

I am happy to share that Information Technology enabled health and demographic surveillance system (HDSS) is ready to implement in rural and urban areas under our university. The title of the project is “**Kutumba Aarogya Sarvekshana Hagu Rakshana Yojane to establish IT platform and develop health and demographic surveillance system for continuity of care**”.

## **What is HDSS?**

HDSS is a method of comprehensive data collection focusing on population of a defined geographical area. Initial survey followed by repeated follow-up at defined intervals to the family and special groups.

## **What is being done traditionally by community medicine department?**

One of the critical functions of department of community medicine in medical colleges of India is to identify health needs and health problems of community (Community Diagnosis) and plan and implement need - based health interventions (Community Treatment).

This demands collection of information on demographic profile, health problems, socio-cultural factors, environmental factors, health service and health programs utilization and availability and accessibility to health care services.

Paramedical staff under rural and urban health training centres under department of community medicine undertakes family health survey by periodic house to house visits and document the details as family-wise folders.

**There are several challenges in the current method of paper-pen based family health survey. This includes**

- a) Incomplete data, poor coverage, error in data collection,
- b) Absence of surveillance component,
- c) More of reproductive and child health, communicable diseases and less of non-communicable diseases,
- d) Lack of resources for converting the paper based data into electronic format,
- e) Inability to address the relational data,
- f) Difficulty in monitoring and validating the home visits by field staff.
- g) Also due to paper based data it is difficult to map the disease (Geo-mapping), health conditions with respect to time, place and persons.

## **What was done to overcome these limitations?**

Information technology enabled HDSS was developed

## **How it works?**

1. **Field workers capture the data using smart phone in electronic format with respect to following**
  - a) Family details, demographic profile, a) environmental, nutritional assessment, health care utilization, etc

- b) Every individual in the family will be enrolled and information regarding health status and health needs.
- c) **NCD risk assessment:** - All adults more than 30 years will be assessed for NCD risk factors which include oral, breast and cervical cancers. Risk assessment will be done as per NPCDCS program (Non communicable disease program of GOI). All individuals with diabetes and hypertension will also be assessed twice a year.
- d) **Pregnancy program:** - All antenatal and postnatal mothers database and follow up visits as per government program guidelines.
- e) **Under Five children:** - Growth monitoring, Immunization coverage and health status
- f) **Fever survey:** - Periodic survey of fever cases
- g) **Influenza like illness:** - Periodic survey of influenza like illness
- h) **Geographical Information System:** - Geo Mapping of families/individuals with specific health conditions and problems.
- i) **Continuity of care:** - All families will be given a Yen Arogya Card (social security scheme provided by our hospital). As and when the problem is identified by the field staff or reported by the individuals all services will be made available to them through outreach health centres/ nearest health facilities and Yenepoya medical college hospital.

#### Salient features of the IT enabled HDSS:-

1. **Decision support mechanism:** - At the end of enrolment of the individuals and at after completing the data capture at every visit it generates summary report highlighting the risk factors and health related alerts. Which will empower the field staff to make decisions regarding referral and appropriate health advise
2. **Scheduling of visit :-** As a part of HDSS all the families and individuals will be visited once a year, adults more than 30 years and individuals with HT and DM will be visited twice a year, antenatal, postnatal mothers and under five children will be visited as per the health program guidelines. This IT platform will schedule the visits of the families and individuals as per the requirements.
3. **Dashboard:** - Will enable to navigate into a particular program and start capturing the data. Dashboard will show the scheduled and overdue visits.
4. **Report generation:** - We have developed this program such a way that it will generate several reports for decision making and appropriate health interventions.
5. **Longitudinal data:** - This platform will help to manage the longitudinal data. We can study the trends over a period of time. It provides line listing of data. We can manage, view and download several indicators with respect to all study area or any defined area under study for defined duration.

The programs developed by us with technology support from Samnway foundation (Household (family), Individual, NCD risk factors, Diabetes & Hypertension, Pregnancy Program and under five children) as a part of this HDSS can be made available to other institutes by signing a MoU with our university at some cost.

ATTESTED



Dr. Gangadhara Somayaji K S  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.



**Department of Community Medicine  
Yenepoya Medical College  
Yenepoya  
(Deemed to be University)**



*Invites you to*  
**GO LIVE Programme of**

**Health and Demographic Surveillance System (HDSS)  
(Kutumba Aarogya Sarvekshana Hagu Rakshana Yojane)**

**4th January 2021 | Time: 12 noon - 1.00 pm**

**Technology Partner: Samanvay Research and  
Development Foundation, Bengaluru**



Google Meet <https://meet.google.com/hsk-exwh-aur>

**OUR TEAM**



**Dr Abhay S Nirgude**  
Associate Dean YMC, Professor  
Dept. of Community Medicine

**Dr Poonam R Naik**  
Professor and HOD  
Dept. of Community Medicine

**ATTESTED**

**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 015, Karnataka.

## Dignitaries Gracing the Occasion



**Mr. Yenepoya Abdulla Kunhi**  
Chancellor  
Yenepoya  
(Deemed to be University)



**Mr. Farhaad Yenepoya**  
Pro Chancellor  
Yenepoya  
(Deemed to be University)



**Dr. M Vijayakumar**  
Vice Chancellor  
Yenepoya  
(Deemed to be University)



**Dr. Sripathi Rao**  
Pro Vice Chancellor  
Yenepoya  
(Deemed to be University)



**Dr. Gangadhar Somayaji**  
Registrar  
Yenepoya  
(Deemed to be University)



**Dr. M S Moosabba**  
Principal / Dean  
Yenepoya Medical College



**Rtn. PHF Mr. Jathin Attavar**  
Immediate Past President  
Rotary Club, Mangaluru  
**CHIEF GUEST**



**Dr. Sanjay Shahri**  
Senior Consultant in  
Emergency Medicine  
& Critical Care  
Unity Hospital  
**GUEST OF HONOUR**



**Mr. Arjun Khandelwal**  
Avni Product Lead  
Cofounder  
Samanvay Foundation

**ATTESTED**

**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Board, Deralakatte  
12, Yenepoya Road, Mangaluru, Karnataka.

## What is HDSS?

HDSS is a method of comprehensive data collection focusing on population of a defined geographical area. Initial survey followed by repeated follow-up at defined intervals to the family and special groups.

### SALIENT FEATURES OF THE INFORMATION TECHNOLOGY ENABLED HDSS



- 1 Moving from survey to surveillance
- 2 Longitudinal Data



- 3 Pen-paper based to paper less data capture
- 4 Electronic Health Records of the families



- 5 Household and individual program

- 6 Non communicable diseases surveillance- Diabetes, Hypertension, Breast, Oral and Cervical Cancers, etc



ATTESTED  


Dr. Gangadhara Somayaji K S  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.

## SALIENT FEATURES OF THE INFORMATION TECHNOLOGY ENABLED HDSS

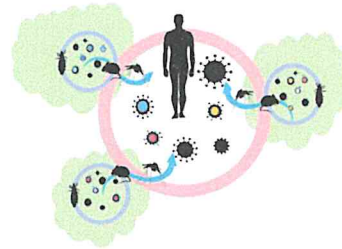


7

Maternal and child health-  
Pregnant & Lactating mothers,  
Under five children

8

Infectious disease surveillance-  
Influenza Like illness, Tuberculosis,  
Malaria, Dengue, etc



9

Report generation

10

Decision support system

11

Health alerts

12

Scheduling of visits

13

Dashboard features



14


Geo Mapping of diseases  
& health conditions

15

Continuity of care through Rural  
and Urban Health centers and YMCH



ATTESTED

  
Dr. Gangadhara Somayaji KS  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Dasalakkatte  
Mangalore 575 018, Karnataka.

# PROGRAM SCHEDULE

4th January 2021 12 noon – 1.00 pm

EVENTS	TIME	DETAILS
Prayer	3 minutes	
Welcome Address	3 minutes	<b>Dr. Poonam R Naik</b> Professor and Head Dept. of Community Medicine Yenepoya Medical College
Brief overview of HDSS	3 minutes	<b>Dr. Abhay Nirgude</b> Associate Dean YMC Professor, Dept. of Community Medicine Deputy Director, Yenepoya Centre for Faculty Development Yenepoya (Deemed to be University)
Brief overview of Information Technology platform used for HDSS.	3 minutes	<b>Mr. Arjun Khandelwal</b> Avni, Product Lead. Co-founder, Samanvay Foundation
Introduction of Chief guest and Guest of Honour	3 minutes	<b>Dr. Pracheth R</b> Associate Professor Dept. of Community Medicine.
Address by the Guest of honour	3 minutes	<b>Dr. Sanjay Shahri</b> Senior Consultant in Emergency Medicine & Critical Care Unity Hospital
Inaugural Address	5-10 minutes	<b>Dr. M. Vijayakumar</b> Vice Chancellor Yenepoya (Deemed to be University)
E Launch of HDSS	5 minutes	<b>Mr Farhaad Yenepoya</b> Pro Chancellor, Yenepoya (Deemed to be University)
Presidential Address	10 minutes	<b>Mr. Yenepoya Abdulla Kunhi</b> Chancellor of Yenepoya (Deemed to be University)
Vote of Thanks	3 minutes	<b>Dr. Akshaya K M</b> Additional Professor, Department of Community Medicine Yenepoya Medical College

**ATTESTED**  
  
**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
Mangalore 575 015, Karnataka.



**YENEPOYA**  
[DEEMED TO BE UNIVERSITY]  
Recognized under Sec 3(A) of the UGC Act 1956  
Accredited by NAAC with 'A' Grade

**MORE DETAILS AVAILABLE AT:**

**Yenepoya (Deemed to be University)**

<https://www.yenepoya.edu.in>

**Yenepoya Medical College**

<https://ymc.yenepoya.edu.in>

**Department of community Medicine**

<https://ymc.yenepoya.edu.in/departments/community-medicine>

Contact Us: - **hdsscom@yenepoya.edu.in**

**COORDINATORS**

**Dr. Navya N**, Assistant Professor, Department of Community Medicine

**Dr. Pavithra H**, Tutor, Department of Community Medicine

**ATTESTED**  
*ls*

**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.



**Department of Community Medicine,  
Yenepoya Medical College,  
Yenepoya (deemed to be University), Mangaluru  
&  
Samanvay Research & Development Foundation, Bengaluru**

**Webinar Topic: "Fundamentals of Establishing Technology Enabled Health &  
Demographic Surveillance System (HDSS)"**

**Date: 30<sup>th</sup> July, 2020**

**Time: 02:00 to 3:30 p.m.**



**ATTESTED**  


**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.



**Resource persons:**



**Dr M Vijayakumar, Vice Chancellor,  
Yenepoya (Deemed to be University)**



**Dr Abhay Nirgude, Associate Dean,  
Professor and Deputy Director,  
Centre for Health Professions Education**

**ATTESTED**  
*te*



**Dr Poonam Naik, Professor and Head,  
Deputy Director RHCDC**



**Mr. Arjun Khandelwal  
Product Lead Avni,  
Co-founder Samanvay Foundation**



**Ms. Garima Dosar  
Lead Analyst,  
Samanvay Foundation**



**Dr Akshaya KM, Additional Professor,  
Rural Health Training Centre In-Charge,  
NSS Program Officer**



**Dr Navya. N, Assistant Professor**



**Dr Pracheth R, Associate Professor  
Urban Health Training Centre In-charge  
NSS Program Officer**



**Dr Pavithra H, Senior Resident**

**ATTESTED**  


**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.

Topic	Duration (Minutes)	Resource persons
<b>Opening remarks</b>	5	Dr M Vijayakumar, Vice Chancellor, Yenepoya (Deemed to be University)
<b>What is health demographic surveillance system and its relevance in medical college setting?</b>	10	Dr Poonam Naik, Professor and Head, Deputy Director RHDCD
<b>How EDC tools and IT platform boost/amplify the benefits of HDSS?</b>  <b>Pre-requisite for development of HDSS</b>	20	Dr Pracheth R, Associate Professor and Urban Health Training Centre In-charge, NSS Program Officer  Dr Pavithra H, Senior Resident
<b>Steps in development of HDSS:-</b> - Household & Individual Survey - NCD Program - Mother & Child Health Program	20	Dr Abhay Nirgude, Associate Dean, Professor and Deputy Director, Centre for Health Professions Education  Dr Navya N, Assistant Professor
<b>From Technology based HDSS to clinical trials and longitudinal studies</b>	10	Dr Akshaya KM, Additional Professor, Rural Health Training Centre In-Charge, NSS Program Officer
<b>Demonstration of IT platform (Avni) developed for technology enabled HDSS</b>	20	Mr Arjun Khandelwal, Samanvay Foundation  Garima Dosar, Samanvay Foundation
<b>Question Answer session</b>	10	All resource persons

ATTESTED

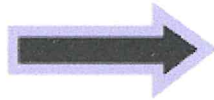


**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.

## Who can join?

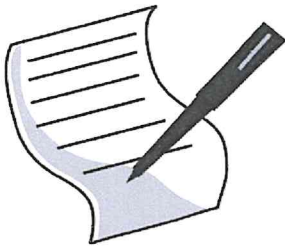
Epidemiologists, faculty and postgraduates from Departments of Community Medicine and Public Health.

## Salient features of the webinar

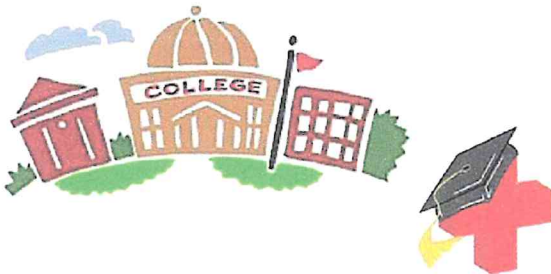


**SURVEILLANCE**

**1. Moving from survey to surveillance**



**2. Pen-paper based to paper less data capture**



**3. Utility in medical college settings**

**ATTESTED**  


**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.

**4. Steps in establishing the IT platform**



**5. Household and individual survey**

**6. Non communicable diseases surveillance**

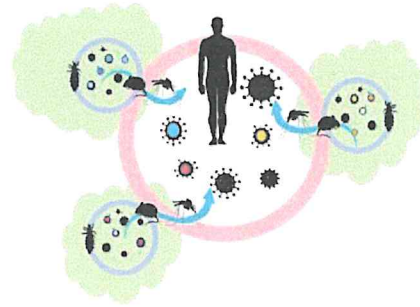


**7. Maternal and child health**

**ATTESTED**

**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Derlakatte  
Mangalore 575 018, Karnataka.

## 8. Infectious disease surveillance



## 9. Report generation

HDSS is a method of comprehensive data collection focusing on the population of a defined geographical area. The initial survey followed by repeated follow-up at defined intervals to the family and special groups. Each resident of that geographical area is registered with relevant information regarding health status, socio-economic and demographic data. Periodically information will be collected regarding the infectious diseases, maternal-child health indicators, NCD risk factors and health and demographic profile of the family.

EDC and IT platform have several merits namely validation of data, efficient and quality data capture, storage, processing and analysis of data in various forms like numeric, longitude-latitude, reports, water bodies, categorical, group, relational and text, etc. Provides decision support with respect to timely alerts about risk factors and scheduling the visits for surveillance.

**ATTESTED**  


Department of community medicine, Yenepoya medical college, Mangaluru in collaboration with technology partner Samanvay research and development foundation, Bangalore with support from Tech4Dev, Chintu Gudiya Foundation developed technology-enabled HDSS.

This is a ready-to-use platform for all community medicine departments to establish or strengthen surveillance, research and service activities in their urban and rural field practice areas.

**ATTESTED**

**Dr. Gangadhara Somayaji K S**  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore 575 018, Karnataka.