1. INTRODUCTION

A communicable disease monitoring system serves two key functions

1. Early warning of potential threats to public health
2. Programme monitoring functions which may be disease specific or multi-disease in nature

**Definition of Monitoring**: Monitoring is ongoing systematic, collection, collation, analysis, and interpretation of health data; and dissemination of information to those who need to know in order that action is taken, in order to promote health and prevent disease.

Monitoring is continuous process of collection of Information for Action. The potential advantages of monitoring include:

1. It provides good quality, reliable data for decision-making and for development of effective public health policy to control and prevent communicable diseases in the population.
2. It is an essential tool for evidence-based public health decision-making and for monitoring of the success of public health interventions. It therefore provides information for evidence-based health care.
3. Monitoring is an effective tool for health advocacy.
4. It guides in optimum allocation of health resources.

A Communicable Disease Monitoring System would help in assessing prevalence of communicable disease, establishing risk factors among various populations; monitoring trends in population health behaviors and risk factors for chronic disease over time determine the need for chronic disease prevention and control programs and help prioritize the allocation of health resources. It would guide the planning and evaluation of prevention and control program, Improve prevention and control programs by advancing clinical, epidemiological and health services research, provides a comprehensive database for public awareness, consumer input, and collective actions to improve the public health.

The ultimate aim is to contain and reduce the emerging epidemic of chronic communicable disease through development and implementation of effective monitoring mechanisms.

CDMS is a computerized implementation, to enter data, generate reports and perform queries. The reports will be in the form of tables, graphs and maps. Using data that indicates spatial distributions of cases, CDMS software can assist public health officials to identify the location of an outbreak. It also includes forum and complaint session which helps the user to complaint and these complaints can be forwarded to concerned officials by the admin. It has the feature of disease diagnosis.

**1.1 IDENTIFICATION OF NEED**

Provision of health care services to the population at district level is a set of integrated activities. Some of these activities are part of categorical programmes for disease control; others reflect a response to common individual health needs. All should be planned, monitored and evaluated. The responsibility for planning, monitoring and evaluation; for ensuring regular supplies and staff training; and for adequate functioning of the system to serve the needs of the community and reduce the burden of disease monitoring which falls on the district health management team.

The district team responsibilities have different weight for individual care - given by public and private health providers and for public health interventions to improve the health of the community, which are mainly provided by the public system. These public health interventions deal mainly with infectious diseases, which represent a risk of epidemic or endemic transmission and with common causes of disease and death such as dehydration and pneumonia in young children. The interventions must be effective, accessible to the community (particularly the poorest sectors of the population), efficient and affordable for the community to ensure sustainability. The district team must select the pertinent interventions and ensure resources, quality of delivery, coverage and health impact.

To carry out these functions the team must collect and analyze standard data and use indicators of process, quality and outcome. Some categorical programmes dealing with tuberculosis, leprosy, immunisation, and control of diarrhoeal and respiratory diseases in children have developed very detailed data collection and monitoring systems, which are applied in many countries. However, those systems are specific for each disease control programme and at district level may, depending on the organisation of the health system, result in duplication of administrative work, large number of forms to be filled and difficulties to evaluate the performance of primary health care (PHC) as a whole.

A core group of indicators, useful to evaluate the integrated PHC services and including indicators for triggering action are essential for the district team to function effectively. According to needs and capacity of the district level other indicators could be added. The core would be also useful for planners during health sector reform, to ensure that the reform process does not result in deterioration of the public health interventions addressing the priority health problems of the country or district.

**3. SYSTEM ANALYSIS**

**2.1 EXISTING SYSTEM**

The existing system [1] provides only a district level entry to the database. The problem is that for a big district, it is also become quite difficult to collect the data form different parts of the district such that they can give the details to the government in time. There is no forum and complaint session for the users to interact with the admin. Also, there is no disease diagnosis.

**2.3 PROBLEM STATEMENT**

**2.4 PROPOSED SYSTEM**

CDMS is a computerized implementation, to enter data, generate reports and perform queries. The reports will be in the form of tables, graphs and maps. It is an online version of a web application. It has provision for online data entry and some useful advance reports can also be viewed through this application. The data entry can be done in hospital level. The details of a patient are entered to the system through any agents in the hospital. The project included activities such as evaluation of surveillance and Early Warning Systems (EWS), GIS or Health maps. Using data that indicates spatial distributions of cases, CDMS software can assist public health officials to identify the location of an outbreak. It also includes forum and complaint session which helps the user to complaint and these complaints can be forwarded to concerned officials by the admin. CDMS also adds disease diagnosis feature.

**9. SYSTEM DESIGN**

9.7 DATABASE DESIGN

A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general way is to make information accessing easy, quick, inexpensive and flexible for the user. In the database design several objectives are considered controlling redundancy, ease of learning and use, data dependence, more information at low cost, accuracy and integrity are some of them.

In this phase, information from the ER-diagram is used to design the database. The entities in the ER-diagram represent the table that have to be created and the attributes represent the fields that are in each table.

9.8 INPUT DESIGN

It is the process of converting a user oriented description of the input to a computer based system into a programmer oriented specification .Here in this system we collect input from user, proper validation checks are performed in the input page to check whether the user had not left the required field blank or incorrect data has been placed if so, message will be generated by the system. The system uses the following pages as input pages.

Administrator

1. Admin Login Page
2. Change Password Page
3. Agent Signup Page
4. Communicable Disease Page
5. Pathogens Page
6. Preventive Measures Page
7. Disease Preventive Measures Page
8. District Page
9. Area Page
10. Living Environment Page
11. Occupation Page
12. Mode of Transmission Page
13. Disease Mode of Transmission Page
14. Agent Page
15. Alert Page
16. Forum Answer Page
17. View Complaint List Page
18. View Complaint Page
19. Forward Complaints
20. Disease Entry Page
21. Symptom Entry Page
22. Symptom Category Page
23. Disease Symptom Category Page

User/Agent

1. Agent Login Page
2. Change Password Page
3. Forum
4. Complaints
5. Diagnosis
6. Patient Details
7. Patient Details Entry

The descriptions of the above pages are as follows:

1. Admin Login Page

This page accepts admin name and password

2. Change Password Page

Allows the administrator to change his/her password

3. Agent Signup Page

This page is meant for the registration purpose of the agent. It collects all the details about the agent such as name, email id etc. A unique username is accepted from the customer for identification.

4. Communicable Disease Page

It displays all communicable diseases on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source.

5. Pathogens Page

This page displays all the pathogens with its corresponding communicable disease on a grid view. It uses sql data source for listing out the diseases in a drop down list. It allows the administrator to make modifications such as adding, editing and deleting the details by using object data source.

6. Preventive Measures Page

This page displays all the preventive measures on a grid view. It allows the administrator to make modifications such as adding, editing and deleting the details by using an object data source.

7. Disease Preventive Measures Page

This page displays all the preventive measures to be adopted for the corresponding communicable disease on a grid view. It uses sql data source for listing out the diseases and preventive measures in drop down lists. It allows the administrator to make modifications such as adding, editing and deleting the details by using an object data source.

8. District Page

This page displays district names on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source.

1. Area Page

It displays the areas with its corresponding district on a grid view. It uses sql data source for listing out the districts in a drop down list. It allows the administrator to make modifications such as adding, editing and deleting the details by using object data source.

1. Living Environment Page

It displays living environment of the patients on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source.

1. Occupation Page

It displays occupation of the patients on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source.

1. Mode of Transmission Page

It displays mode of transmission of diseases on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source.

1. Disease Mode of Transmission Page

It displays mode of transmissions along with its corresponding communicable disease on a grid view. It uses sql data source for listing out the diseases and mode of transmissions in drop down lists. It allows the administrator to make modifications such as adding, editing and deleting the details by using an object data source.

1. Agent Page

It displays agent name and details on a grid view and the administrator can make modifications like adding, editing and deleting the details by using object data source. Administrator can block and unblock agents.

1. **Alert Page**

It displays the alerts for disease outbreaks along with its date of posting on a grid view. It allows the administrator to make modifications such as adding, editing and deleting the details by using an object data source.

1. Forum Answer Page

It displays the questions posted by users along with its date of posting. It allows the administrator to submit answer for the corresponding question. It also allows the administrator to omit irrelevant questions by using an object data source.

1. View Complaint List Page

It displays complaints from the users, date of posting, user name and the status of action taken.

1. View Complaint Page

This page allows the administrator to view the complainer’s details and the corresponding complaint.

1. Forward Complaints

This page allow administrator to forward the complaint viewed in “view complaint page” to corresponding agents in that area.

1. Agent Login Page

This allows the agent to log on to the system.

1. Change Password Page

It allows the agent to change his/her password.

1. Forum

It allows all the users to post questions, complaints and suggestions. The users can view the administrator’s reply to the post.

1. Complaints

It allows visitors and agents to post complaints.

1. Diagnosis

It gives a vague idea about the disease when a user enters the disease symptoms

1. Patient Details

It displays patient name and details on a grid view which have been entered by an agent.

1. Patient Details Entry

It allows the agent to enter patient details and also allows the agent to make modifications like editing and deleting by using object data source.

27. Disease Entry Page

It allows admin to enter disease names and to make modifications.

28. Symptom Entry Page

It allows admin to enter symptoms.

29. Symptom Category Page

It displays the symptoms with its corresponding symptom category on a grid view. It uses sql data source for listing out the symptom in a drop down list. It allows the administrator to make modifications such as adding, editing and deleting the details by using object data source.

30. Disease Symptom Category Page

It displays disease and its corresponding symptom, and symptom category.

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