Anandhi Ramachandran(Associate Prof. IIHMR, Delhi),** organization mentor **Dr Md. Afzal (Team Lead IHIP, Jhpiego)** and my senior and guide **Dr. Jyoti Benawri (State team head NISTHA- Jhpiego).** I am greatly indebted to them for providing their valuable guidance, advice, constructive suggestions, positive and supportive attitude and continuous encouragement, without which it would have not been possible to complete the project.

I owe my whole hearten thanks and appreciation to the entire **Jhpiego team**.

Last but not least I am extremely grateful to my **family and friends** for their encouragement and support and preparing me for my future, without which I would have not attained all that I have so far.

I hope that I can build upon the experience and knowledge that I have gained and make a valuable contribution towards community in coming future.My Institute - **International Institute of Health Management Research (IIHMR), Delhi** deserves the foremost appreciation for providing me the opportunities to understand my capabilities.

Nainsy
PG/19/049
Health IT Management

CONTENTS

ABBREVIATIONS

IHIP	Integrated Health Information Platform
IDSP	Integrated Disease Surveillance Platform
DSO	District Surveillance Officer
RCH	Reproductive Child Healthcare
Evin	Electronic Vaccine Intelligence Network
CGHS	Central Government Health Scheme
NHP	National Health Portal
NIN	National Identification Number
ORS	Online Registration System
HMIS	Health Management Information System
NMCN	National Medical College Network
HIS	Health Information System
MoHFW	Ministry of Health and Family Welfare
WHO	World Health Organization
SSU	State Surveillance Unit
DSU	District Surveillance Unit
CSU	Central Surveillance Unit
RRT	Rapid Response Team
EHR	Electronic Health Records
FETP	Field Epidemiology Training Programme
PHC	Primary Health Centers
CHC	Community Health Centers
JMM	Joint Monitoring Mission

CCHF	Crimean-Congo haemorrhagic fever
JE	Japanese encephalitis
WCO	World Health Organization Country Office
NCDC	National Centre for Disease Control
CDC	Centers for Disease Control
ARI	Acute respiratory infection

ABOUT THE ORGANIZATION

JHPIEGO

Jhpiego is a nonprofit organization for international health affiliated with Johns Hopkins University.[2] The group was founded in 1973 and initially called the Johns Hopkins Program for International Education in Gynecology and Obstetrics, but is now referred to simply as Jhpiego (pronounced "ja-pie-go").

Mission

Jhpiego creates and delivers trans-formative health care solutions that save lives. In partnership with national governments, health experts and local communities, Jhpiego builds health providers' skills and develops systems that save lives now and guarantee healthier futures for women and their families.

Vision

Self-reliant countries, healthy families and resilient communities. All women and families, regardless of where they live, having equitable access to high-quality, lifesaving health care delivered by competent and caring providers.

History

Responding to the Changing Needs of Women and Families Worldwide

Since its founding in 1974, Jhpiego has been innovating to save the lives of women and families worldwide. From the first day, Jhpiego has been asking the question: How can we make lifesaving services available and accessible to the people who need them—all over the world?

Dr. Theodore M. King, an early innovator and champion for women's health, was the moving force behind the founding of Jhpiego, an affiliate of Johns Hopkins University. In the early 1970s, King recognized the need to make physicians, nurses and administrators from developing countries aware of reproductive health breakthroughs, such as laparoscopy (a procedure used to inspect internal reproductive organs for infertility or to provide contraception by closing off the Fallopian tubes) and modern contraceptives. Originally known as the Johns Hopkins Program for International Education in Gynecology and Obstetrics, the organization was funded through the United States Agency for International Development (USAID). Under King's leadership, as a founder, trustee and later president of Jhpiego for 14 years, the organization conducted a steady stream of programs throughout the developing world.

How Did Jhpiego Get from There to Here?

Early on, Jhpiego established itself as a leader in reproductive health training. Beginning in 1974, Jhpiego held training sessions on family planning/reproductive health for doctors and nurses in the USA In 1979, Jhpiego started its first in-country training programs in Tunisia, Brazil, Kenya, Nigeria, Thailand and the Philippines. From 1987 through 2004, Jhpiego conducted three global Training in Reproductive

Health Projects, funded by USAID. Beginning in 1993, Jhpiego published learning materials on long-acting family planning methods.

Over the years—to respond more effectively to the needs of individual countries—Jhpiego became increasingly field-based and established its first field office in Kenya in 1993. Today, Jhpiego has field offices in more than 30 countries worldwide. Similarly, Jhpiego's programming areas have expanded to meet changing needs in the field. In addition to family planning and reproductive health, Jhpiego now has expertise in maternal and child health, infection prevention and control, HIV/AIDS and infectious diseases.

Jhpiego work has also expanded to address reproductive health policy and guidelines and to support health systems strengthening. For example, in 1996 in Brazil, Jhpiego launched a performance and quality improvement approach, now known as Standards-Based Management and Recognition (SBM-R), which has since been implemented in 30 countries. SBM-R empowers health workers and facilities to improve the performance and quality of their services by providing them with the tools and methods they need to make decisions, solve problems and innovate at the local level.

Innovations in Training Methods and Technologies

In 1986, Jhpiego pioneered a competency-based training (CBT) approach that emphasizes learning by doing. CBT focuses on how the participant performs and promotes the trainer's ability to encourage learning. Jhpiego also introduced the use of anatomic models for "humanistic training." To minimize risk to clients, learners first practice on models until they achieve competency. In 1995, a clinical training skills manual—the cornerstone of Jhpiego's training approach—was published. Using a systematic "training of trainers" approach, Jhpiego has created a global network of qualified physician, nurse and midwife trainers.

As early as 1984, Jhpiego collaborated with the University of the West Indies to deliver reproductive health courses, via satellite, to six islands in the Caribbean. In 1987, Jhpiego sponsored a global meeting on reproductive health education and technology with the World Health Organization (WHO) and introduced computer-assisted instruction to simulate clinical situations in several of its US-based courses. In 1995, Repro-line, an online source for reproductive health information, was launched. Today, Jhpiego continues to explore new learning technologies: mobile phones in Afghanistan, a computer-based learning management system in Ethiopia, computer-based training in Ghana, a distance learning program in Zambia.

Practical Solutions for Low-Resource Settings

Since the 1992 publication of its international reference standard Infection Prevention for Family Planning Service Programs, Jhpiego has been at the forefront in promoting evidence-based practices that can protect health care professionals, staff and clients from potentially life-threatening infections. To this end, Jhpiego has tested and introduced practical, low-cost infection prevention procedures that can be implemented effectively in settings with limited resources.

In developing countries, cervical cancer remains the leading cause of cancer deaths among women. In 1995, Jhpiego began research with the University of Zimbabwe to find a low-cost alternative to the Pap test that could make cervical cancer prevention a reality in low-resource settings. Based on the results of this research, Jhpiego helped form the Alliance for Cervical Cancer Prevention in 1999 and received funding from the Bill & Melinda Gates Foundation to expand its cervical cancer program. Since that time, Jhpiego has developed and piloted the single visit approach in which women are screened and treated during the same visit.

In 1995, Jhpiego began addressing HIV/AIDS and its integration with family planning services. Six years later, Jhpiego began work in HIV voluntary counseling and testing with a USAID-funded project in Jamaica. In 2002, Jhpiego received its first funding from the U.S. Centers for Disease Control and Prevention (CDC) for work in HIV/AIDS and, the following year, developed a global learning package on prevention of mother-to-child transmission of HIV—with CDC, WHO and university partners—to enable global scale-up. Also in 2003, Jhpiego began work on male circumcision for HIV prevention in Zambia. In 2008, Jhpiego developed a global learning package on male circumcision for HIV prevention with WHO and UNAIDS.

The Way Forward

Jhpiego's role in maternal and child health has expanded dramatically over the years, increasing its emphasis on nurses and midwives as primary care providers. From 1998 through the present, Jhpiego has led four of USAID's global flagship programs: the MNH Program, the ACCESS Program, followed by the Maternal and Child Health Integrated Program (MCHIP)—all of which focused on maternal and newborn health—and the Maternal and Child Survival Program (MCSP), an expanded initiative that introduced and supported high-impact, sustainable reproductive, maternal, newborn and child health interventions in 25 high-priority countries in partnership with ministries of health and other partners.

Jhpiego's dedicated teams of technical experts—in the areas of global learning; family planning/reproductive health/cervical cancer; maternal, newborn and child health; monitoring, evaluation and research; health systems strengthening; HIV/AIDS and infectious diseases; publications; and knowledge management—are renewing their efforts to pursue and disseminate practical, low-cost innovations that can make significant contributions to the health of women and their families.

As Jhpiego moves forward, its staff will continue to respond to changing needs in the field, and they will continue to ask: How can we save more lives?

Global Reach

Since Jhpiego's inception, our work to save lives and improve health has reached people in more than 150 countries worldwide. Currently, we have active programs in more than 35 countries across the globe.

Strengthening health systems and improving public health since 2003.

- Jhpiego contributed to **more than a doubling of the total health workforce in the public sector**—from 106,991 in 2012 to 222,728 in 2018—thereby bringing preventive health and care and treatment services to many more Ethiopians.
- More than **200,000 women delivered their babies with a skilled attendant** at Jhpiego-supported health care facilities.
- An **innovative, onsite approach to training health care workers in postpartum family planning was introduced** to reduce interruptions at health care facilities; as a result, services at maternity wards are not disrupted by staff absences, and clients receive better care.
- In Gambella Region, more than **100,000 adolescent and adult males received safe, high-quality voluntary medical male circumcision services**, thereby benefiting from this procedure's protective benefit against HIV.

Since the 1980s, working to save lives and improve health for the most vulnerable.

- Through its **emergency response for COVID-19**, the Jhpiego-led NISHTHA project has built the capacity of 49,105 primary-level health care workers on COVID-19 management, **supporting more than 41 million individuals in facing the pandemic**. The project also helped mobilize resources worth $409,088 for support the country's fight against the pandemic.

Over the past six years, Jhpiego has supported the Government of India to **save the lives of an estimated 86,000 children and 10,000 women** through improved contraceptive services. **Averting an estimated 16.9** million unintended pregnancies and 10 million abortions saved an estimated US$ 579 million in direct health care spending.1

Through its collaboration with the public and private sectors, Jhpiego helped ensure that competent health care workers provided high-quality childbirth services for more than 2.8 million deliveries across the country.

Through its comprehensive primary health care strengthening programs, Jhpiego has provided technical assistance in establishing over 26,900 Health and Wellness Centers across 14 states of India. These centers cater to a population of 326 million, bringing comprehensive primary health care nearer to their homes.

Reaching Impact, Saturation and Epidemic Control

RISE is a five-year global project funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the U.S. Agency for International Development (USAID). RISE works with countries to achieve a shared vision of attaining and maintaining epidemic control, with stronger local partners capable of managing and achieving results through sustainable, self-reliant and resilient health systems by 2024. RISE's contributions to this work will lead to fewer new HIV infections, decreased HIV-related morbidity and mortality, and increased quality of life for people living with HIV. With USAID PEPFAR investments, RISE supports countries to achieve and maintain epidemic control by providing strategic technical assistance and direct service delivery to improve HIV prevention, case finding, treatment programming, and viral load suppression. The primary objectives of the RISE project are to:

1) attain and maintain HIV epidemic control among at-risk adult men, women and priority populations;
2) attain and maintain HIV epidemic control among key populations;
3) strengthen health systems including improved program management, health information systems, human resources for health and financial systems to ensure attainment and maintenance of epidemic control; and
4) support the transition of direct funding and implementation to capable local partners to meet the PEPFAR goal of 70% of funding to local partners by 2020.

The project is led by Jhpiego with the following partners: ICAP at Columbia University, Management Sciences for Health, Anova, BAO Systems, Johns Hopkins University Center for Public Health and Human Rights, and Mann Global Health.
RISE is currently active in several countries, including Ukraine.
In Ukraine, RISE provides technical assistance and ongoing capacity building support to strengthen HIV testing services, working in close partnership with USAID-Ukraine, HealthLink and the 100% Life project to optimize provision of these services at facility and community levels. RISE is providing technical assistance focused on optimizing facility and community index testing services, use of risk referral networks and expansion of HIV self-testing services.
Current program areas
In its early years, Jhpiego was recognized as an expert in reproductive health and family planning.[3] As the organization has grown and become more field-based, its programming areas have grown and expanded. Jhpiego's primary program areas are:

- Maternal, newborn, and child health
- Family planning and reproductive health
- HIV/AIDS prevention and care
- Infection prevention and control
- Malaria prevention and treatment
- Cervical cancer prevention and treatment
- Tuberculosis (TB)
- Urban and community health
- Education and training
- Innovations

Jhpiego’s global health experts live and work in more than 40 countries, sharing 45 years of organizational knowledge and field experience to improve the quality of health services for women and families.

DISSERTATION REPORT

DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)

INTRODUCTION

Integrated Disease Surveillance Project (IDSP) was launched by Hon'ble Union Minister of Health & Family Welfare in November 2004 for a period up-to March 2010. The project was restructured and extended up to March 2012. The project continues in the 12th Plan with domestic budget as Integrated Disease Surveillance Programme under NHM for all States with Budgetary allocation of 640 Cr. A Central Surveillance Unit (CSU) at Delhi, State Surveillance Units (SSU) at all State/UT head quarters and District Surveillance Units (DSU) at all Districts in the country have been established.(1)

Its objective is To strengthen/maintain decentralized laboratory based IT enabled disease surveillance system for epidemic prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Team (RRTs).(6)

Programme Components includes Integration and decentralization of surveillance activities through establishment of surveillance units at Centre, State and District level, Human Resource Development – Training of State Surveillance Officers, District Surveillance Officers, Rapid Response Team and other Medical and Paramedical staff on principles of disease surveillance, Use of Information Communication Technology for collection, collation, compilation, analysis and dissemination of data, Strengthening of public health laboratories and Inter sect-oral Co-ordination for zoonotic diseases.(4)

Under IDSP data is collected on epidemic prone diseases on weekly basis (Monday–Sunday). The information is collected on three specified reporting formats, namely "S" (suspected cases), "P" (presumptive cases) and "L" (laboratory confirmed cases) filled by Health Workers, Clinicians and Laboratory staff respectively. The weekly data gives information on the disease trends and seasonality of diseases.(4)

Whenever there is a rising trend of illnesses in any area, it is investigated by the Rapid Response Teams (RRT) to diagnose and control the outbreak. Data analysis and actions are being undertaken by respective State/District Surveillance Units. In the month of June 2016, about 94% Districts have reported weekly disease surveillance data from districts.(8)

IHIP is the next generation highly streamlined version of the Integrated Disease Surveillance Program (IDSP) currently in use. Among the nations, India is the first country to adopt this advanced disease surveillance system. It will accommodate the data entry and management of the Indian Disease Surveillance Program. In addition to tracking the current 33 diseases (compared to the previous 18 diseases), it should also ensure that near real-time data is provided digitally. It is also the world's largest online disease monitoring platform. Synchronize with the National Digital Health Mission.

The new version of IHIP will house data entry and management for India"s disease surveillance program. In addition to tracking 33 diseases now, as compared to the earlier 18 diseases, it shall ensure near-real-time data in digital mode, having done away with the paper-mode of working. Terming this as the world's biggest online disease surveillance platform, it is in sync with the National Digital Health Mission and fully compatible with the other digital information systems presently being used in India. The refined IHIP will help in a big way in real-time data collection, aggregation, and further analysis of data that will aid and enable evidence-based policymaking. IHIP will provide a health information system developed for real-time, case-based information, integrated analytics, advanced visualisation capability. It will provide analysed reports on mobile or other electronic devices, the ministry said[(9)].

Moreover, outbreak investigation activities can be initiated and monitored electronically. It can easily be integrated with another ongoing surveillance programme while having the feature of the addition of special surveillance modules. such an advanced digital platform for scouting the earliest signs of disease spread in the smallest of villages and blocks in the country will immensely help in nipping in the bud any potential outbreak or epidemic.[(16)]

"Accurate, reliable, and timely information is crucial for a country such as India which has a population of 1.35 billion,"this refined digital surveillance platform will help in providing and connecting data and in moving towards a "one-health" approach.. IHIP is an information platform that integrates data from various “registries” to provide real-time information on health surveillance from all across India for decision-makers to take action. All data contained in IHIP has the public health surveillance attributes: Person, Place, Time and all data has geocoded for geographic reference. The design and development of this platform found are attributed to the strengthening of India’s Public Health Surveillance System.[(16)]

IHIP is needed as a part of IHR core capacity building and to strengthen public health surveillance system, India needs a comprehensive information system to monitor emerging and emerging public health threats, disasters and mass events.It provides the Union health ministry, State health ministries, local governments, municipalities to real time information on health surveillance from anywhere on any electronic device.The IHIP platform will provide the ability to describe and analyze geographic variations in diseases in the context of demographic, environmental, behavioral, socioeconomic, genetic, and infectious risk factors interpret geographic correlations of persons with their socioeconomic and demographics attributes,conduct public health surveillance in the context of “ One Health”.[(13)]

OBJECTIVE OF THE STUDY

GENERAL OBJECTIVE:
To assess the status of IHIP & IDSP among the population of Madhya Pradesh.

SPECIFIC OBJECTIVES:

- To identify the process of IHIP enabling the creation of standards compliant Electronic Health Records (EHRs) of the citizens on a pan-India basis.
- To provide recommendations for the adoption of IHIP
- To assess the development of Health Information System (Digital Health) through Integrated Health Information Platform.
- Review the relevance of the list of priority diseases for surveillance under IDSP.

LITERATURE REVIEW

Deepak K. Raut & Anil K. Bhola in their study 'Integrated Disease Surveillance in India: A way forward' published in Global journal of Medicine and public Health shows a systematic literature review through Pub-med and Google Scholar databases and published reports of the IDSP, that attempts to describe the progress and projects future directions for integrated disease surveillance.The study found that availability of trained technical human resources at district and state levels is essential to run the surveillance on sustainable basis.The wide gap on availability of technical professionals at district and state levels indicates towards strengthening and consolidating human resources in the IDSP through regular periodic training and more recruitment.

A cross sectional study published in March 2020 titled, "Physicians' practices related to disease surveillance activities under the Integrated Disease Surveillance Program (IDSP)in Bihar"conducted between January and April 2019 to assess the practices of physicians (attached to public health facilities) reporting to the IDSP in Bihar. In total, 253 consenting physicians from all 92 public health facilities in Begusarai, Darbhanga and Bhojpur districts in Bihar, who were involved with IDSP reporting, were interviewed. As a result major gaps in communicable disease surveillance activities, operational logistics, outbreak detection and response capacity were identified in all the three studied districts. IDSP-related training among physicians seemed inadequate. Regular training, orientation, particularly of AYUSH doctors and simplified method of reporting are likely to improve surveillance and outbreak-linked performances of the physicians reporting under IDSP in Bihar.

Ratnendra R. Shinde1 , Ravindra S. Kembhavi, Jitesh S. Kuwatada, Tarun S. Khandednath in their cross sectional descriptive study showed that nearly 98% PMPs felt importance of notification in health system, but only 46% had practiced it. Most common reason for non-reporting was lack of information about reporting system. The convenient way of reporting for PMPs was to report to the nearest health post personally or to District Surveillance Unit through SMS/phone call and both at weekly interval.

'Tracking the implementation to identify gaps in integrated disease surveillance program in a block of district jhajjar (haryana)', a cross-sectional study carried out in the area under Community Health Center Digital which is the rural field practice area attached to Post Graduate Institute of Medical Sciences, Rohtak in the State of Haryana, India. 24 sub-centers in the area were visited and 46 health workers (22 male; 24 female) who met the inclusion criteria i.e. who had completed 1 year of their service or had been trained for IDSP, were included in the study. Data were collected on a self-designed, semi-structured and pre-tested schedule by interviewing the study subjects and observation of the records/reports. The study concluded that Only 14/46 (~30%) of the workers could expand the abbreviation "IDSP" correctly. Only 4/46 (~9%) workers could narrate any of the trigger events and none could tell all the trigger events. Only at 12 such sub-centers, diagnoses were being written in their out-patient registers according to the defined syndromes. 43/46 (~93%) workers were not aware of the zero reporting.

METHODOLOGY

Research Design-
This is a descriptive study based on primary and secondary data both.

Study Duration-
2 months (April 2021- May 2021)

Target Sample-
ANMs, Pharmacists, Lab Technicians and Medical Officers of 15 districts of Madhya Pradesh.

Sample Size- 233

Initially the questionnaire was administered to 450 individuals out of which 273 participants agreed to participant in the study as many of the people were not available for the telephonic conversations. After excluding 40 respondents based on their awareness about the IHIP the sample size was taken as 233 .

Inclusion criteria-

- ✧ Analysis of IHIP portal for 3 months.
- ✧ Geographical Location - India (mostly focused on Madhya Pradesh, Bihar).
- ✧ Contact person - Asha Workers, ANMs, Medical Officers, Pharmacists, Lab technicians, Epidemiologists, Data Managers and Health surveillance employees who are working with state IDSP under Integrated Health Information Platform.
- ✧ The respondents were the users who were interested to cooperate. To collect data telephonic conversations were conducted with me.

Exclusion Criteria- Health Workers who were not aware about the IHIP platform.

Study population- Participants were selected on the basis of inclusion and exclusion criteria after taking the informed consent.

Study tool for data collection and to measure outcome: questionnaire on Reporting on IHIP Platform.

** see annexure 1 attached below

Study analysis type- Descriptive analysis

Study procedure-

A questionnaire based descriptive study was conducted among Health workers who are working with state IDSP or on IHIP platform in Madhya Pradesh in April to May 2021. Workers who were not aware about this program or have never worked on Madhya Pradesh IHIP platform were not been considered. The questionnaire was administered through Telephonic conversations and field visits, to those who gave

consent to participate in the study. The respondents were briefed about the questionnaire and the study objective. A total of 233 responses were received out of which 40 were excluded from the study.

Ethical consideration-

Informed and voluntary consent was taken from the participants. Participants were allowed to leave the survey anytime. Questions related to respondents' Identity were not included in the questionnaire to ensure the anonymity.

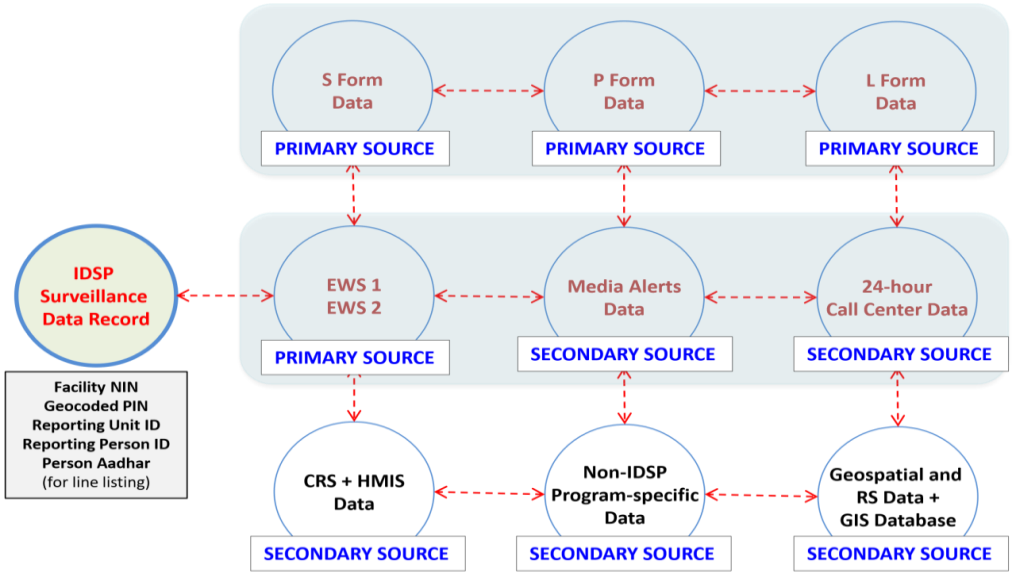
FINDINGS

Under IDSP data are collected on epidemic prone diseases on weekly basis (Monday–Sunday). The information is collected on three specified reporting formats, namely "S" (suspected cases), "P" (presumptive cases) and "L" (laboratory confirmed cases) filled by Health Workers, Clinicians and Laboratory staff respectively. The weekly data gives information on the trends and seasonality of diseases. Whenever there is a rising trend of illnesses in any area, it is investigated by the Rapid Response Team (RRT) to diagnose and control the outbreak. (6)

Data analysis and actions are being undertaken by respective State/District Surveillance Units. Emphasis is now being laid on reporting of surveillance data from major hospitals. 95% districts in the country report weekly surveillance data on epidemic prone diseases through e-mail or portal in 2021. (10)

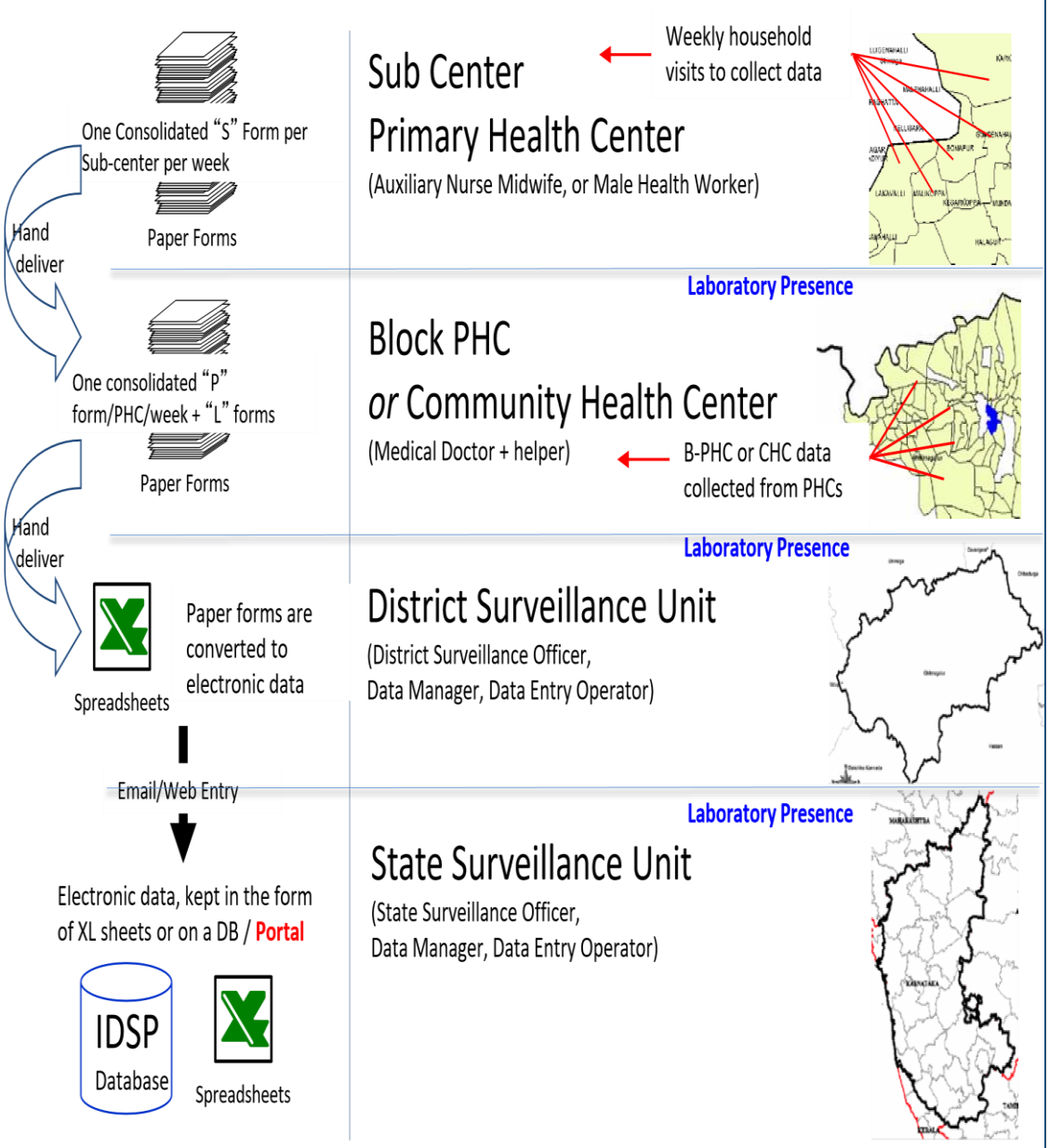
State Surveillance Officers of IDSP of all States are already sensitized & oriented on IHIP IT platform in a National Review Meeting of IDSP. (10)

 Districts in the state have initiated reporting on IHIP for which monitoring & follow up was started from, IDSP. (17)



*Based on IDSP Surveillance Standards and Minimum Data Set

1



VILLAGE (655075)	SUBDISTRICT (6267)	DISTRICT (707)	STATE(UTs) (36)

IDSP DATA COLLECTION PROCESS AT STATE LEVEI

[1] https://www.idsp.nic.in/WriteReadData/IHIP/IHIP%20Manual-Final.pdf

On an average almost 34.39% of districts are reporting on 'S''P' and 'L' forms respectively for the reporting cycle of March to June 2021. While the maximum percentage of districts reporting on 'P' form in 3 months was 88.40% that for 'L' form was 87.85 % and for 'S' form was 77.13% in the same reporting span. .

A synopsis of districts reporting on 'S''P'&'L' forms is tabulated below

DISTRICS	S Form		P Form		L Form	
	March2021	June2021	March2021	June2021	March2021	June2021
Anuppur	12.15	19.14	67.86	67.86	10.71	14.29
Rewa	21.5	43.3	46.67	88.4	72.89	87.85
Satna	24.7	57.5	36.3	43.1	26.3	43.1
Shahdol	1.2	18.28	14.5	10.41	14.5	10.41
Sidhi	4	8.63	0.27	0.55	0.27	0.55
Singhrauli	7.04	11.4	0	0	0	0
Umaria	29.03	37.9	57.14	59.8	47.64	59.3
Balaghat	20.04	23.89	13.33	20.04	13.32	22.22
Chhindwara	47.73	77.13	39.19	46.12	40.44	45
Dindori	3.8	18.11	7	20.12	7	20.12
Jabalpur	16.16	66.21	0	42.77	0	40.32
Katni	19.78	53.55	12.08	50	12	50
Mandla	0	15.17	2.1	39.01	2	39.01
Narsinghpur	11.54	69.1	7.99	46.49	4.53	49.99
Seoni	0	1.11	0	10.37	0	0

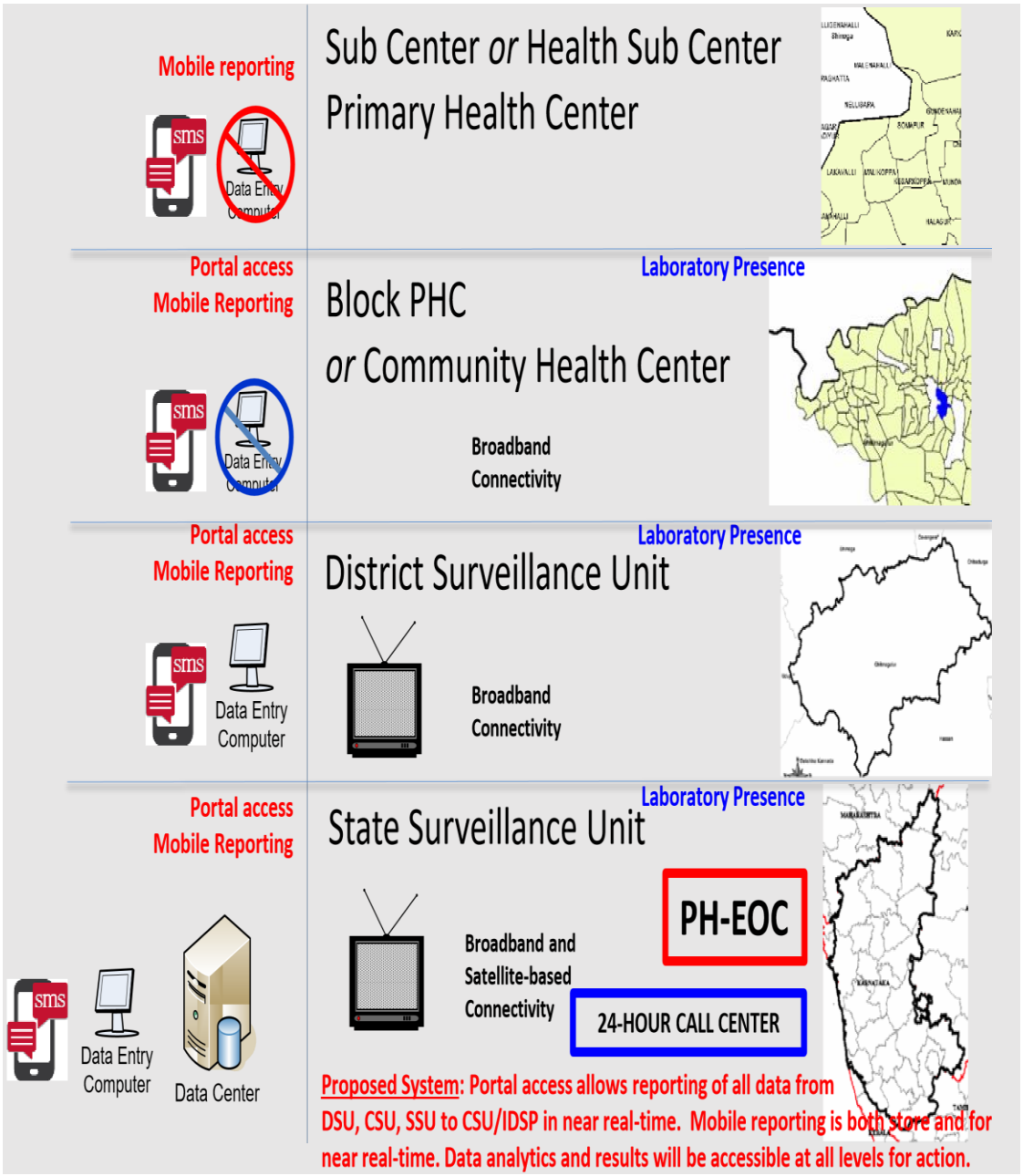
Issues:

While the project has indeed made significant improvement in both consistency and timeliness of reporting, there is a long way to go to meet the targets set for reporting. A lot of efforts needs to be made at the CSU, SSU and DSU levels to ensure collation and transmission of daily/weekly OPD data from major hospitals and medical colleges.

Agreed actions:

SSU to follow up closely on the collection and transmission of out-patients data in Medical colleges and major hospitals.

Never reporting on portal districts from fifteen priority districts to be reduced by half by December, 2021.



VILLAGE	SUBDISTRICT	DISTRICT	STATE(UTs)
(655075)	(6267)	(707)	(36)

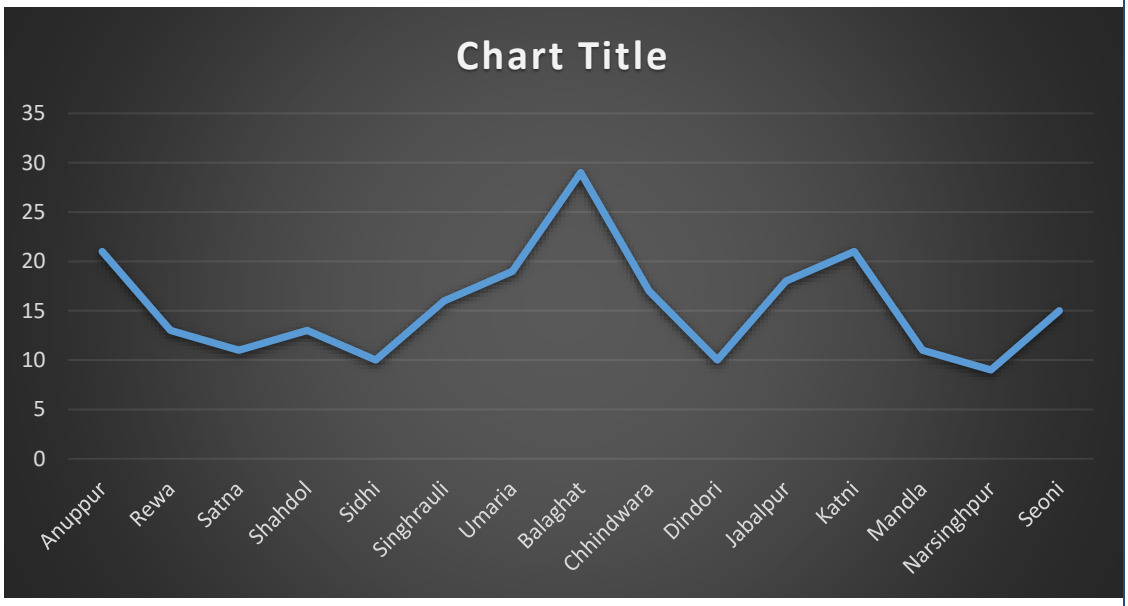
IDSP,S ACCESS TO ICT INFRASTRUCTURE AT STATE LEVEL

https://www.idsp.nic.in/WriteReadData/IHIP/IHIP%20Manual-Final.pdf

There were total 273 respondents in our study (40were excluded). They were categorized according to their demographic characteristics and awareness about the IHIP program.

The data is shown in the following chart.

CHART: Distribution according to the District participation based on the interaction.



Above figure shows the participation of health workers district wise. It was evaluated on the basis of attendance of call, answering the queries and interaction done in feild visit.

CHART: Distribution according to the designation of participants in IHIP Platform.

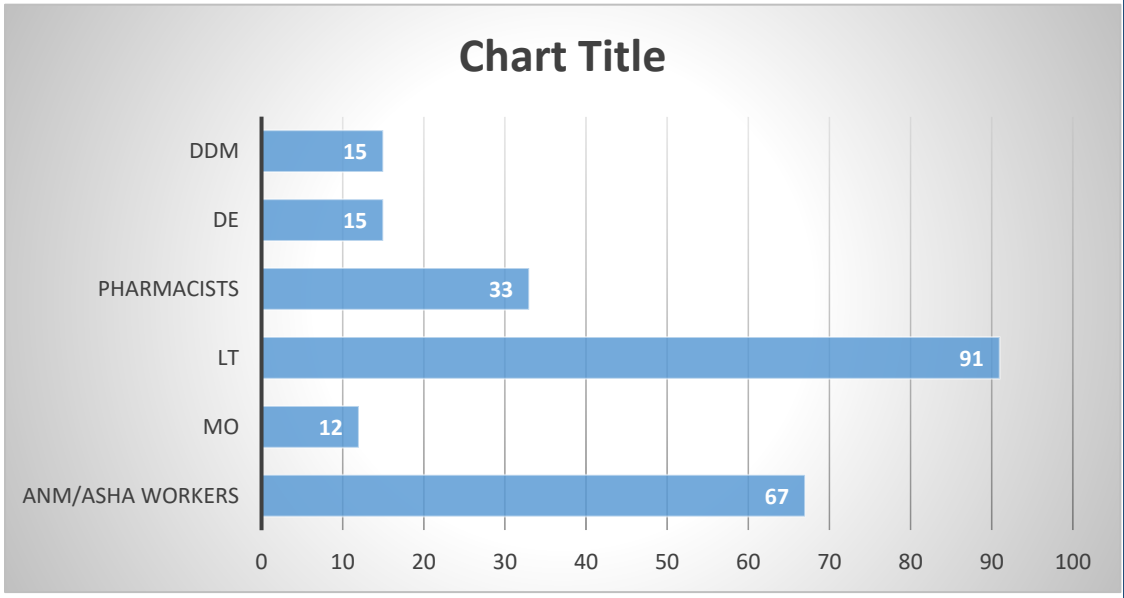


Chart shows that most of the participants with whom we interacted the most were the Lab Technicians (LT) and ANMs. They proposed the difficulties they were facing in reporting on the IHIP platform.
Medical Officers (MO), DE and DDM also proposed some corrections in the list of diseases and syndromes , that how it helps during any outbreak or event alert.

List of Diseases/syndromes under Integrated Disease Surveillance Project in India
1. Acute Diarrhoea Diseases (Cholera, Shigella, Rota virus, Acute Gastroenteritis)
2. Acute Respiratory Infections (Pneumonia)/Influenza Like Illness (ILI)
3. Fever of Unknown Origin (PUO)
4.Enteric Fever
5. Meningitis
6. Malaria
7. Dengue/DHF/DSS
8. Chikungunya
9. Viral Hepatitis
10. Acute Flaccid Paralysis
11. Diphtheria
12. Measles
13. Pertusis
14. Chicken Pox
15. Plague
16. Japanese encephalitis
17. Yellow Fever
18. Leptospirosis
19. Any other state-specific disease
20. Unusual syndrome
There are 33+ disease and syndromes present on the platform.
The implementation of Form-S is intended to uncover the burden of infectious diseases and detect early warning signals for outbreaks based on syndromic reporting right from the population level. There has been problems of inconsistency, incompleteness and untimely reporting, thus its implementation needs improvement10. The data in Form-P depends on the outdoor patients registers of clinicians or medical officers. The entry about provisional diagnosis in these registers is sometimes either not complete or not even legible in case it is complete. It hints towards need of raising awareness and understanding among the health professionals engaged in medical care about the scope and significance of accurately generating, documenting, compiling and reporting data on health events or diseases. Despite simplified symptom-based case definitions at sub-centre levels, there are instances of confusion about the case definitions.
Although about 35% of the districts report every week (including mandatory Nil reporting) through email or IDSP portal but the quality of data compiled at district levels still need rigorous monitoring and capacity building.10 Capturing of data from private sector clinicians is still patchy. The epidemiological data compiled were neither fully analyzed nor utilized at district level for guiding interventions despite presence of epidemiologist but rather were forwarded to higher levels. The processed data and reports should be used to guide public health interventions which is still lacking at state and district levels.

RECOMMENDATIONS

- ✓ There should be a national core list of diseases with state specific amendments
- ✓ Acute respiratory infection (ARI) and influenza-like illness (ILI) need to be segregated
- ✓ "Fever of unknown origin" to be replaced with "fever" more than 7 days duration
- ✓ Acute diarrhoeal diseases to be written as "excluding cholera" Rickettsial disease, acute febrile illness (AFI) filariasis, leishmaniasis, poisoning, burns, road accidents, snake bite, dog bite and West Nile Fever should be included in the IDSP disease list Small pox to be removed from the IDSP disease list
- ✓ Death can be recorded in Presumptive Surveillance Form (P Form) Viral hepatitis B & C maybe included in Laboratory Surveillance Form (L Form)
- ✓ Reduce duplication of data collection
- ✓ Reduce number of diseases in P Form
- ✓ Forms require streamlining
- ✓ As disease priority differs from state to state, regional priority should be given importance

.

a) Re-prioritization of diseases in L Form
b) Line lists to be generated directly from computerized systems/Health Information System (HIS)
c) On-site data entry to prevent delays in reporting
d) Cross notification of positive results tested in labs to get accurate geographical disease trends
e) Trends to be generated from line list data, not absolute numbers Analysis of line list at all levels for outbreak detection
f) laboratory, district and state level 15
g) For data captured through vertical programme, avoid duplicate data collection under IDSP establish IT enabled mechanisms to extract data needed for disease surveillance under IDSP, e.g. vaccine preventable diseases (VPDs) and Vector Borne Diseases.
h) Unique Identity (UID) for each patient to avoid the same case being captured more than once in the data.

Proposed plan for upgradation of IDSP portal:

- ✓ Adoption of frameworks and standards to strengthen the HIS under IDSP
- ✓ Compliance to integrate e-governance standards in master data
- ✓ Revamping of IDSP portal to develop a GIS enabled software application, mobile technology for real time data collection and integration of SMS gateway and automated e-mail alerts
- ✓ Introducing basic and advanced web analytical features in the portal
- ✓ Redesigning of portal output, development of dashboard for real time visualization of data
- ✓ Decentralization of data entry up to health facility level
- ✓ Development of offline data entry module

CONCLUSION

IHIP needs to update the following components for all diseases that are prioritized through the consultative process: case definitions; type of surveillance to be implemented for each prioritized disease; and minimum data sets and data collection standards for each prioritized disease. It also needs to make all relevant changes to the reporting forms to reflect the amendments.

 IDSP may advice all districts to conduct similar re-prioritization exercises to include diseases of importance at the state level.

 IHIP platform and information management need to be upgraded to conform to the current standards. A comprehensive ICT and Information Management Master Plan document needs to be developed and maintained. The ICT Master Plan component needs to clearly define the computer network architecture (including the data layer and application layer) while the information management document must contain all aspects of data management, including data privacy and confidentiality.

 Two-level information architecture needs to be considered for disease surveillance management. Architecture should exclusively address the data and information exchange needs at the and give a clear articulation of the revised IDSP portal as well as the needs of Strategic Health Operations Centre. Architecture should address the data and information exchange. Near real-time data collection approaches as well as advanced data analytic and visualization techniques must be considered as part of the architecture. A comprehensive Operational Document has to be developed to implement the aforementioned Master Plan with clearly articulated timelines, roles and responsibilities.

 Manage the IDSP data and information systems without interruption. Data sharing agreements need to be put in place between various parties, including state and local government levels and the private sector and all data sharing agreements must be updated.

IDSP needs to identify all relevant disease surveillance aggregate data from specialized disease surveillance programme for potential inclusion under a common integrated disease surveillance dashboard that is administered by IDSP.

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ANNEXURE

**Annexure 1

DEVELOPMENT AND ADVANCEMENT OF DIGITAL HEALTH THROUGH INTEGRATED HEALH INFORMATION PLATFORM (IHIP)

consent

* Required

The purpose of this study is to estimate the development of digital health through implementation of Integrated Health Information Platform. Your participation in this study is voluntary and you may withdraw anytime you feel uncomfortable with the questions asked in the form. Your participation will involve providing information to the questions in this form. The information collected will be kept confidential. Any identifiable information about you will be kept strictly confidential. By clicking on " I hereby give my consent" you agree to participate in the study. *

I hereby give my consent

1)

DISTRICT *

Your answer

2)DESIGNATION*:

3)Occupation *

ANM
MO
LT
PHARMACIST
DE
DDM
Other:

4)TYPE OF FORM *

S/P/L

5)NO. OF REPORTED DISEASE IN LAST 7 DAYS*

6)TRAINING STATUS (IHIP PLATFORM) *

TRAINED
NOT TRAINED

7) PROFILE ENTRY STATUS *

DONE/NOT DONE

8)HAVE YOU INTERNET CONNECTION *

9)HAVE YOU ACCESSED THE APPLICATION *

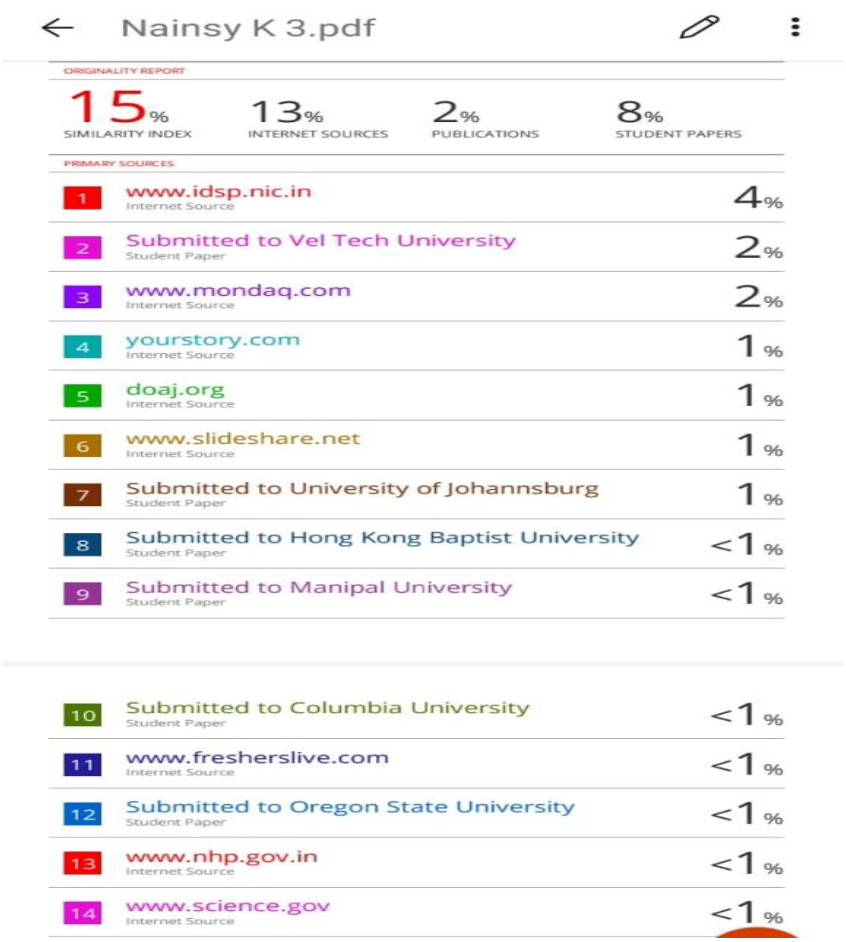
10)HOW MANY FACILITIES IN YUR DISTRICT IS REPORTING DAILY?*

11)HOW BLOCKS ARE NEVER REPORTING ON IHIP PLATFORM? *

12)ISSUES FACED IN REPORTING ON s/P/l FORM *

13)ARE YOU SATISFIED WITH THE RESOLUTION?*

14)WHAT ARE YOUR VIEWS ABOUT THE IHIP PLATFORM?*



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