

Data Quality Practices in Sri Lanka

Pamod Amarakoon
HISP Sri Lanka



RMNCAYH Digital Information System



eRHMIS

"Better Information for Better Health"



MH-MIS

DIRECTORATE OF MENTAL HEALTH



eRHMIS

Maternal & Child Health



eRHMIS
School Health



PRIVATE
SECTOR

eRHMIS

And many more..

Form Designing

- Identical transformation
 - For well-established dataflows eg. MCH
 - Creating a customized data entry form similar to the existing paper-based format.

Form Designing

- Optimization
 - For not well-established dataflows. (eg. Mental health, School health)
 - Paper-based forms reviewed and optimized prior to put it in DHIS2

Consolidated Quarterly Return on Mental Health Activities

RDHS Area:

Prepare in 2 copies
& send before 25th of month follow

A. Clinic activities and lia

1	Type of clinic
	General clinic
	Special clinics (Child guidance, etc.)
1	
2	
3	
4	
5	
	Total
2	Total Attendance for clinic and
	Newly diagnosed patients
	Without any diagnosis (Out of area)
	Previously diagnosed newly referred
	Follow up patient visits
	Total
3	Source of referrals (New patients)
	OPD
	Other wards (including PCU, ETU, ICU etc.)
	Other services of the hospital
	Public Health staff
	Community (Relatives & friends)
	Self referrals
	Total

Monthly Return

Institution:

Month:

Should be prepared by each institution/clinic
1st copy to RDHS (MO-Mental Health/Focal Person)

A. Clinic Activities (To be filled for Main and Sub-centres)

1. Clinic Sessions

Type of the Clinic
1.1. General clinic
1.2. Child & Adolescent guidance clinic
1.3. Substance abuse clinic
1.4. Gender based violence clinic
1.5. Elderly clinic
1.6. Other

2. Source of Referral (New Clients Only)

Source
2.1. Consultants
2.2. OPD
2.3. Other wards/clinics/services of the hospital
2.4. Other health institutions
2.5. Public health staff
2.6. Community (relatives, friends, work place)
2.7. GPs
2.8. Courts
2.9. Self-referrals
2.10. Other

H- 1277

A. Clinic Activities

B. Diagnosis

C. Community MH Services *

D. Meetings/Programmes Attended by MO-MH *

1. Clinic Sessions

Type of the Clinic	No. of Clinic Days
1.1 General clinic	<input type="text" value="1"/>
1.2 Child and adolescent guidance clinic	<input type="text" value="0"/>
1.3 Substance abuse clinic	<input type="text" value="0"/>
1.4 Gender based violence clinic	<input type="text" value="0"/>
1.5 Elderly clinic	<input type="text" value="0"/>
1.6 Other	<input type="text" value="0"/>

2. Source of Referral (New Clients Only)

Source	No. of Clients Referred
2.1 Consultants	<input type="text" value="0"/>
2.2 OPD	<input type="text" value="2"/>
2.3 Other wards/clinics/services of the hospital (including PCU, ETU, ICU etc.)	<input type="text" value="0"/>
2.4 Other health institutions	<input type="text" value="0"/>

E. Diagnosis (For newly diagnosed patients only)

ICD code	Diagnosis	No.		Total	No. occurring as co-morbidities
		Male	Female		
F00-F03	Dementia				
F05	Delirium				
F06	Other mental disorders due to brain damage				
	Mental and behavioral disorders due to use of				
F10	a. Alcohol				
F11	b. Opioids				
F12	c. Cannabinoids				
F13	d. Sedatives/Hypnotics				
F17	e. Tobacco				
F20	Schizophrenia				
F22	Delusional Disorder				
F23	Acute and Transient Psychotic disorders				
F25	Schizoaffective Disorder				
F30- F31	Manic Episode/Bipolar affective Disorder				
F32, F33	Depressive episode/recurrent depressive disorder				
F40, F41	Anxiety Disorders (eg. Phobia, GAD)				
F42	Obsessive Compulsive Disorder				
F43	Reaction to severe stress and Adjustment disorders				
F 44	Dissociative(Conversion) Disorder				
F 45	Somatoform Disorders				
F50	Eating disorders				
F52	Sexual Dysfunctions				
F 60	Personality Disorders				
F 64	Gender Identity Disorders				
F70 - 79	Mental Retardation				
F 80	Speech & language disorders				
F81	Specific Developmental Disorders of Scholastic skills				
F84	PDD including Autism				
F90	ADHD				
F91	Conduct Disorder				
F93	Emotional disorders with onsetspecific to childhood (eg. Separation anxiety, phobia,				

B. Diagnosis of clinic attendees (To be filled for Main and Outreach Clinics)

3. Diagnosis

Diagnosis	ICD Code	No. of First Visits		No. of Follow-up Visits	
		Male	Female	Male	Female
3.1. Dementia	F00-F03				
3.2. Delirium	F05				
3.3. Other mental disorders due to brain damage	F06				
3.4. Mental and behavioural disorders due to use of Alcohol	F10				
3.5. Mental and behavioural disorders due to use of Opioids	F11				

Form Designing

- Redesigned / Newly designed
 - For new data flows



WHO MNH Indicator

Fam
Ministry of Health, Nutrition

Electronic Reproductive Health Management Information System
Delivery Report
(* To be filled for each newborn separately in the form)

Date of Delivery:	dd / mm / yyyy	
1. Reference number:		
2. Age of the mother:	<input type="text"/> years	Date of Birth: <input type="text"/>
3. District of residence:		
4. Educational level of the mother:	<input type="checkbox"/> None <input type="checkbox"/> U	<input type="checkbox"/> Up to grade 5 <input type="checkbox"/> U
5. Gravida:	<input type="text"/>	
6. Parity:	<input type="text"/>	
7. Hb test done?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	If yes, select lowest Hb level:	<input type="checkbox"/> < 7 g/dl <input type="checkbox"/> 7 - 10 g/dl
8. VDRL test done?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	If yes, was it reactive? <input type="checkbox"/>	
9. HIV test done?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Blood sugar test done?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11. Glycaemic state	<input type="checkbox"/> Normal <input type="checkbox"/> GDM	
12. POA at delivery:	<input type="text"/> weeks	
13. Mode of delivery:	<input type="checkbox"/> NVD <input type="checkbox"/> Forceps <input type="checkbox"/> Vacuum	
14. Multiplicity:	<input type="checkbox"/> Single <input type="checkbox"/> Twin	
15. Postpartum uterotonics administered?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
16. Delivery outcome:	<input type="checkbox"/> Live birth <input type="checkbox"/> Still birth - Fresh <input type="checkbox"/> Still birth - Macerated If Live birth: Birth weight: <input type="text"/> Was the newborn within 1hr? <input type="text"/> Neonatal resuscitation done? <input type="text"/> Kangaroo Mother given? <input type="text"/> Treated for neonatal infection? <input type="text"/>	

Prepared by: Date:

Event date* 2019-04-03

General Information

Data element Value

BHT Number

Age of the mother

Date of birth

Years

Months

Days

District of Residence

Select or search from the list

Education level of the mother

Select or search from the list

Antenatal Information

Data element Value

Gravida

Parity

VDRL test done?

☐ Yes ☐ No

HIV test done?

☐ Yes ☐ No

Delivery Information

Workflow Designing

- Preserving paper-based format at the level of data capturing
- Minimum disturbances for service providers
- Concerns on infrastructure facilities
- Approval workflow to match the real-world scenario

User Trainings



User Manual

eRH MIS

End User Manual

V 0.96



Family Health Bureau

Ministry of Health, Nutrition and Indigenous Medicine



Family Health Bureau

Ministry of Health, Nutrition and Indigenous Medicine



eRH MIS

Electronic Reproductive Health Management Information System

Checklist – MOH Level

Please check the following before start entering data to eRH MIS

1. Login to the system

- You are given a list of preconfigured user names and passwords for your MOH area.
- Login to eRH MIS using username / password.

2. Check organization units

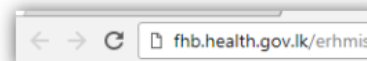
- Go to Apps > Data entry.
- You will get all the organization units assigned for data entry on the left panel. You can expand the list by clicking on [+] sign in front of an organization unit.
- Check whether all the PHM areas of MOH area are listed under your MOH.
- Expand each PHM area and check whether all the Grama Niladhari Divisions under them are correctly listed.
- Check whether all the clinics of MOH area are listed under your MOH.
- Under your MOH area, there should be a list of PHM areas and Clinics only. If something else is listed (e.g. Grama Niladhari Division) it is wrong.

SOPs

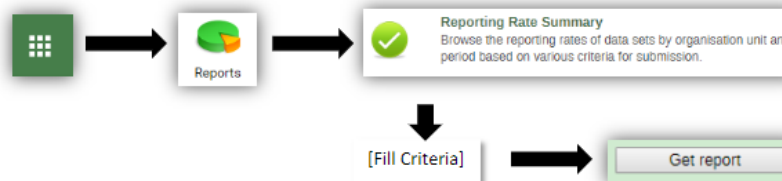
eRHMS Quick Data Approval Guide

Step 1. Login to the system

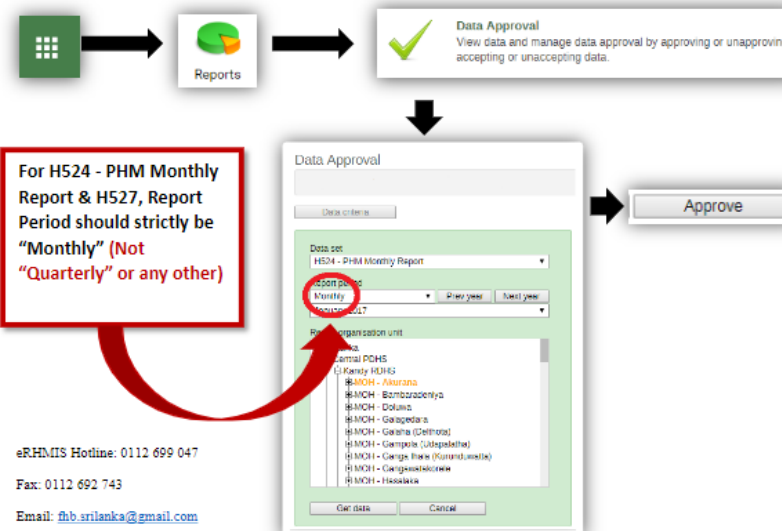
fhb.health.gov.lk/erhmis



Step 2. Check for Completeness



Step 3. Approve Dataset



eRHMS Hotline: 0112 699 047

Fax: 0112 692 743

Email: [fbh.srilanka@gmail.com](mailto:fhb.srilanka@gmail.com)

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SOPs

Guide to Generate & Print Standard Reports

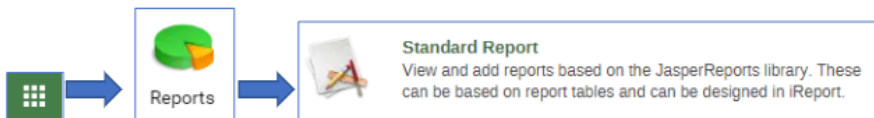
1. Open web browser (e.g. Google Chrome, Firefox) on your computer.



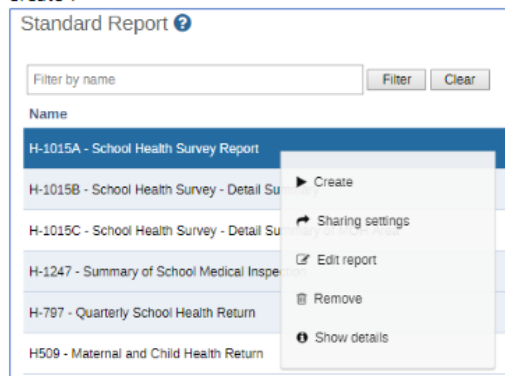
2. Login to eRHMS using your username and password.



3. Go to Apps → Reports → Standard Reports



4. Click on the desired report (e.g. "H1015A – School Health Survey Report" and then click on "Create".



SOPs



Family Health Bureau

Ministry of Health, Nutrition and Indigenous Medicine

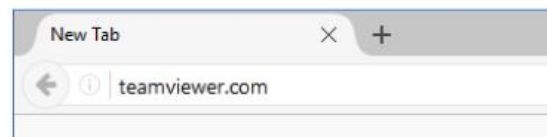


eRHMS

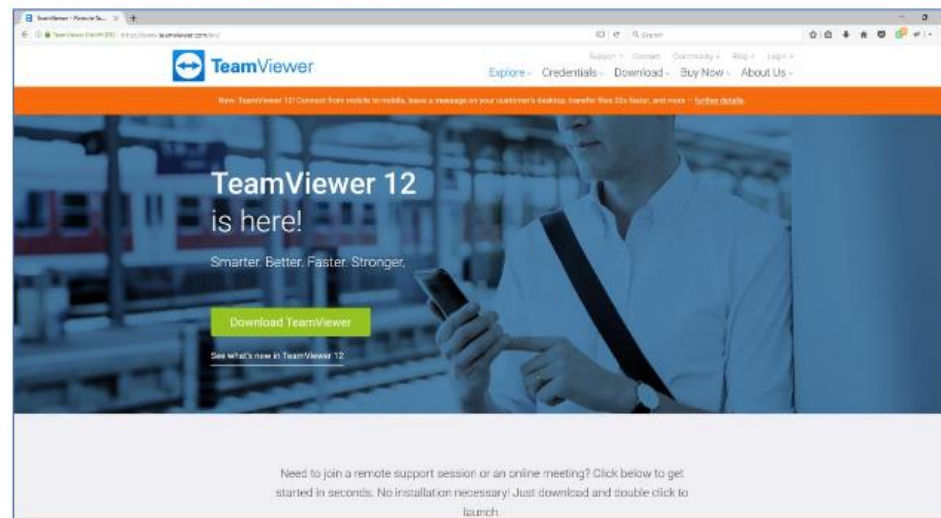
Electronic Reproductive Health Management Information System

TeamViewer Installation Guide

1. Open your web browser and type www.teamviewer.com and press enter key go to the TeamViewer website.



2. You will be directed to the TeamViewer web page.



3. Click on the "Download TeamViewer" button to download the setup file.

Download TeamViewer

- In Google Chrome, setup file will start to download.
- In Mozilla Firefox, you will get a dialog. Click on "Save File"

User Support – 3 tier model

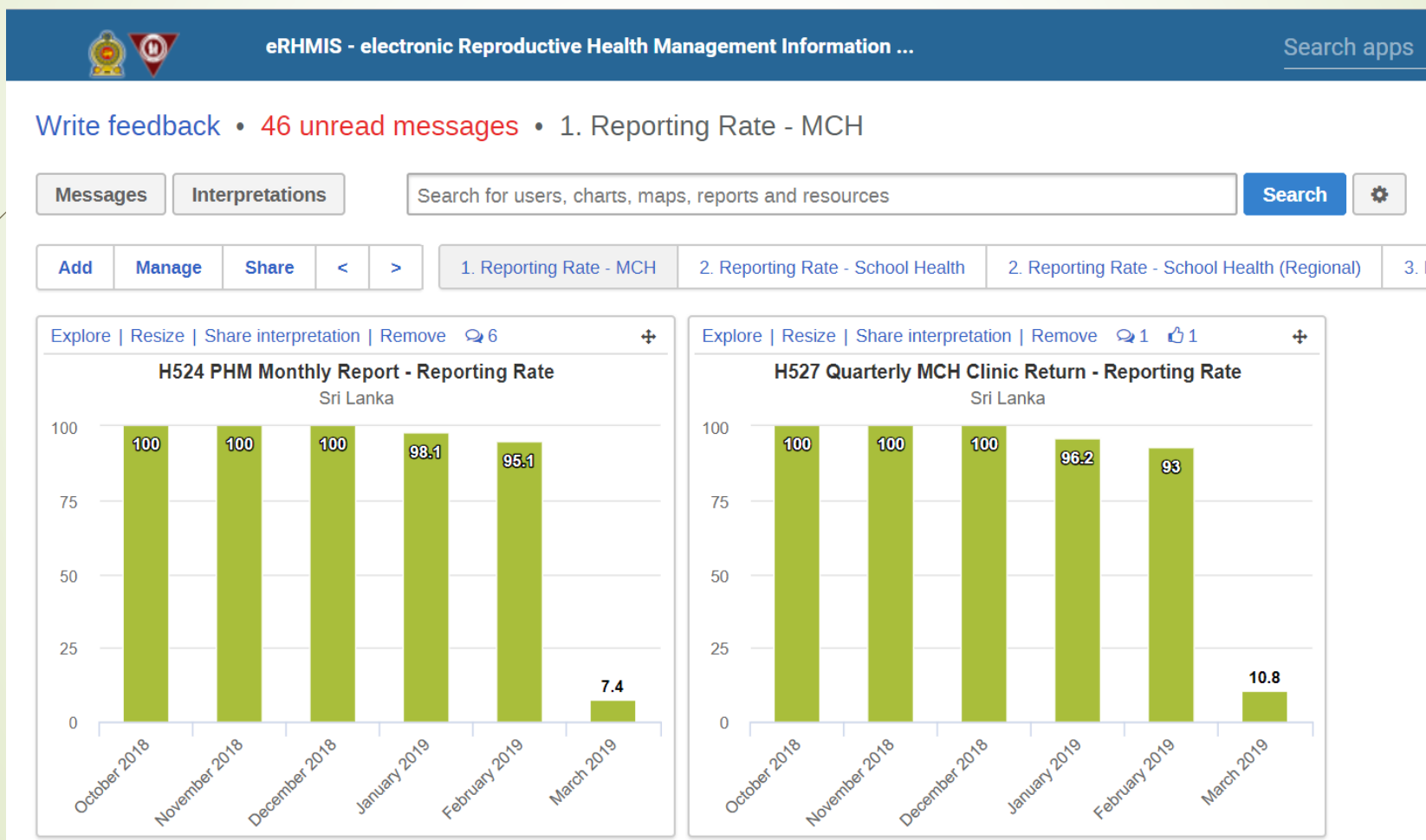


Data Quality in DHIS2

- Validation Rules - implemented
 - Compulsory Data Elements - implemented
 - Min-max
 - Predictors
 - WHO DQ tool
 - Score card
 - Legends
- In the process

Review and Feedback

- Monitoring Dashboards



Review and Feedback

- National Level Desk Reviews

Oct to Dec 2018		
Data / Organisation unit	Western PDHS	Total
H524 - PHM Monthly Report Reporting rate	100	100
H524 - PHM Monthly Report Reporting rate on time	67.3	67.28
H524 - PHM Monthly Report Expected reports	4 407	
H524 - PHM Monthly Report Actual reports	4 407	
Total	91.82	91.82

Open selection as

Org unit drill down/up

Drill up

Show Sri Lanka

Level 2 - PDHS

Show only Western PDHS

Show all Level 2 - PDHS units in Sri Lanka

Drill down

Show all level 3 - rdhs units in Western PDHS

Show all level 4 - moh units in Western PDHS

Show all level 5 - healthcare delivery area units in Western PDHS

Show all level 6 - gnd units in Western PDHS

Show all level 3 - rdhs units

Show all level 4 - moh units

Show all level 5 - healthcare delivery area units

Show all level 6 - gnd units

Review and Feedback

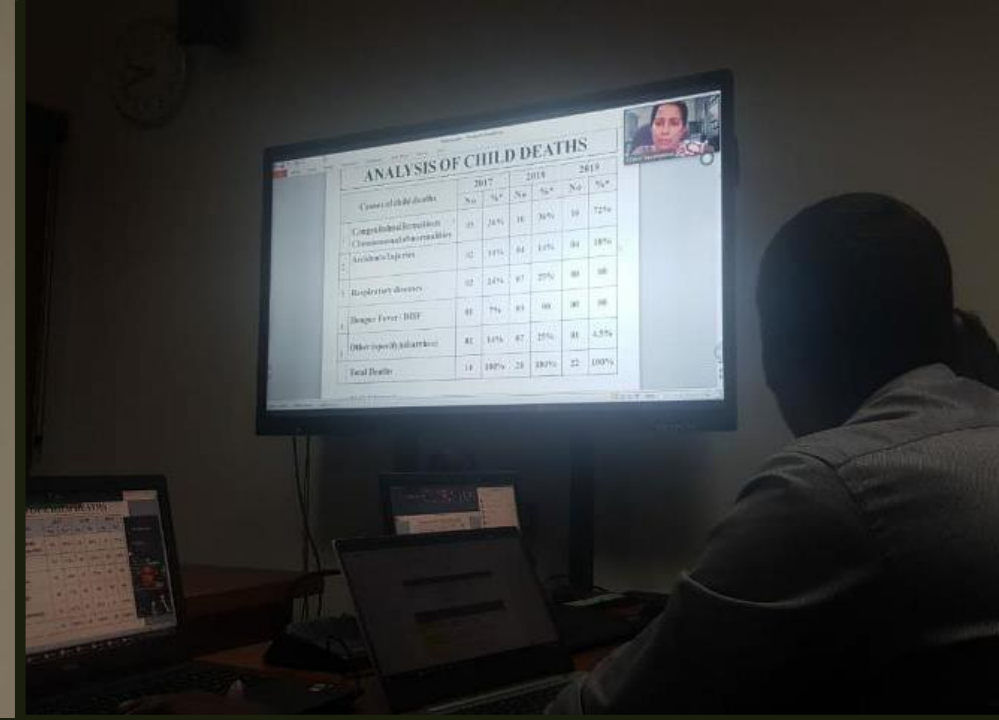
- Regular reviews
 - MCH Review at PHM level – Monthly
 - MCH Review at MOH level – Monthly
 - MCH Review at RDHS level – Yearly
 - MCH Review at country level – biannually

Reviews



Reviews





During the COVID-19
Pandemic



Feedbacks

- Annual Report



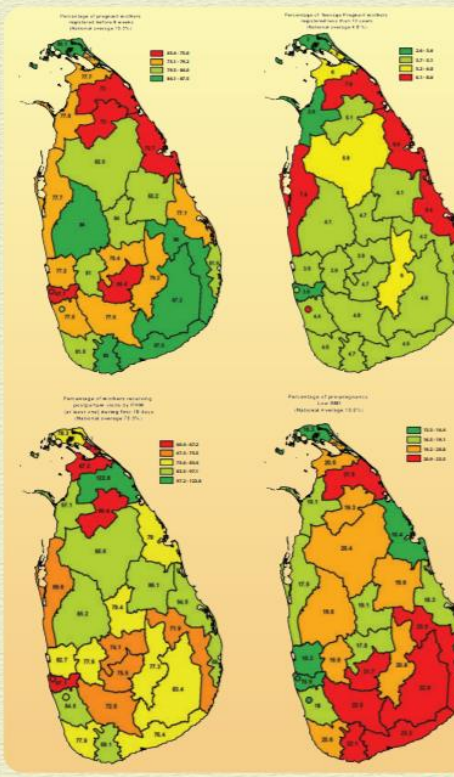
Feedbacks

Quarterly Return

MCH quarterly

THE QUARTERLY NEWSLETTER FROM FAMILY HEALTH BUREAU

MCH statistics of Sri Lanka	
Annual - 2016	Jan to Dec 2016
1. Population Estimated	21,944,000
2. Population Reported	21,763,957
3. Percentage of pregnant mothers registered before 8 weeks of gestation	78.5
4. Percentage of teenage pregnant mothers registered	4.8
5. Percentage of pregnant mothers with low blood pressure or before 12 weeks of gestation	18.8
6. Percentage of pregnant mothers protected for malaria	96.6
7. Percentage of Tetanus Toxoid coverage among pregnant mothers	100.0
8. Percentage of Mothers tested for VDRL at the time of delivery	100.0
9. Percentage of Counseling and IPI coverage among pregnant mothers	100.0
10. Percentage of pregnant mothers visited at least once at home by Public Health Midwife (PHM)	91.1
11. Percentage of pregnant mothers attending clinics at least once during pregnancy	94.7
12. Percentage of institutional deliveries	99.9
13. Percentage of home deliveries registered	0.1
14. Percentage of deliveries with LBCS	30.3
15. Percentage of unattended deliveries reported	0.1
16. Percentage of post partum mothers receiving at least one home visit within the first 10 postpartum days	78.5
17. Percentage of postpartum mothers visited by PHM at or around 42 days	79.0
18. Percentage of infants visited at least once at home after 42 days by Public Health Midwife	53.4
19. Percentage Low Birth Weight	11.2
20. Percentage of infants underweight	86.5
21. Percentage of young children (1-2 years) underweight	6.5
22. Percentage of young children (1-2 years) weighed	79.2
23. Percentage of preschoolers (3-5 years) underweight	14.3
24. Percentage of preschoolers (3-5 years) weighed	80.5
25. Percentage of preschoolers (3-5 years) underweight	21.2
26. Percentage of schools in which health Survey completed	96.1
27. Medical inspection conducted	92.3
28. Percentage of eligible families using modern methods	57.0
29. Percentage of eligible families using traditional methods	9.4
30. Percentage of eligible families with unmet need for family planning	6.2
31. Percentage of 15-year age cohort attendance to WHM	52.8
32. Maternal Mortality Ratio (100,000 live births)	33.8



Data for Colombo Municipal Council (CMC) & National Institute of Health Sciences (NIHS) areas are encircled

MCH quarterly

THE QUARTERLY NEWSLETTER FROM FAMILY HEALTH BUREAU

Volume 6, Number 1, January 2017
www.fhb.health.gov.lk

Psychosocial Health Promotion of School Children

Children are an asset to us. They are the future of our nation. It is therefore of utmost importance that we ensure our children develop not only physically but also mentally and psychologically. We should ensure that they are healthy, alert and active to face the challenges of our ever changing world. A healthy mind is also imperative for the success of the academic life of the child. Developing children to be wholesome individuals therefore should be our aim and vision.

Molding and developing a child to be a well-balanced wholesome individual requires not only the inculcation of knowledge and attitudes but also necessitates that appropriate skills be imparted to our children. In order to present society with such well-balanced children who would one day blossom into well balanced adults it is of vital importance that special consideration is given not only to their physical development but also to their psychosocial development.

The Global School Based Student Health Survey which was conducted among 2611 students aged 13-15 years showed that 4.4% of students felt so worried about something that they could not sleep at night during the past 12 months, while 9.9% had seriously considered attempting suicide during the past 12 months 9.9 %. Furthermore nearly 13.5% felt that suicide was a solution for a problem. It is also important to note that nearly 40% had experienced some sort of bullying. While 18% had academic stress.

This data speaks to us that instilling upon our children the concepts of healthy psychosocial development and empowering children to face the psychosocial challenges and stresses they face in life could no longer be delayed.

Psychosocial health promotion could be achieved through

- Life Skills
- Family Harmony
- Positive school environment
- Safe Social Environment
- Counseling
- Mind fullness

As the best place to introduce the concepts of healthy psychosocial development is the school many steps have been taken to improve the psychosocial environment in schools. Training not only students but also teachers on life skills empowers both the teacher-student community to face the challenges of the ever changing world. Many training of trainer programmes on life skills have been carried out for district level public health staff across the country with the expectation that these trainers thus trained would carry on their responsibility of training district level public health officers in their areas. These trained officers thereafter carry out life skill programmes for teachers and students in schools. In addition the centre has also been involved in directly training peripheral staff on life skills as well

What are life skills?

Today great challenges are leveled at individual life through rapidly occurring social changes, social complexities and various social forces. Our ability to face these challenges of our daily lives successfully are called psycho-social skills or life skills. Life Skills are thus abilities for adaptive and positive behavior that enables us to deal effectively with the demands & challenges of everyday life.

District Nutrition Monitoring System

Personalized Monitoring of Children in the Community

Pamod Amarakoon
HISP Sri Lanka

Functionality

- Register children with malnutrition at field level
- Routinely monitor and track,
 - Nutritional parameters (height, weight)
 - Household risk factors
- Obtain household geo locations
- Analytics and chart visualizations for mobile user
- Synchronize with central server and share with multi-sector stakeholders



Multi Sector Stakeholders

Nutrition Secretariat/Ministry of Health



Medical Officer of Health



Parent/Guardian

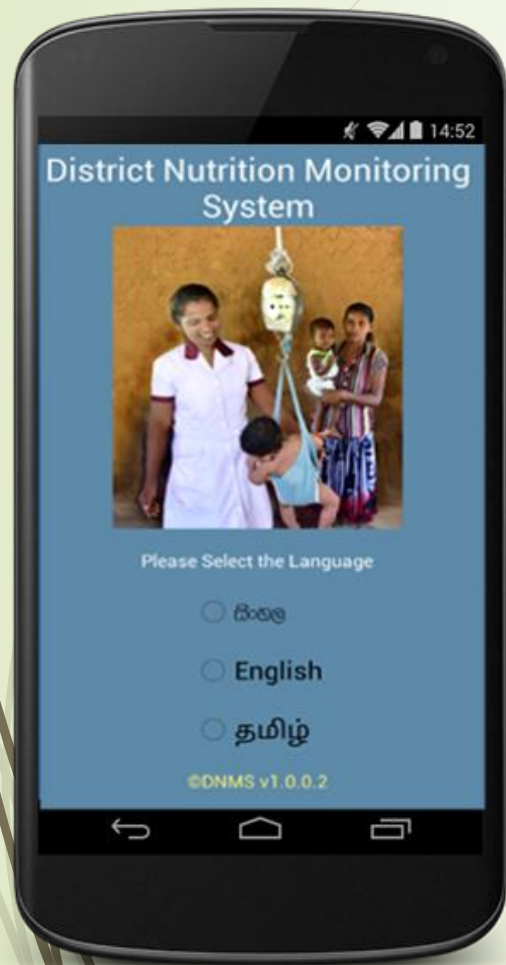


dhis2





Technology



Web API



DQ Measures During Data Capture



Simple Interfaces

60% 2:08 pm

Ambagahawella

Add Child

Child Details

CHDR No

Last Name

Other Names

Gender

Date of Birth

Birth Weight kg

Next

59% 2:11 pm

Ambagaha

Add Child

Other Details

PHN Number

Eligible Family Number

Ethnicity

Next

58% 2:12 pm

Ambagahawella

Add Child

Reason for Selection for the Survey

☐ Low Birth Weight

☒ Underweight

☐ Stunting

☒ Wasting

☐ Anemia

☐ Overweight

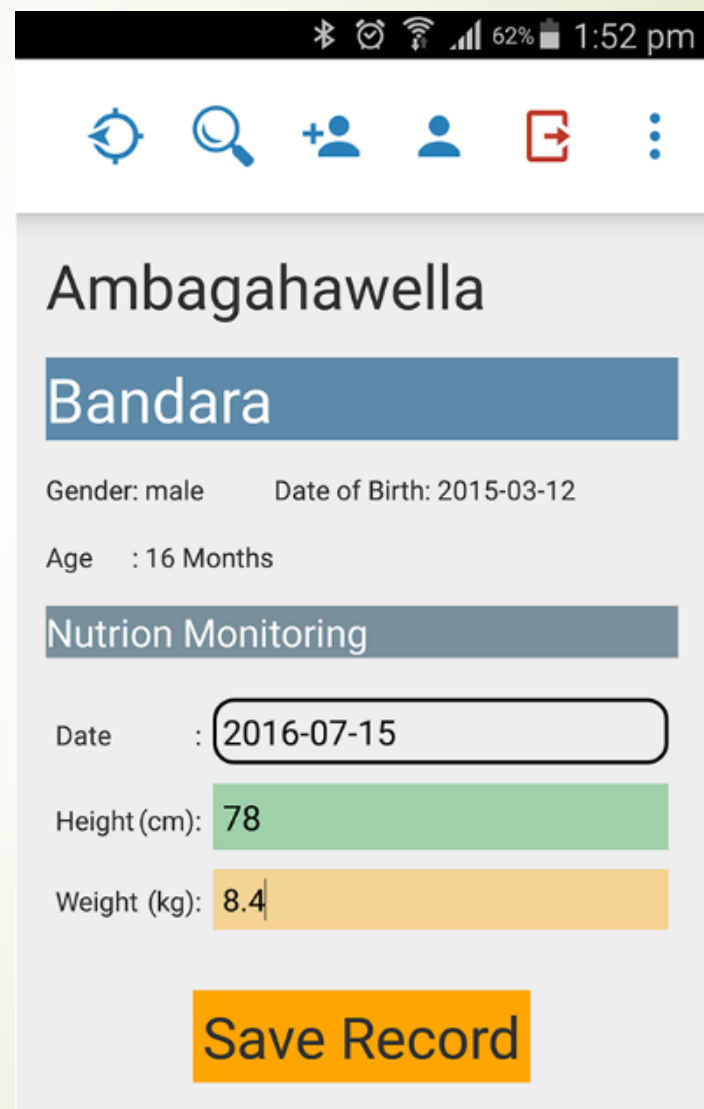
☐ Other Reasons

Save

☒ Get Location

Real-time Validation of Entered Data

Height/weight data entry. Supports colour coding as you type it based on WHO reference ranges



The screenshot shows a mobile application interface for a nutrition monitoring system. At the top, there is a status bar with icons for Bluetooth, alarm, Wi-Fi, signal strength, 62% battery, and the time 1:52 pm. Below the status bar is a navigation bar with icons for a compass, magnifying glass, add person, person, and a red square with a white arrow. The main content area is titled "Ambagahawella" and "Bandara". Below the title, there is a form for "Nutrition Monitoring". The form includes fields for "Date" (2016-07-15), "Height (cm)" (78), and "Weight (kg)" (8.4). The height field is highlighted in green, and the weight field is highlighted in orange. At the bottom of the form is a large orange button labeled "Save Record".

Ambagahawella

Bandara

Gender: male Date of Birth: 2015-03-12

Age : 16 Months

Nutrition Monitoring

Date : 2016-07-15

Height (cm): 78

Weight (kg): 8.4

Save Record

Display of longitudinal charting.
Multiple dimensions supported

Longitudinal charting with snapshot view of nutritional status and trend with use of reference colours

Other Names: Lasith

Gender : male

Date of Birth : 2015-03-12

Birth Weight : 2.5 kg

Pick a Graph

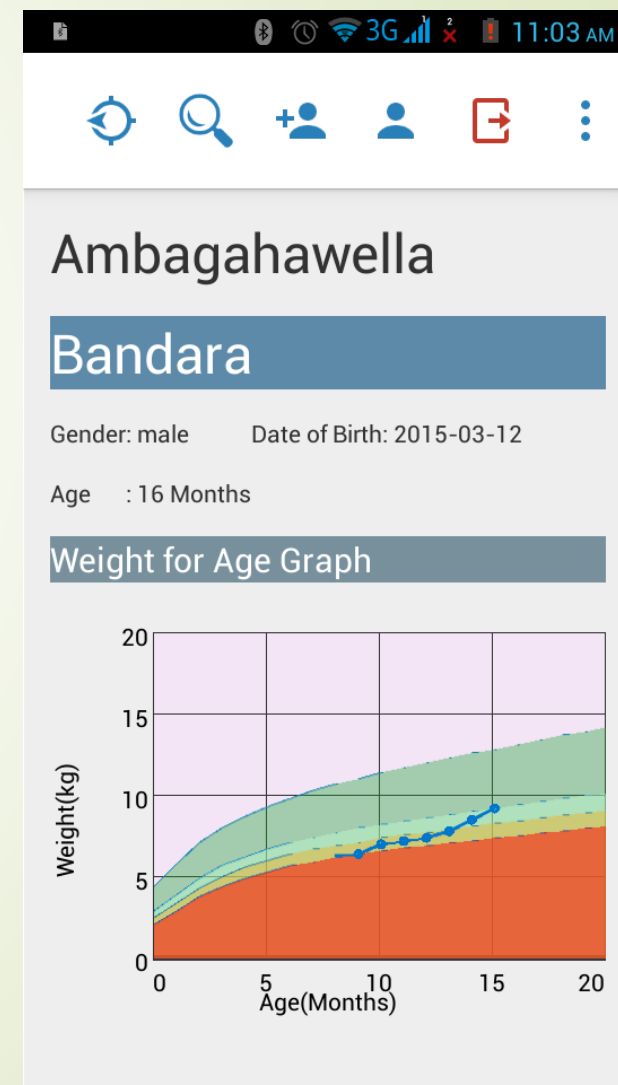
- Height for Age
- Weight for Age
- Weight for Height

Eligible Family Number: 23







Ethnicity : Sinhalese

Show Graph

Edit Profile **View Records** **Add Record**



User Level Analytics

Ambadandegama-B

Select Report Type

☒ Nutrition Status







☐ SD Category

Query

Nutrition Report

Underweight	13
Anemia	8
Low Birth Weight	4
Wasting	2
Stunting	1
Overweight	0
Other Reasons	0

Generation of
reports based on
nutritional problem
&
height/weight
measurements

Weight For Age	
Less than -3SD	13
Between -2SD to -3SD	4
Between -1SD to -2SD	4
Between -1SD to +2SD	0
More than +2 SD	0
Height For Age	
Less than -3SD	12
Between -2SD to -3SD	3
Between -1SD to -2SD	1
Between -1SD to +2SD	4
More than +2 SD	1
Weight For Height	
Less than -3SD	12
Between -2SD to -3SD	5
Between -1SD to -2SD	4
Between -1SD to +2SD	0
More than +2 SD	0



DQ Measures at Facility Level

Supervision of Data by PHNS

HEIGHT / WEIGHT

VIEW 4 CHILDREN

VIEW 9 CHILDREN


VIEW 1 CHILDREN


VIEW 1 CHILDREN


VIEW 0 CHILDREN


VIEW 0 CHILDREN

Hello Dr. 17!

 Set your location
Ambagamuwa East CHANGE

 Set your report date
4/3/2019

 52
Events need your approval ✓ ✕ 👁

 17
Events need sisters attention ✓ ✕ 👁

Global Search

Nutrition Monitoring



Weight

4.6

Height

77

✓ MARK AS COMPLETED

Registration

 VIEW

 DELETE

Nutrition Monitoring

Mon Mar 07 2016

 VIEW

 DELETE



Data Approval at MOH Level

HEIGHT / WEIGHT

VIEW 4 CHILDREN

VIEW 9 CHILDREN

VIEW 1 CHILDREN

VIEW 1 CHILDREN

VIEW 0 CHILDREN

VIEW 0 CHILDREN

Hello Dr. 17!



Set your location
Ambagamuwa East

 CHANGE



Set your report date
4/3/2019



52
Events need your approval



17
Events need sisters attention



Global Search