The Millennium Global Village-Network: Helping to Achieve the MDGs by Improving Quality, Access and Efficiency

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Agenda

- Millennium Villages Project Overview
- The Problem
- MGV-Net Solution: OpenMRS/ChildCount+
- Terminology/Enterprise Architecture
- OASIS II Evaluation and Malaria in Uganda

Millennium Villages Project

- Partnership between the Earth Institute Columbia University, UNDP, Millennium Promise and national governments.
- Primarily operates in 10 countries in 14 agro-ecological zones in Sub-Saharan Africa
- Integrated development at $120 pc/y

Millennium Villages

- Koraro, Ethiopia
- Bonsaaso, Ghana
- Dertu, Kenya
- Sauri, Kenya
- Gumalira, Malawi
- Mwandama, Malawi
- Tiby, Mali
- Timbuktu, Mali
- Ikaram, Nigeria
- Pampaida, Nigeria
- Mayange, Rwanda
- Potou, Senegal
- Mbola, Tanzania
- Ruhiira, Uganda

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Role of Health Information

- Three of eight MDGs are health-related
- MVP establishes one clinic per 5000 people
- 1 CHW for 100 HH
- Improve care
- Assess impact and effectiveness of program

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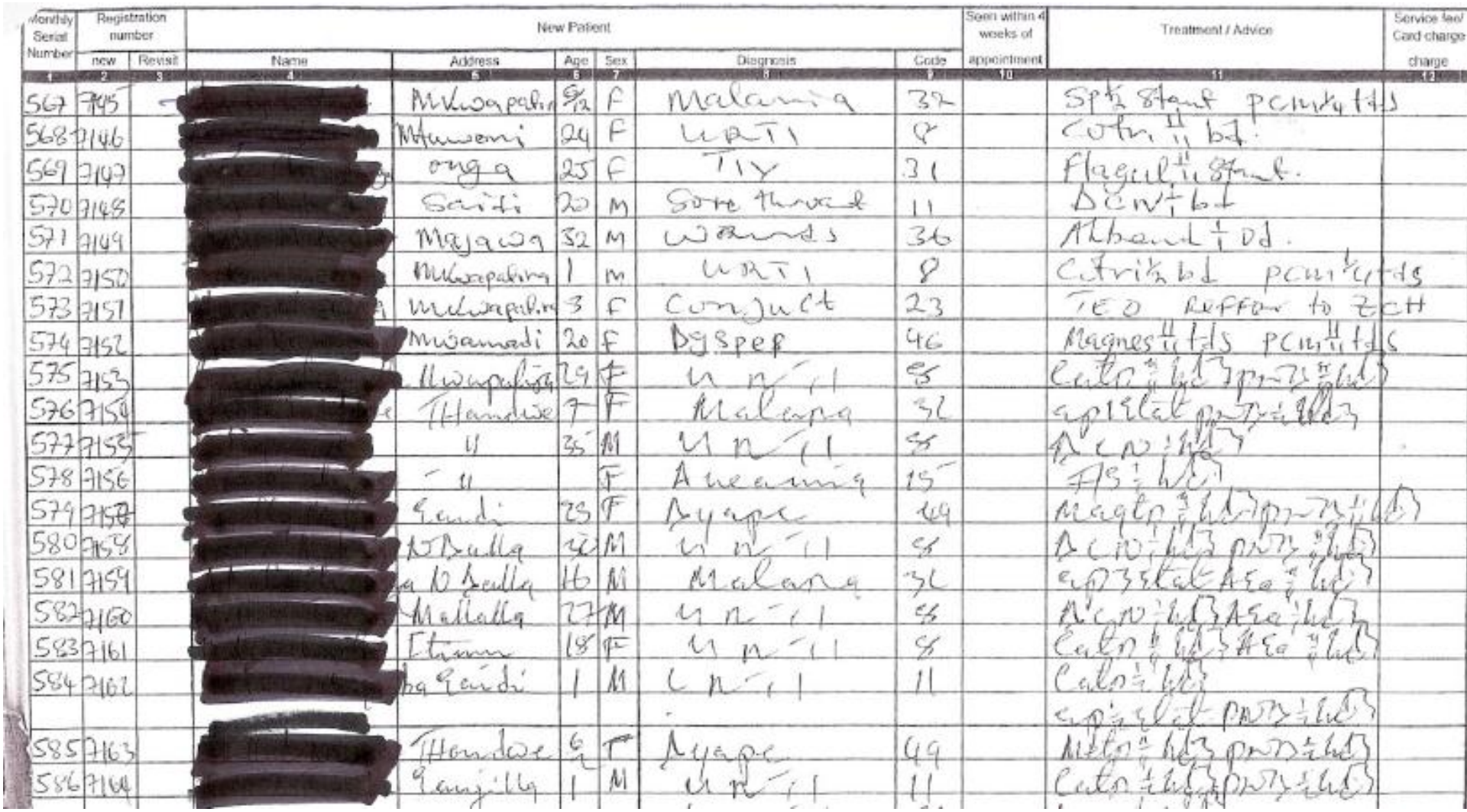

Monthly Serial Number	Registration number		New Patient						Seen within 4 weeks of appointment	Treatment / Advice	Service fee/ Card charge
	new	Revisit	Name	Address	Age	Sex	Diagnosis	Code			charge
1	2	3	4	5	6	7	8	9	10	11	12
567	7145		[redacted]	Mkwapatin	6/12	F	Malaria	32		Sp½ Stat pcm¼ tds	
568	7146		[redacted]	Mtuwoni	24	F	URTI	8		Cotri ¼ bd.	
569	7147		[redacted]	onga	25	F	TIY	31		Flagul ¼ Stat.	
570	7148		[redacted]	Saidi	20	M	Sore throat	11		DCN ¼ bd	
571	7149		[redacted]	Majawa	32	M	Wounds	36		Alband ¼ bd.	
572	7150		[redacted]	Mkwapatina	1	M	URTI	8		Cotri ½ bd pcm ¼ tds	
573	7151		[redacted]	Mkwapatina	3	F	Conjuct	23		TEO Reffer to ZCH	
574	7152		[redacted]	Mwamadi	20	F	Dyspep	46		Magnes ¼ tds pcm ¼ tds	
575	7153		[redacted]	Mwapatina	29	F	U N/I	8		Cotri ¼ bd pcm ¼ bd	
576	7154		[redacted]	Thandwe	7	F	Malaria	32		ap1 Etat pcm ¼ bd	
577	7155		[redacted]	"	35	M	U N/I	8		DCN ¼ bd	
578	7156		[redacted]	"		F	Aneamia	15		FS ¼ bd	
579	7157		[redacted]	Gandi	25	F	Dyspe	49		Magtr ¼ bd pcm ¼ bd	
580	7158		[redacted]	N Dalla	30	M	U N/I	8		DCN ¼ bd pcm ¼ bd	
581	7159		[redacted]	a N Dalla	16	M	Malaria	32		ap3 Etat AEa ¼ bd	
582	7160		[redacted]	Mallalla	27	M	U N/I	8		DCN ¼ bd AEa ¼ bd	
583	7161		[redacted]	Itimu	18	F	U N/I	8		Cotri ¼ bd AEa ¼ bd	
584	7162		[redacted]	ba Gandi	1	M	U N/I	11		Cotri ¼ bd	
										ap½ Etat pcm ¼ bd	
585	7163		[redacted]	Thandwe	6/12	F	Dyspe	49		Metr ¼ bd pcm ¼ bd	
586	7164		[redacted]	Ganjilla	1	M	U N/I	11		Cotri ¼ bd pcm ¼ bd	

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Comparable and Timely Data

		Nov. – Jan Ave.	Feb. – April Ave.	% Change
% of patients treated	< 5	50.0%	24.4%	-51.3%
	>= 5	35.4%	12.3%	-65.4%
% suspected	< 5	73.7%	73.5%	0.4%
	>= 5	58.3%	53.3%	-8.5%
% suspected, treated	< 5	67.2%	32.3%	-51.0%
	>= 5	60.2%	22.6%	-62.4%
Coartem		377	165	-56.3%

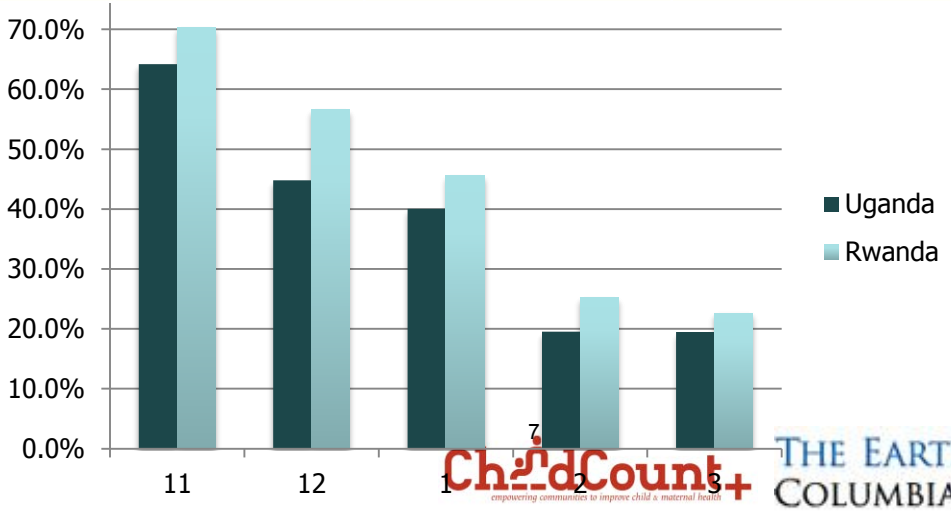

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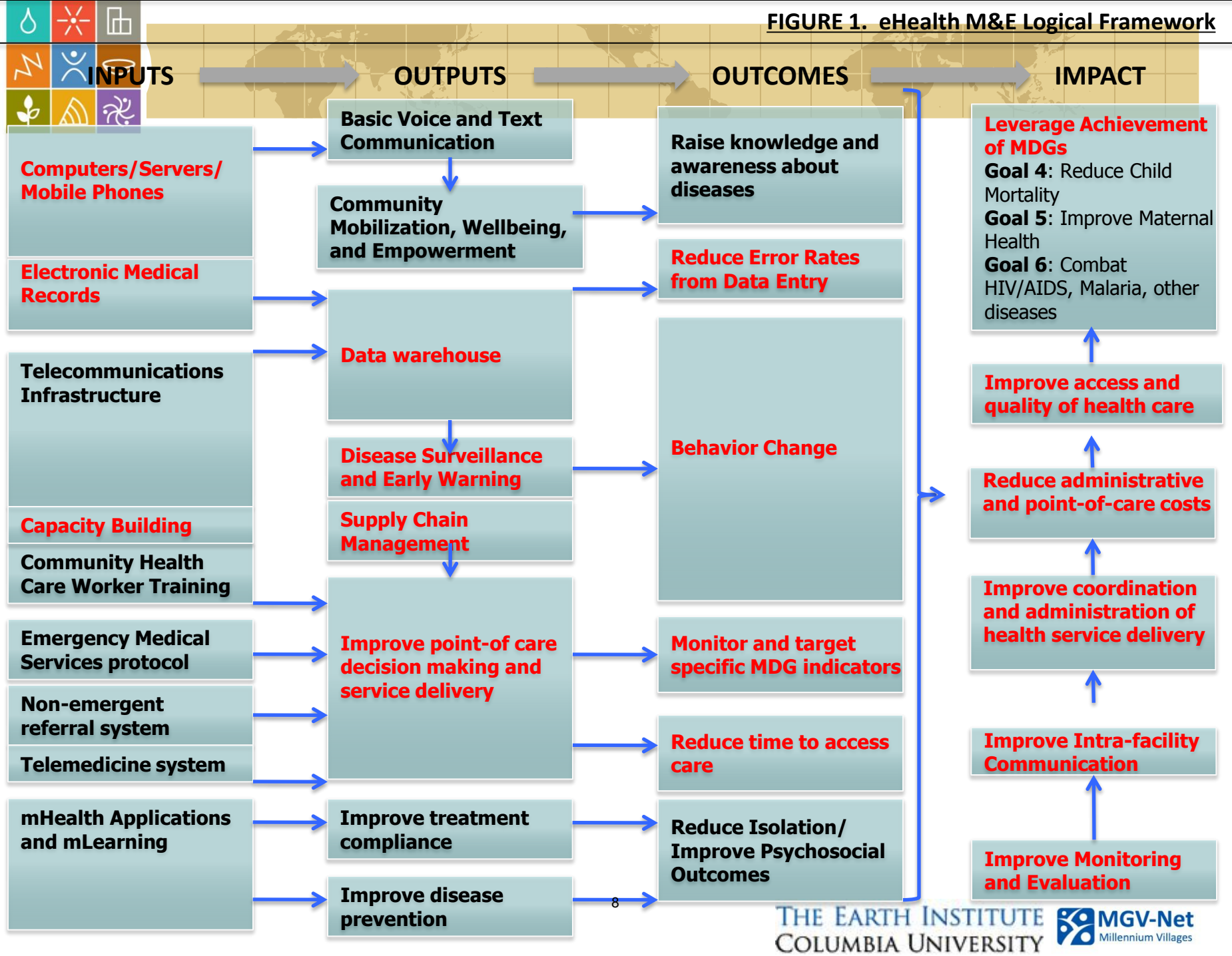
FIGURE 1. eHealth M&E Logical Framework



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Millennium Global Village Network

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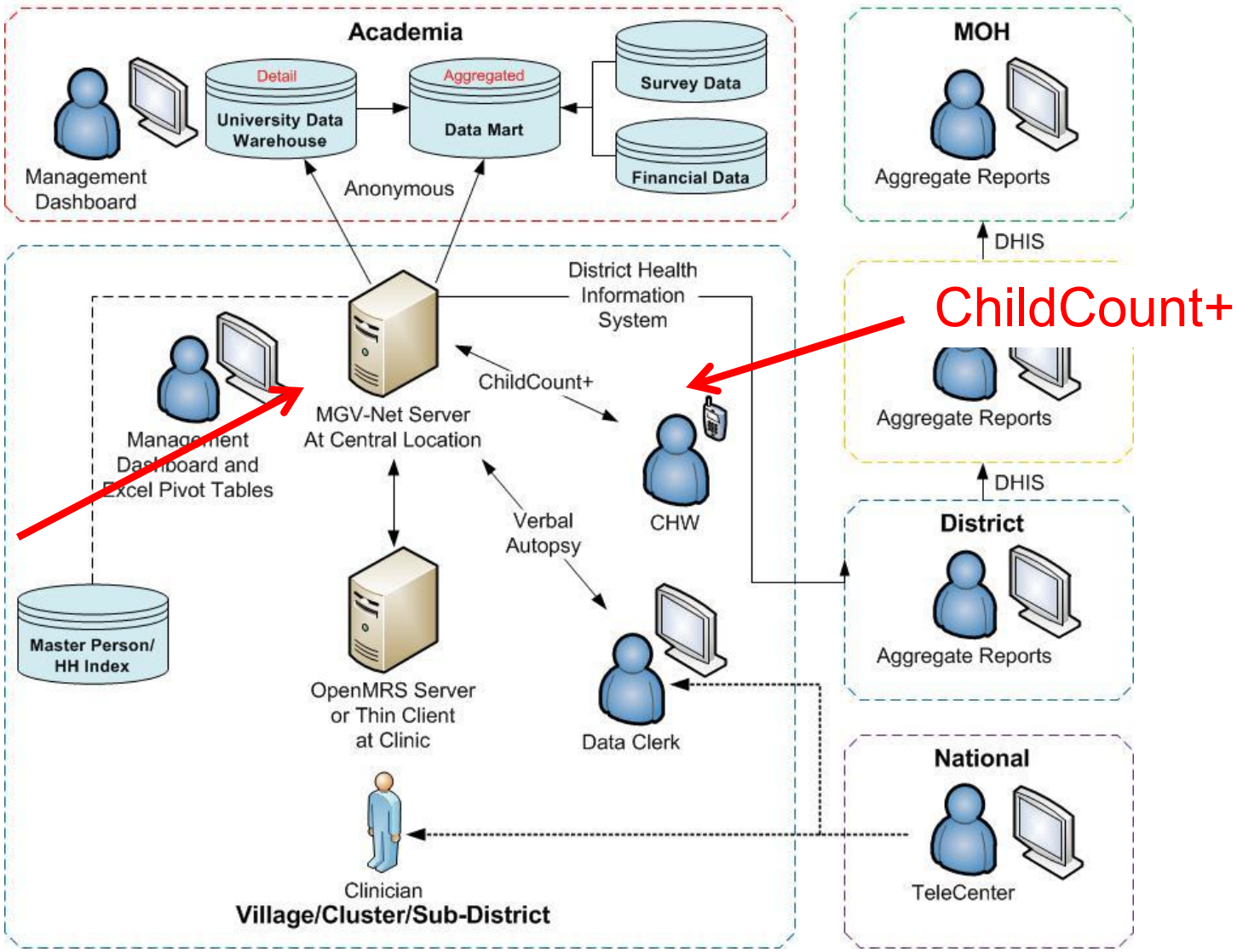
Vision: MGV-Net Information System

- Bottom-up
- Patient-centered
- Locally-owned/maintained
- Integrated/interoperable
- Provide local value
- Global reach
- Sustainable

Millennium Global Village-Network Including ChildCount+ and VSVA



OpenMRS

ChildCount+

MGV-Net

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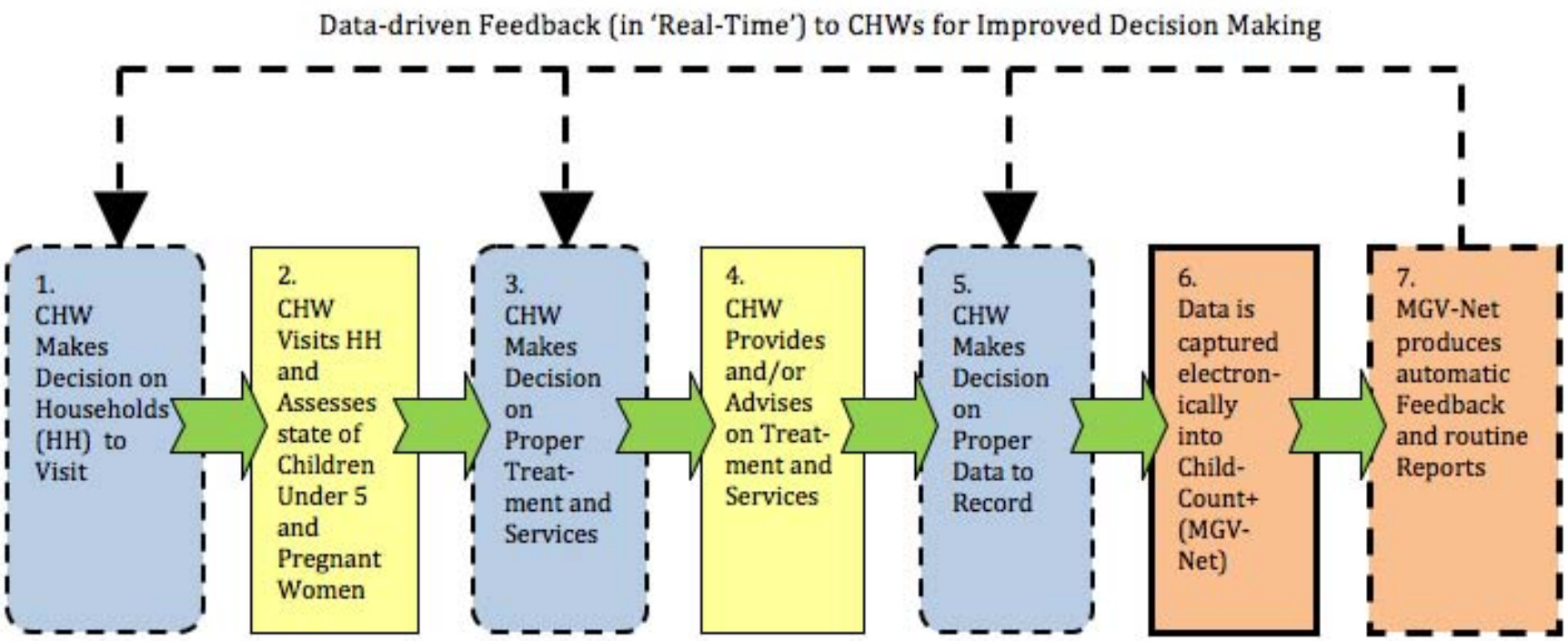
CHW Decision Support and Info System



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Looking up Patients…

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Prior Encounters…

OpenMRS

Currently logged in as Doctor Super User | Log out | My Profile | Help

Home | Find/Create Patient | Dictionary | Cohort Builder | Administration

Jane Doe

28 yrs (~Jan 1, 1982)

Health ID: **1DM5**

Clinic ID: 44444

Last encounter: **Verbal Autopsy @ Unknown Location, Feb 24, 2010**

Overview | Regimens | Encounters | Demographics | Graphs | Forms | XForms

Encounters

All Encounters

Edit	View	Encounter Date	Encounter Type	Provider	Form	Location	Enterer
		02/24/2010	CHERA Visit	Doctor Super User	CC+ Household Visit Form	Sauri Clinic	Doctor Super User
		02/24/2010	Verbal Autopsy	Jonathan Dick	Verbal Autopsy Adult Form	Unknown Location	Doctor Super User
		02/23/2010	CHERA Visit	Doctor Super User	CC+ Individual Visit	Sauri Clinic	Doctor Super User
		02/19/2010	Verbal Autopsy	Doctor Super User	Verbal Autopsy Neonatal Form	Kabuyanda HC4	Doctor Super User
		02/18/2010	Verbal Autopsy	Doctor Super User	Verbal Autopsy Adult Form	Kabugu HC3	Doctor Super User
		02/07/2010	CHERA Visit	Doctor Super User	CC+ Over 5 Form	Marenyo Clinic	Doctor Super User
		02/07/2010	CHERA Visit	Doctor Super User	CC+ Individual Visit	Kabugu HC3	Doctor Super User
		02/07/2010	CHERA Visit	Doctor Super User	CC+ Individual Visit	Sauri Clinic	Doctor Super User
		02/05/2010	CHERA Visit	Doctor Super User	CC+ Over 5 Form	Sauri Clinic	Doctor Super User
		02/05/2010	CHERA Visit	Doctor Super User	CC+ Under 5 Form	Sauri Clinic	Doctor Super User
		02/05/2010	CHERA Visit	Doctor Super User	CC+ Over 5 Form	Kanywamaizi HC3	Doctor Super User
		02/05/2010	Verbal Autopsy	Doctor Super User	Verbal Autopsy Neonatal Form (French)	Kabuyanda HC4	Doctor Super User
		01/22/2010	CHERA Visit	Doctor Super User	CC+ Over 5 Form	Sauri Clinic	Doctor Super User
		01/10/2010	CHERA Visit	Doctor Super User	CC+ Over 5 Form	Kabuyanda HC4	Doctor Super User
		01/02/2010	CHERA Visit	Doctor Super User	CC+ Under 5 Form	Kanywamaizi HC3	Doctor Super User
		01/02/2010	CHERA Visit	Doctor Super User	CC+ Under 5 Form	Marenyo Clinic	Doctor Super User
		01/02/2010	CHERA Visit	Doctor Super User	CC+ Under 5 Form	Kabugu HC3	Doctor Super User

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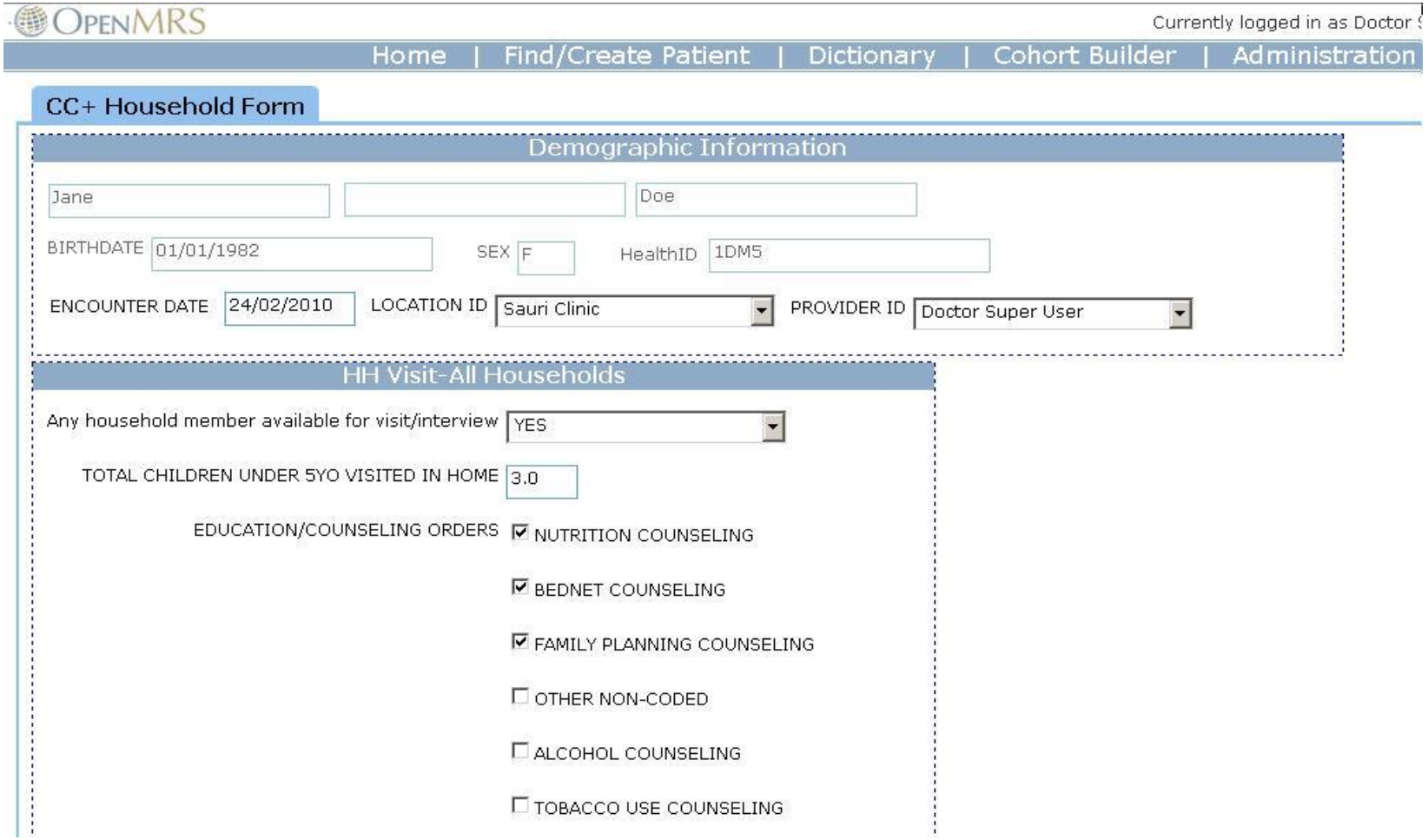
View Prior Encounters



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French

Jane Doe | 28 yrs | Health ID: 1DM5 | Clinic ID: 44444

Rencontre: **CHERA Visit le 24/02/2010 at Sauri Clinic** [Close Window]
Fiche: **CC+ Household Visit Form** [Modifier]

4.0 Any household member available for visit/interview: **Oui**

4.1 TOTAL CHILDREN UNDER 5YO VISITED IN HOME: **3.0**

4.2 Education/Conseil: **SUIVI NUTRITIONNEL**
CONSEIL POUR L'UTILISATION DES MOUSTIQUAIRES
CONSEIL POUR LE PLANNING FAMILIAL

5.0 TOTAL WOMEN 15-49YO SEEN IN HOUSEHOLD: **4.0**

5.1 TOTAL WOMEN 15-49YO SEEN IN HOUSEHOLD USING MODERN FAMILY PLANNING METHOD: **3.0**

6.0 Long-lasting insecticidal mosquito nets (LLINs): **3.0**

6.1 NUMBER OF SLEEPING SITES IN PATIENT'S HOUSEHOLD: **4.0**

Same Data in multiple languages

English

Jane Doe | 28 yrs | Health ID: 1DM5 | Clinic ID: 44444

Encounter: **CHERA Visit on 02/24/2010 at Sauri Clinic** [Close Window]
Form: **CC+ Household Visit Form** [Edit]

4.0 Any household member available for visit/interview: **YES**

4.1 TOTAL CHILDREN UNDER 5YO VISITED IN HOME: **3.0**

4.2 EDUCATION/COUNSELING ORDERS: **NUTRITION COUNSELING**
BEDNET COUNSELING
FAMILY PLANNING COUNSELING

5.0 TOTAL WOMEN 15-49YO SEEN IN HOUSEHOLD: **4.0**

5.1 TOTAL WOMEN 15-49YO SEEN IN HOUSEHOLD USING MODERN FAMILY PLANNING METHOD: **3.0**

6.0 NUMBER OF FUNCTIONING BEDNETS IN THE HOUSEHOLD: **3.0**

6.1 NUMBER OF SLEEPING SITES IN PATIENT'S HOUSEHOLD: **4.0**

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History of Present Illness	Physical Exam
Chief complaint:	

IMPRESSIONS/DIAGNOSES:

Problems Added: Add New Problem	Problems Removed: Remove Problem From List
1. Delete	1. Delete

☐ Alcohol Abuse	☐ Gastroenteritis	☐ Measles	☐ Tetanus
☐ Anemia	☐ Hypertension	☐ Meningitis	☐ Trauma/Injury
☐ Asthma	☐ HIV Infection	☐ Pneumonia	☐ Trichomoniasis
☐ Conjunctivitis	☐ Intestinal Parasites	☐ Pulmonary TB	☐ Urinary Tract Inf.
☐ Diarrhea	☐ Malaria	☐ Upper Resp. Tract Infect.	☐ Vaginal Bleeding
☐ Fever of Unknown Origin	☐ Malnutrition	☐ Skin Disorders	Other:

Lab Orders:	Lab Results:	Radiology:
☐ Malarial Smear	**Malaria** ○ - ○ + ○ ++ ○ +++ ○ ++++	
☐ Urine Pregnancy Test	**AFB** ○ - ○ + ○ ++ ○ +++ ○ ++++	
☐ Blood Sugar (Glucose)	**Pregnancy** ○ Neg. ○ Pos. ○ Indeterminate	
☐ HIV Test	**Stool O&C** ○ Neg. ○ Pos. _____	
☐ Haemoglobin	**HIV Test** ○ Neg. ○ Pos. ○ Indeterminate	
☐ Syphilis (VDRL)	**Sputum Gram Stain** ○ Neg. ○ Pos.	Blood Sugar: _____ mmol/dL
☐ Urinalysis	○ Other: _____	Haemoglobin: _____ g/dL
☐ Sputum AFB ☐ Gm Stain	**VDRL** ○ Non-Reactive	Hematocrit: _____ %
☐ Stool O&C	○ Reactive	Other:
☐ Other:		

Recommendations	Pharmacy	Referrals

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Terminology Service Bureau- 50,000 concepts

OpenMRS Millenn

Change Password
Logout
Preferences
Translate Concepts
Translate Phrases
Manage Concept Translations
Manage Phrase Translations

Filter Concepts by All Concepts

Only entries without translatio

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ..., 15

ABDOMINAL SYSTEM
ACTIVE NOT ON ARVS
ACUTE DIARRHEA
ACUTE PNEUMONIA PRESUMED
ACUTE TYPE A VIRAL HEPATITI
ADHERENCE COUNSELING
ADRENALINE HYDROCHLORIDE
ALCOHOL ABUSE
ALCOHOL COUNSELING
ALWAYS
AMBULANCE
AMINOPHYLLINE
AMOXICILLIN
AMPICILLIN
ANEMIA
ANTENATAL HISTORY

Viewing Concept Anaemia

Previous | Edit | Stats | Next | New

Search

Id	121629
Locale	English | Spanish | French | Italian | Portuguese | Tigrinya | Swahili
Name	Anémie
Short Name	
Description	
Synonyms	
Class	Diagnosis
Datatype	N/A
Mappings	AMPATH: 3 SNOMED CT: 271737000 ICD-10-WHO: D64.9 AMPATH: 6030
Version	
Retired	false
Created By	Doctor Super User - November 3, 2007 12:00:00 AM UTC
Changed By	Doctor Super User - April 25, 2010 1:22:45 PM UTC

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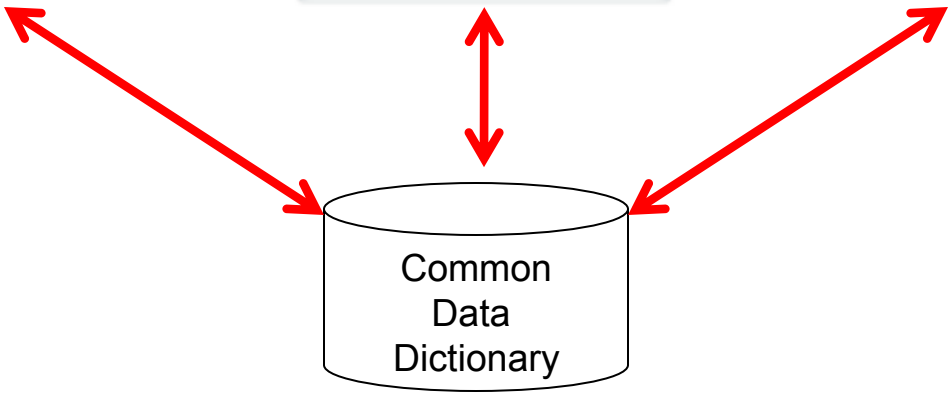
Nigeria
Malawi
Nepal
Philippines
Peru
Kenya
India
Uganda
Senegal
Chile
Rwanda
Indonesia
Tanzania
Afghanistan
Nicaragua
Ghana
Mali

AMPATH
ACADEMIC MODEL PROVIDING ACCESS TO HEALTHCARE

Partners In Health

Mobile Technology for Community Health (MoTeCH)



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OASIS II Study-Evaluating Impact

The proposed research systematically evaluates the impact of all MGV-Net components (e.g. ChildCount+; OpenMRS) on various aspects of the healthcare delivery system including:

- service coverage;
- quality of services;
- early detection, referral, and treatment of danger signs
- morbidity and mortality
- management of resources (human, financial, etc)

OASIS II Study Design

- Mixed methods
- Retrospective Case-Control- exposure to on-time CHW visits
- Repeated Measures with & without MGV-Net
- Action Research Component
- Repeated Measures of Paper vs. SMS

Malaria in Uganda- Action Research

Key measure of success	Pre-intervention
Patients treated who were not tested or tested negative	**90%**
Patients treated who tested negative	**48%**
Patients treated who tested positive	**10%**

Malaria in Uganda- Action Research

Key measure of success	Pre-intervention	Post-intervention
Patients treated who were not tested or tested negative	**90%**	**32%**
Patients treated who tested negative	**48%**	**12% in Q1** **18% in Q4**
Patients treated who tested positive	**10%**	**30% in Q1** **58% in Q4**

Challenges and Lessons Learned

- Human capacity
- Clinician engagement
- Reliable electricity, computers, connectivity
- Need interoperability
- Need maturity model
- Gov't policies

Shared Terminology and Resources

- www.maternalconceptlab.com
- www.openmrs.org
- www.childcount.org

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MIT OpenCourseWare
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HST.S14 Health Information Systems to Improve Quality of Care in Resource-Poor Settings
Spring 2012

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