Uncovering Global Health Research Opportunities in Ethiopia

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Objectives

- To describe my experiences as a Cuso International Volunteer at Goba Referral Hospital in Ethiopia

- To discuss my 6 month workplan April to October 2018.

- To review some of the available national and local hospital statistics and possible priority concerns.

- To identify potential areas for future engagement with Mada Walabu University in the context of global health collaboration and the Lancet Commission for the Education of Health Professionals for the 21st Century
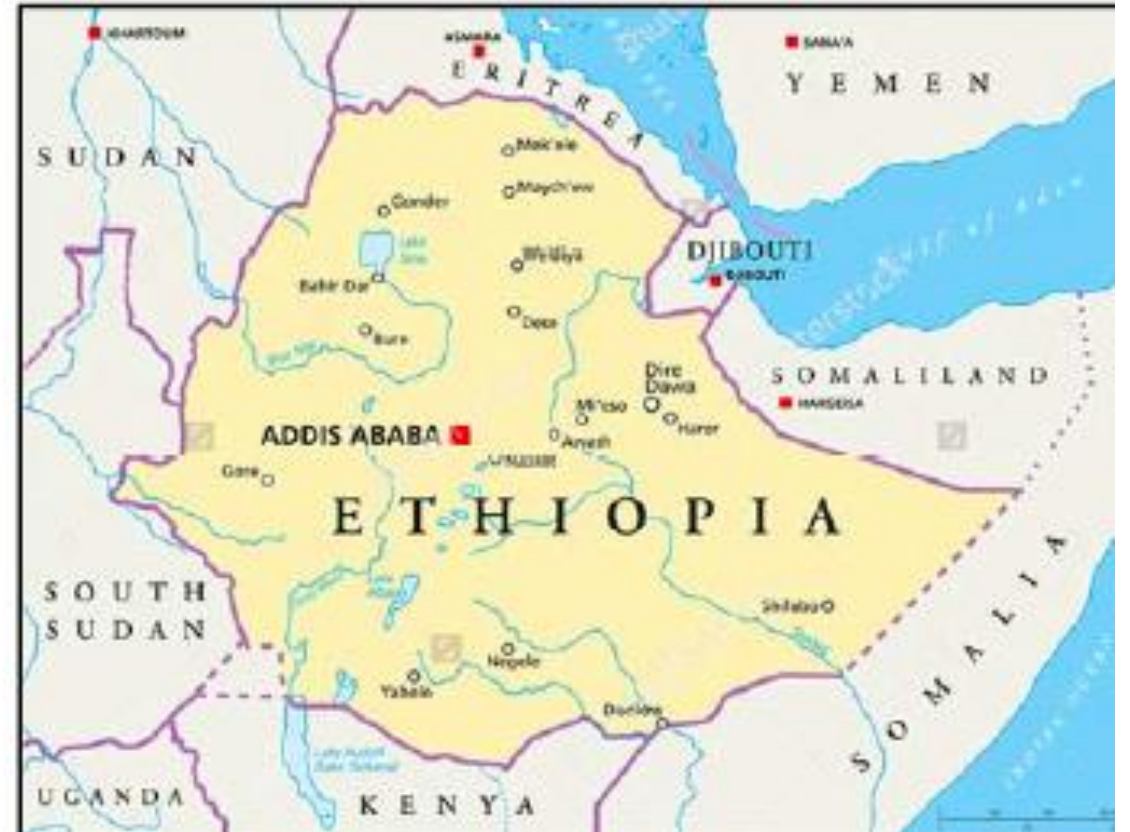
Ethiopia

Goba, Bale Zone, Oromia Region

Regional States & *Chartered Cities* of Ethiopia

Cuso International is a not-for-profit development organization that works to eradicate poverty and inequality through the efforts of highly skilled volunteers, collaborative partnerships and compassionate donors.

My Cuso Journey

- April to October 2018
- Goba Referral Hospital
- Needs Assessment – over 4 weeks
  - Formal Meetings
  - Discussions with colleagues
  - Chance encounters
  - Attendance at morning rounds with Obstetrics and Gynecology physicians
  - Key documents (Transformational Guidelines, GRH assessment report, Ethiopia Health and Demographic Survey)

Key Personal Projects

- Review hospitalization statistics

- Infection Control Assessment and training proposal

- Informal teaching/Journal Article review ("Journal Club")

- Respond to specific requests
  - Position descriptions
  - Notes re emergency preparedness

Some Demographics

- Population: 108,386,391 (July 2018 est.)
- Ethnic Groups: Oromo 34.4%, Amhara 27%, Somali 6.2%, Tigray 6.1%, Sidama 4%, Gurage 2.5%, Welaita 2.3%, Hadiya 1.7%, Afar 1.7%, Gamo 1.5%, Gedeo 1.3%, Silte 1.3%, Kefficho 1.2%, other 8.8% (2007 est.)
- Religion: Ethiopian Orthodox 43.5%, Muslim 33.9%, Protestant 18.5%, traditional 2.7%, Catholic 0.7%, other 0.6% (2007 est.)
- Median Age: 18 years

ETHIOPIA

2016 Demographic and Health Survey

- The 2016 EDHS is the 4th Demographic and Health Survey conducted in Ethiopia since 2000 as part of The DHS Program.

- It is designed to provide estimates at the national level, urban and rural areas, and for each of the 9 regions and 2 administrative cities.

ETHIOPIA

FAST FACTS FROM THE 2016 ETHIOPIA DHS

The 2016 Ethiopia DHS (EDHS) is designed to provide data for monitoring the population and health situation in Ethiopia. The 2016 EDHS is the 4th Demographic and Health Survey conducted in Ethiopia since 2000.
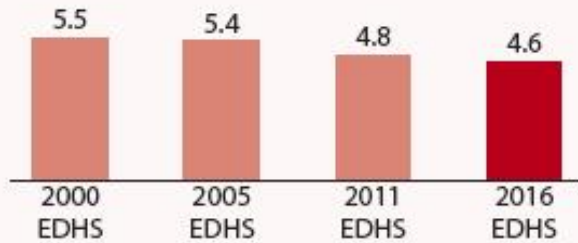
FERTILITY

Women in Ethiopia have an average of 4.6 children.

Fertility and Family Planning

Women in Ethiopia have an average of 4.6 children. Fertility has declined from 5.5 children per women in 2000.
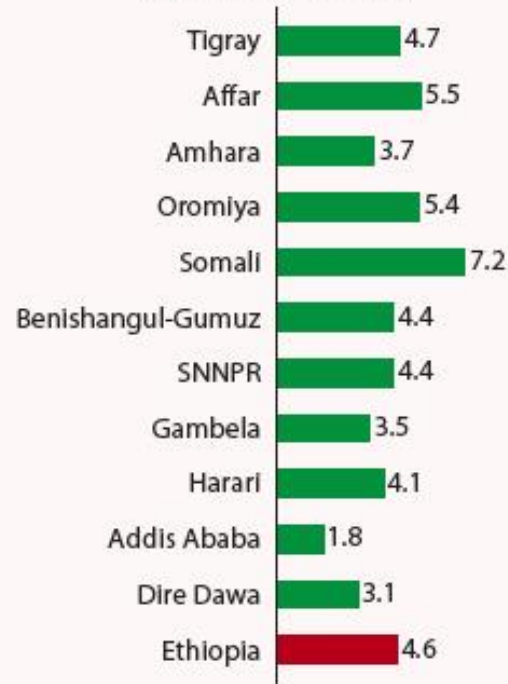
Regionally, fertility ranges from 1.8 children per woman in Addis Ababa to 7.2 children per woman in Somali.
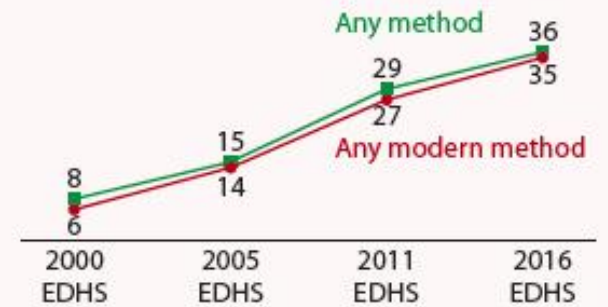
Use of modern family planning methods among married women has improved fivefold from 6% in 2000 to 35% in 2016.
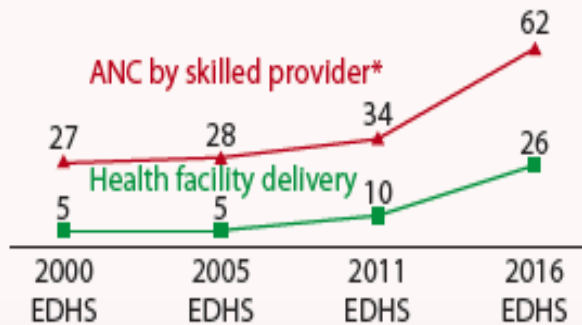
Trends in Total Fertility Rate
Births per woman for the three-year period before the survey

Year	Rate
2000 EDHS	5.5
2005 EDHS	5.4
2011 EDHS	4.8
2016 EDHS	4.6

Total Fertility Rate by Region
Births per woman for the three-year period before the survey

Region	Rate
Tigray	4.7
Affar	5.5
Amhara	3.7
Oromiya	5.4
Somali	7.2
Benishangul-Gumuz	4.4
SNNPR	4.4
Gambela	3.5
Harari	4.1
Addis Ababa	1.8
Dire Dawa	3.1
Ethiopia	4.6

Trends in Family Planning Use
Percent of married women age 15-49 using family planning

Any method: 8, 15, 29, 36
Any modern method: 6, 14, 27, 35

	2000 EDHS	2005 EDHS	2011 EDHS	2016 EDHS
Any method	8	15	29	36
Any modern method	6	14	27	35

Maternal and Child Health

More Ethiopian women are receiving antenatal care (ANC) from a skilled provider since 2000. Health facility deliveries have more than doubled from 10% in 2011 to 26% in 2016.
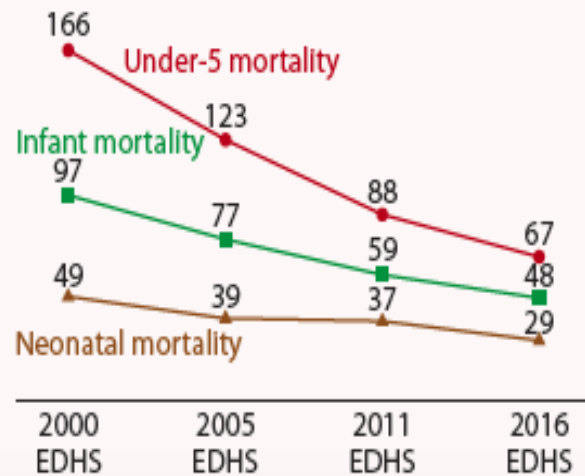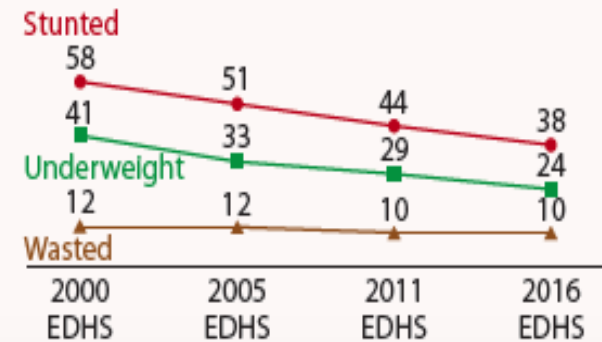
Childhood mortality rates have declined since 2000. 1 in 15 Ethiopian children does not survive to their 5th birthday.

Children's nutritional status has improved since 2000. Currently, 38% of children under 5 are stunted, 24% are underweight, and 10% are wasted.

Trends in Maternal Health Care
Percent of live births in the five years before the survey

ANC by skilled provider*

27   28   34   62

Health facility delivery

5   5   10   26

| 2000 EDHS | 2005 EDHS | 2011 EDHS | 2016 EDHS |

*% of women for most recent live birth

Trends in Childhood Mortality
Deaths per 1,000 live births for the five-year period before the survey

Under-5 mortality

166   123   88   67

Infant mortality

97   77   59   48

Neonatal mortality

49   39   37   29

| 2000 EDHS | 2005 EDHS | 2011 EDHS | 2016 EDHS |

Trends in Childhood's Nutritional Status
Percent of children under five, based on 2006 WHO Child Growth Standards

Stunted

58   51   44   38

Underweight

41   33   29   24

Wasted

12   12   10   10

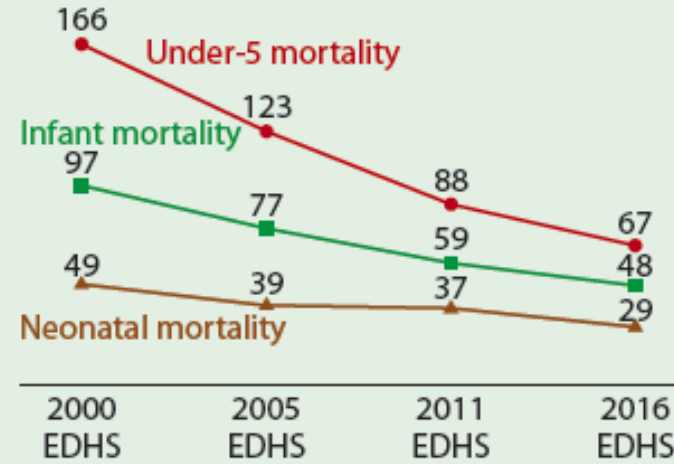| 2000 EDHS | 2005 EDHS | 2011 EDHS | 2016 EDHS |

Childhood mortality has sharply declined since 2000. **1 in 15** Ethiopian children dies before their 5th birthday.
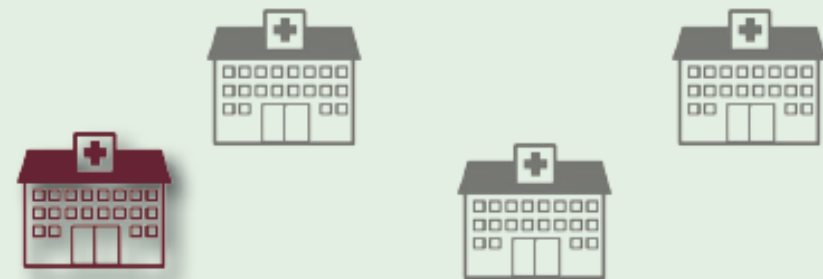
Trends in Childhood Mortality

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Neonatal mortality
49
39
37
29

2000 EDHS	2005 EDHS	2011 EDHS	2016 EDHS

MATERNAL HEALTH

1 in 3 women age 15-49 attend **4+ antenatal care visits**.

1 in 4 births are delivered in a **health facility**.

Goba Referral Hospital

Operating Theatre
(1 of 2 rooms)

Sterilization and Cleaning

Autoclaves

Equipment Cleaning

Scrub Sink

Delivery Room

Laundry Building
Washers and Dryers

Kitchen

Kitchen Storage

Previous Training Messages

APPLY 5S
2,SYSTEMATIZE
3,SWEEP
4,STANDERDAIZED
5,SELF.DECIPLINE

Wood Stove
Non-Functioning Chimneys

Injera Preparation

Sink and Water supply
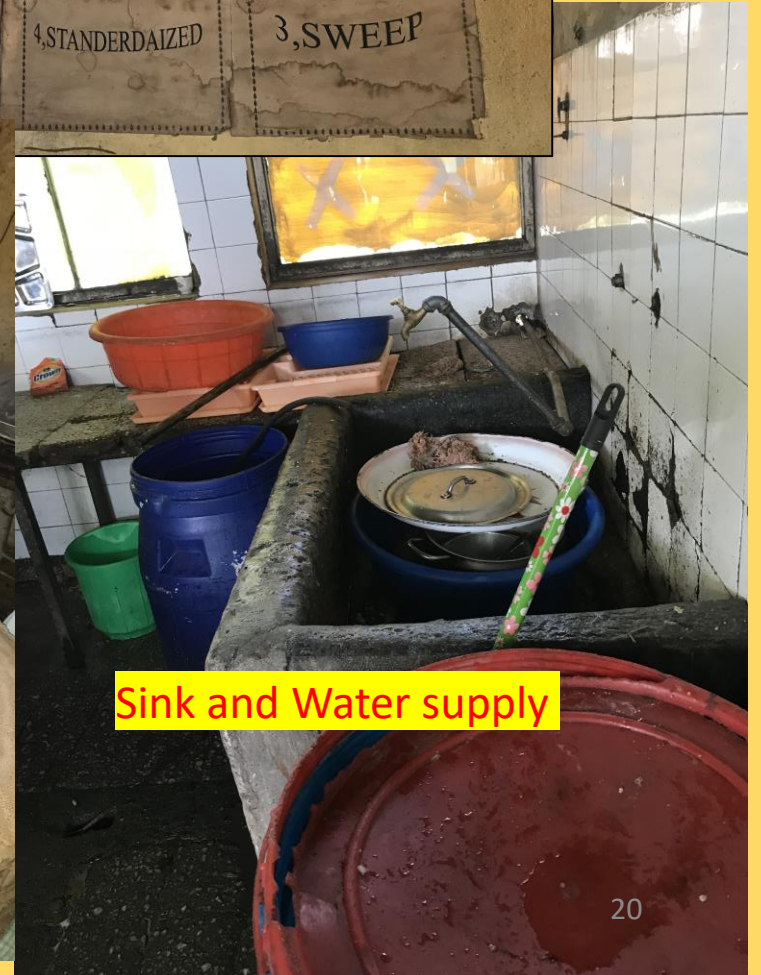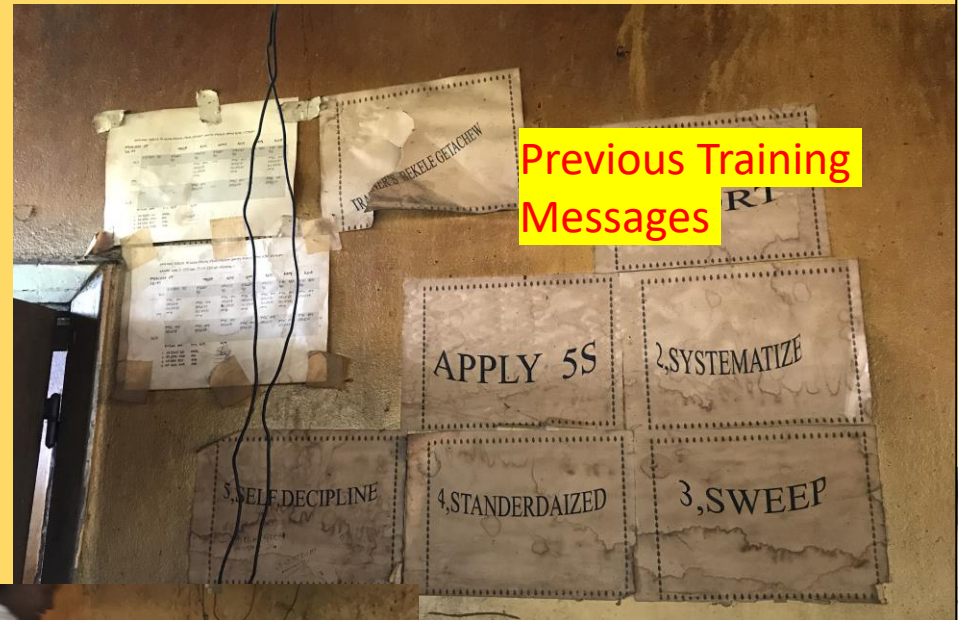
Water, Handwashing Facilities, Hygiene and Alternatives

Infection Prevention and Control Concerns

Water and Waste Management

Water Reservoir

Incinerator

Waste Pit

Placenta Pit

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The New Goba Referral Hospital

Hospital Admission Statistics Review: Objectives

To demonstrate trends in selected disease presentations over the four year time period 2009-2010

To identify potential areas for improvement in data collection

To suggest areas for systematic surveillance and research

Introduction

- One way to understand the impact of illnesses on a community is to identify the trends from data collected when service is provided.

- The Health Information Management System (HMIS) which is used by Ministry of Health provides a systematically collected repository of information.

- At Goba Referral Hospital, information is available for a number of years, but there is frequent turnover of personnel and changes related to ongoing transformation of the health system. Examination of HMIS data within the last 3 to 4 years is probably most reflective of current status of health and related issues.

- Additional information from Health Centres or District Hospitals, as well as estimates of the local population served could provide a better picture.

Methods

- Service information from HMIS for the years 2007 to 2010 (Ethiopian Calendar) from the months Hamle to Sene (the fiscal year equivalent to July 1 to June 30, 2015 to 2018 of the Western Calendar) were extracted to MS Excel files.

- Files containing tallies of Inpatient Department diagnoses (IPD) and Outpatient Department diagnoses (OPD) were obtained. No personal identifying information is included in these files.

- This information has been collected from various hospital units and entered monthly. With an anticipated transition to a new data collection system (District Health Information System – DHIS) for the new fiscal year, some information for the most recent months representing May and June may not have been entered. It is anticipated that information for the new fiscal year beginning in Hamle (July) will be entered into the new system.

Methods (continued)

- Tallies for selected disease categories representative of key services provided by Goba Referral Hospital were copied and compiled into multi-year files to enable graphs demonstrating disease trends to be created.

- Graphs are presented in a variety of ways to demonstrate notable features. These have been discussed with selected individuals to clarify temporal features of interest.

- Hypotheses regarding trends were noted and discussed.

Results

- Selected areas of activity within Goba Referral Hospital are presented to highlight the potential for demonstrating trends.

- Not all disease categories are presented.

Diarrheal Disease

- The several categories of <mark>Diarrheal Disease</mark> demonstrate some key elements or concerns.
  - Defined peaks of activity that reflect community events/outbreaks
  - Opportunities for misclassification
  - Elements that can be used for surveillance and planning purposes
  - The challenge of inadequate rigour applied to definition, coding and recording.

OPD Cases of Diarrheal Illness without dehydration
Goba Referral Hospital
2007-2010
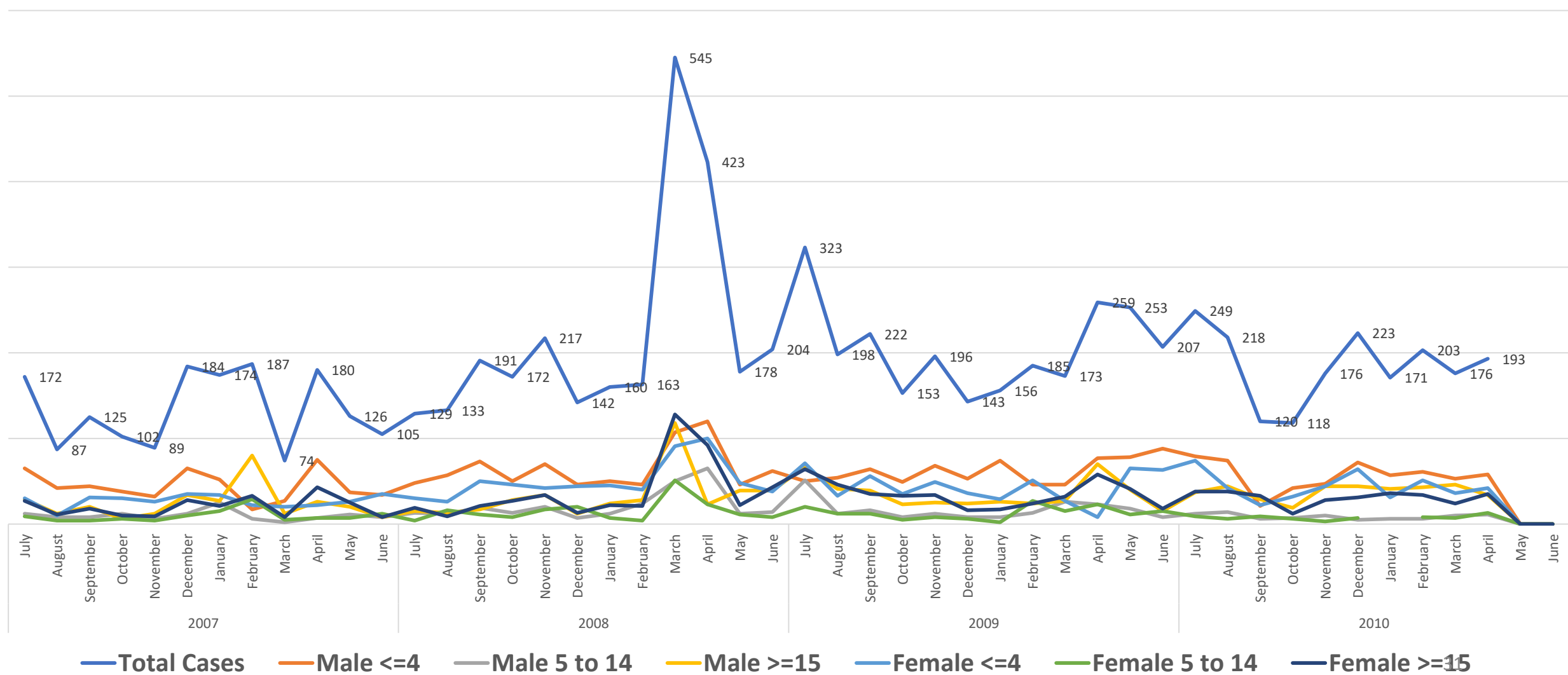
Obstetric Trends

- Inpatient spontaneous normal deliveries and more complicated deliveries occur at a steady frequency over time.

- Looking at all deliveries or events when those women visiting outpatients and complicated deliveries are included, there is a gradually increasing trend over time.

Single Spontaneous Vertex Delivery and Other Deliveries 2007-2010 Goba Referral Hospital
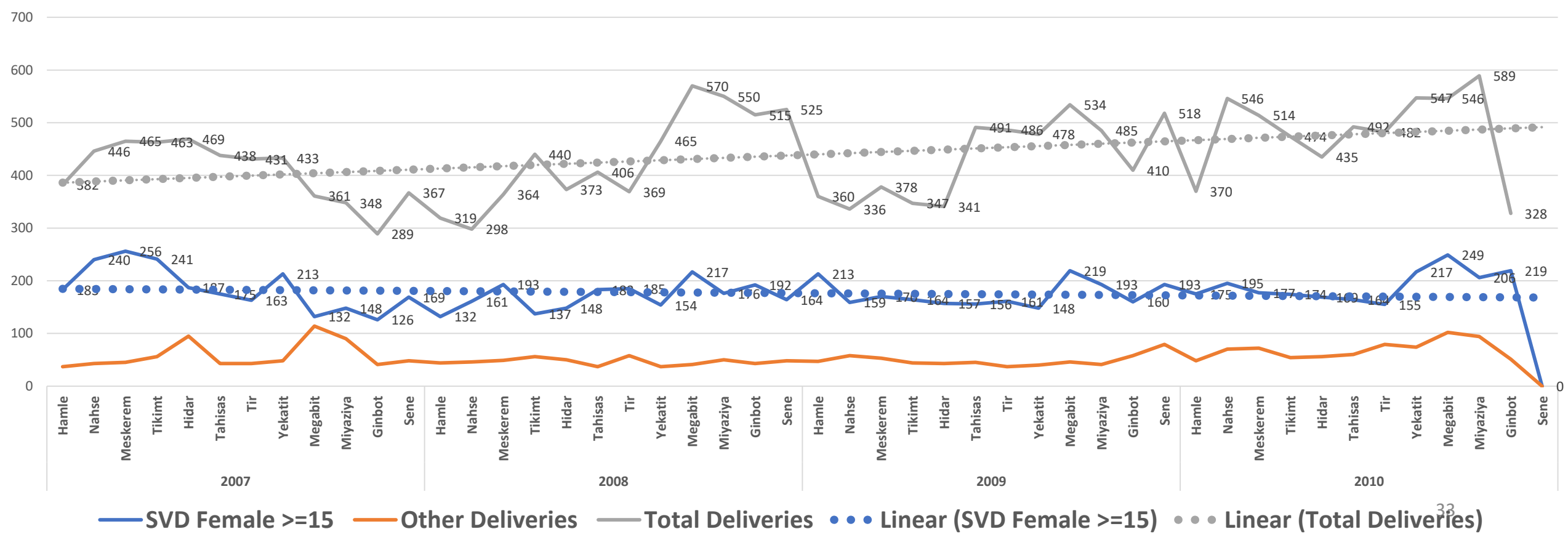
Admissions for Abnormal Conditions of Pregnancy (excluding OPD) Goba Referral Hospital 2007-2010
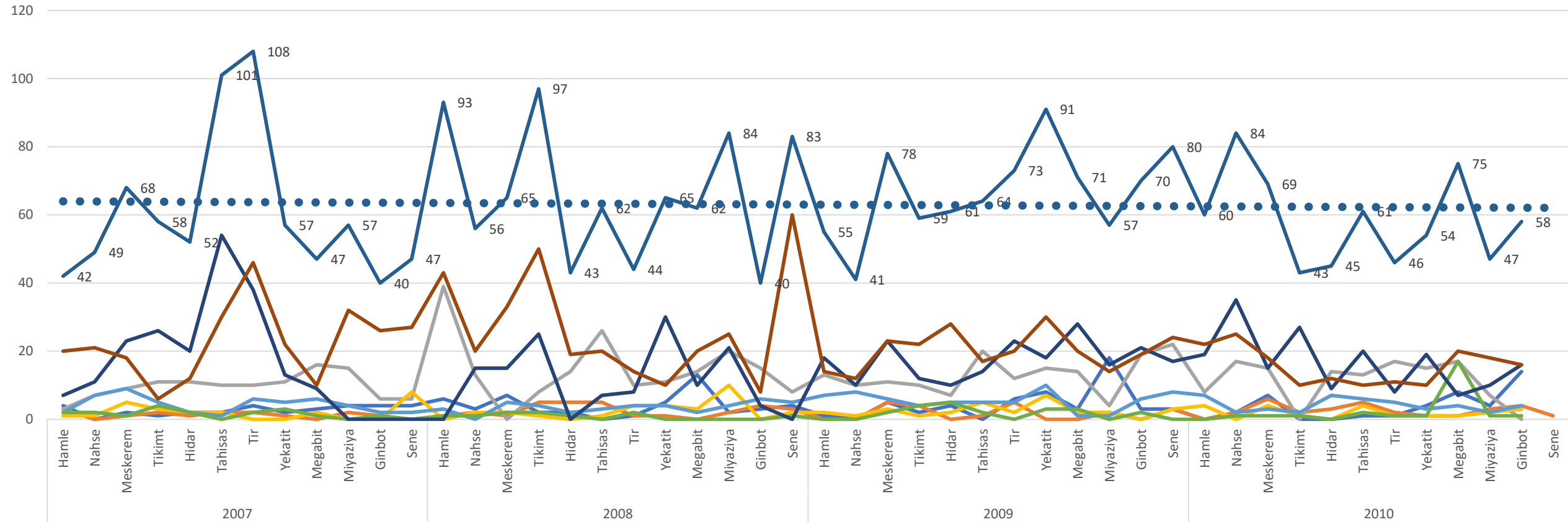
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Medical and other abortions

- If only inpatient diagnoses are included, there is a generally decreasing trend.
- Notable in 2010 is that mis-classification of types can occur easily, showing up as a peak of 12 cases in March. It is likely that mis-classification occurs regularly.
- A six month moving average shows a declining trend
- If both inpatient and outpatient procedures are included there is a peak of 116/month in 2008, general fluctuation and an overall decreasing trend
- It is possible that more medical abortions are occurring among women who don't seek attention at the hospital (i.e. through access to required medications at private clinics)

IPD Admissions and OPD Visits
All Medical Abortions (Safe Abortions) and Other Abortions
By Month 2007-2010 (Ethiopian Calendar)
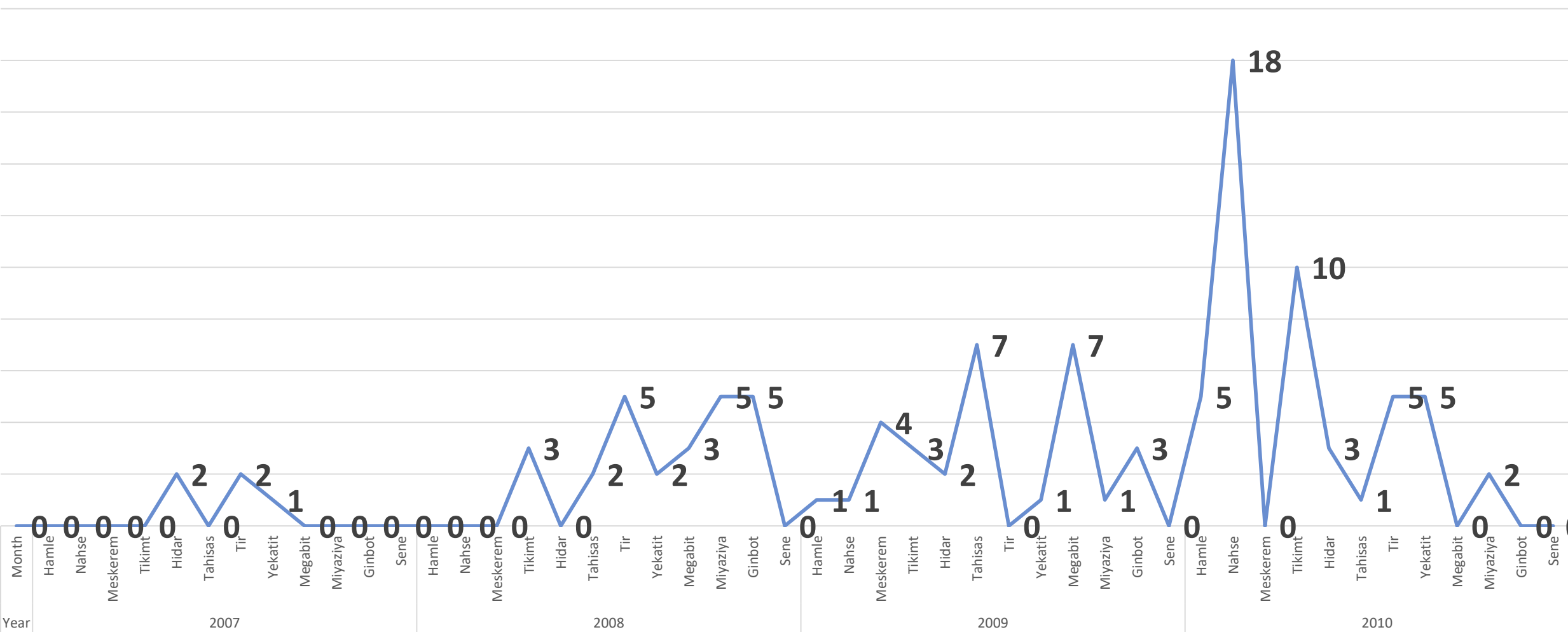## Goba Referral Hospital
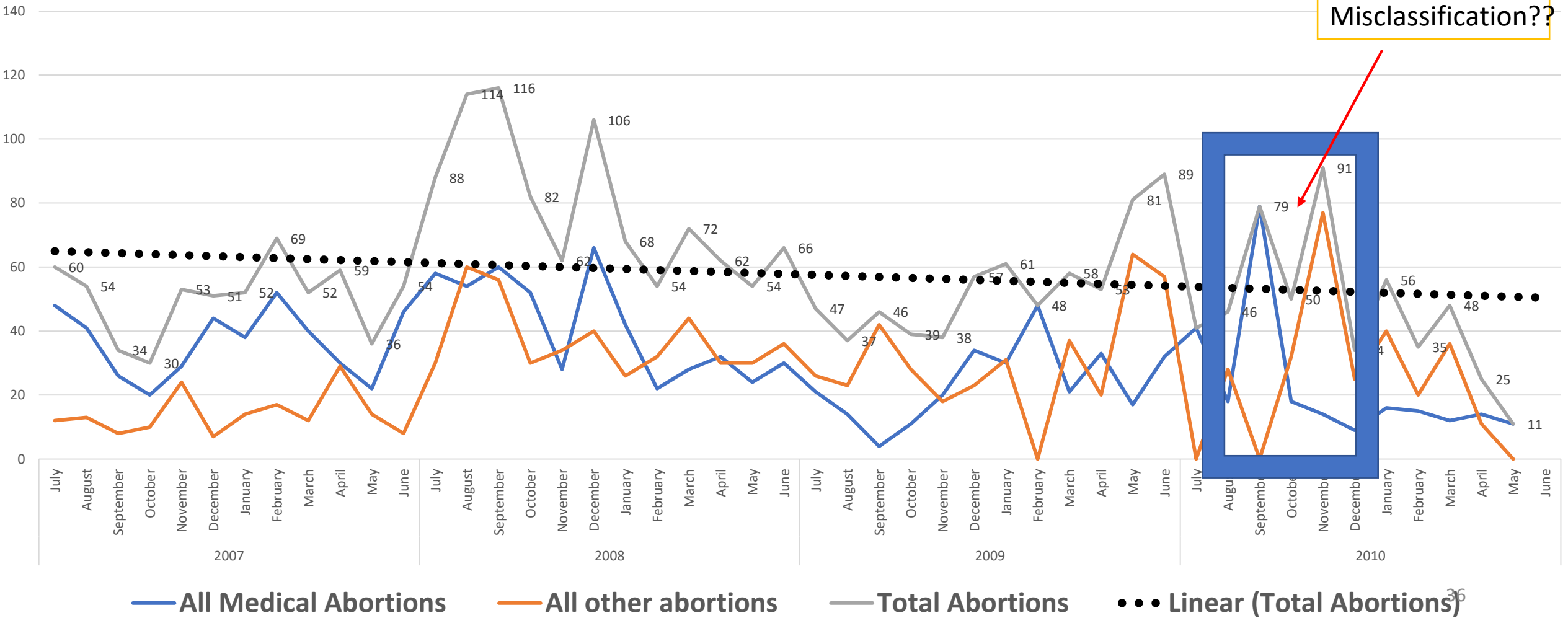
Perinatal Conditions

- These conditions demonstrate increasing trends over time when tallied together

- When diagnoses are taken individually there does not seem to be any specific trend, although "Neonatal Sepsis" stands out as significantly contributing.

- It is unclear how much mis-classification may be occurring. Total Congenital Abnormalities is a case in point. There is a fluctuating number of cases which does not seem to represent the volume of anecdotal clinical experience. Is there a need for more active surveillance of specific conditions?

Perinatal Conditions
Goba Referral Hospital
2007-2010
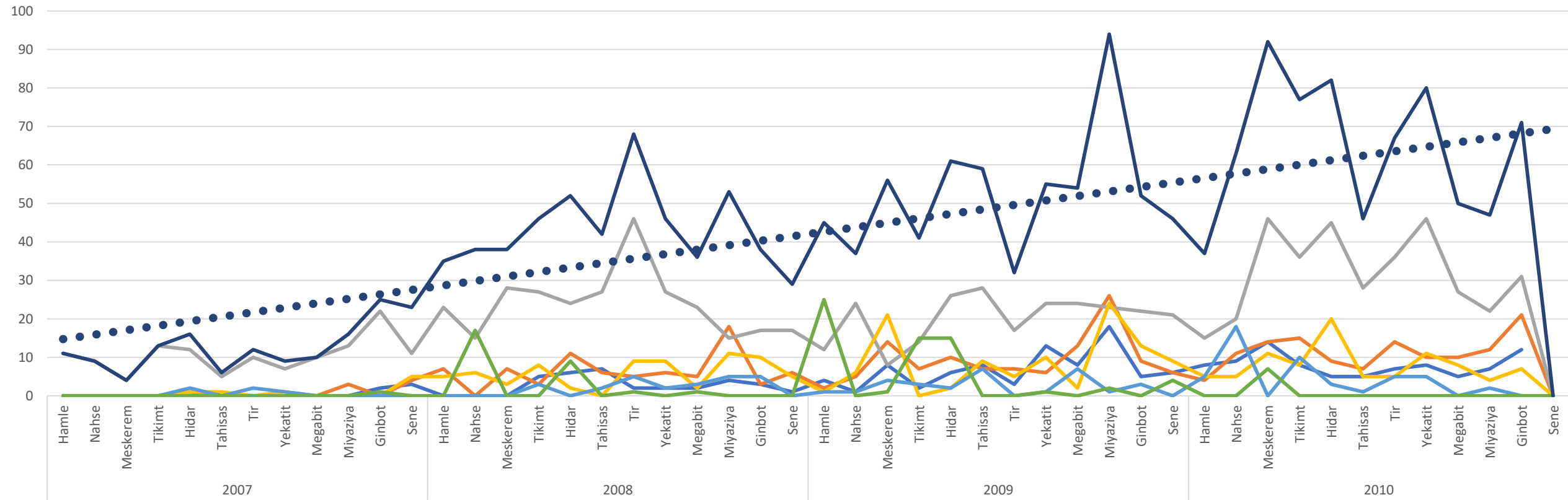
Legend:
- Total Birth Asphyxia
- Total Prematurity
- Total Neonatal Sepsis
- Total LBW
- Total Congenital Abnormalities
- Total Other or Unspecified Perinatal Conditions
- Total All Perinatal Conditions
- Linear (Total All Perinatal Conditions)

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Total Congenital Abnormalities
Goba Referral Hospital
2007-2010

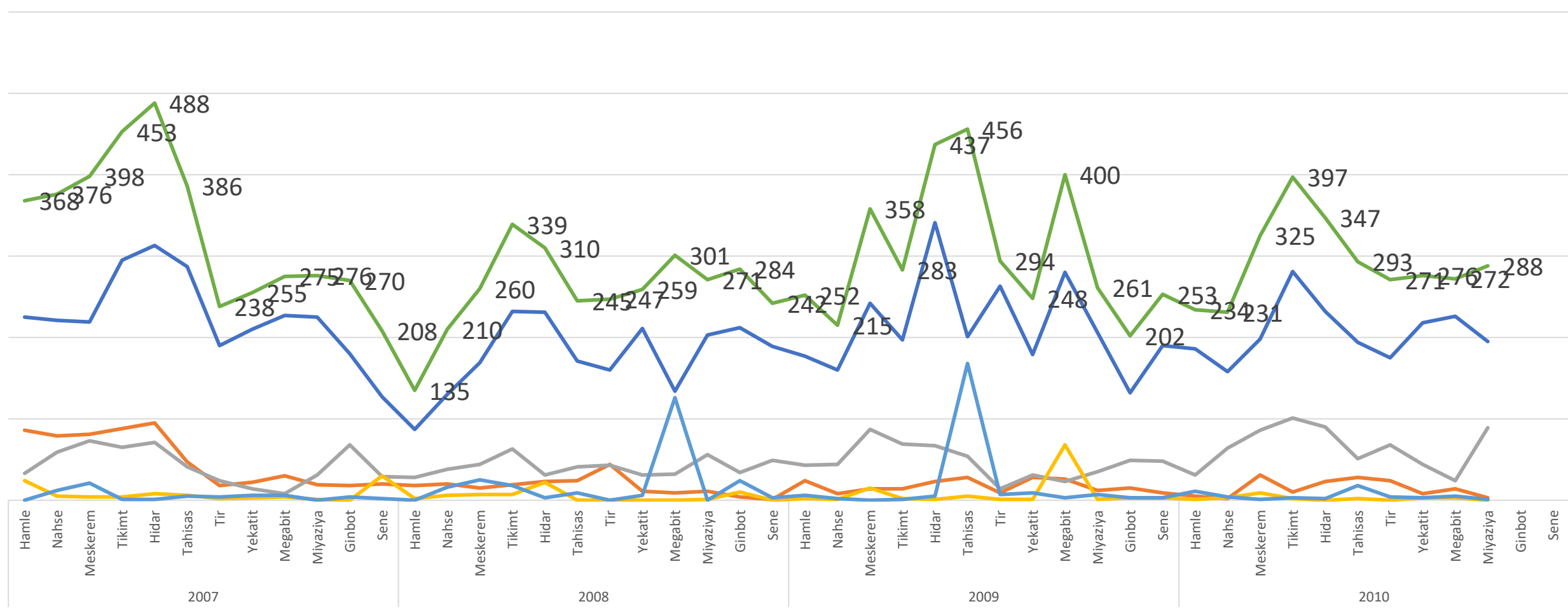— Total Congenital Abnormalities

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OPD Visits for All Respiratory Conditions
Goba Referral Hospital
2007-2010

Mental Health, Epilepsy and Other Nervous system disorders

- Lack of definition in HMIS makes it difficult to assess the actual conditions being captured in data.

- Mental Health visits to the OPD fluctuates but increasing. Does this reflect ability to provide supportive services or an actual increase in cases?

- Epilepsy: note the apparent exponential increase in cases among males and females >=15. Is this mis-classification? Could it be malaria presenting as seizures? Or is simply reflective of increasing participation from the community?

- The "Other" category too undefined to allow interpretation.

OPD Visits for Mental and Behavioural Disorders
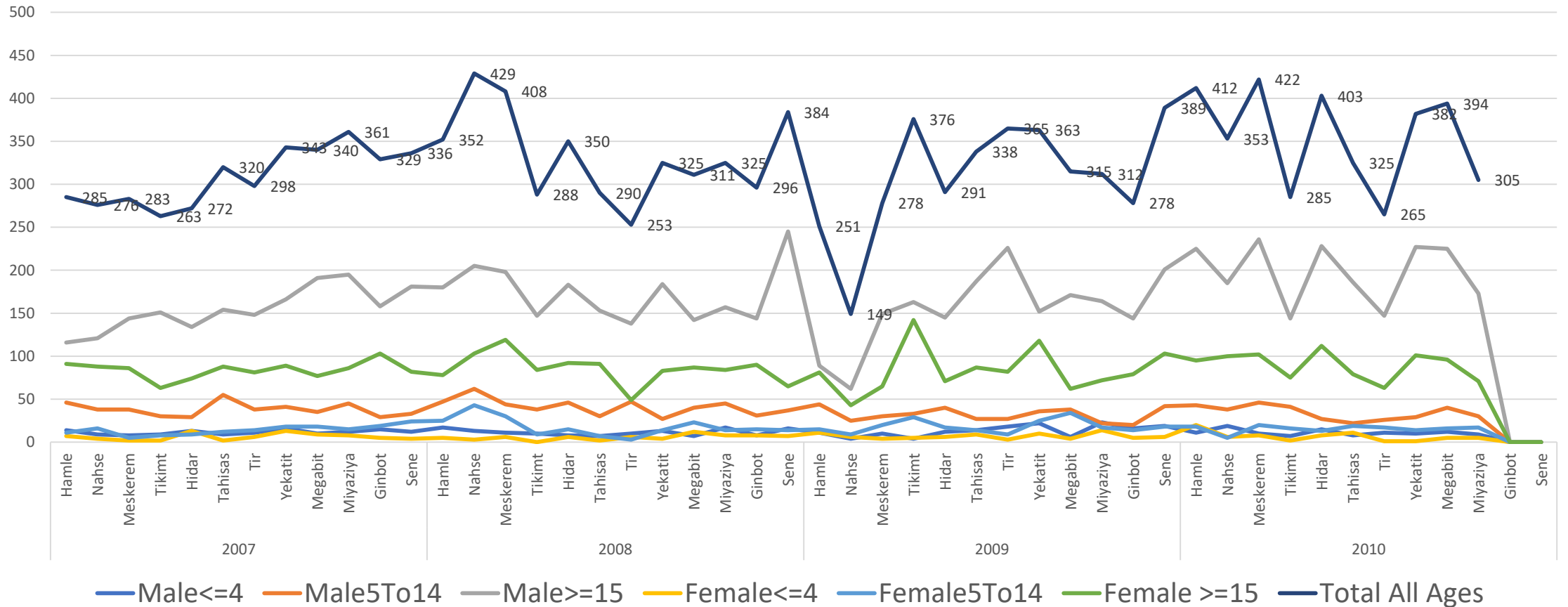Goba Referral Hospital
2007-2010
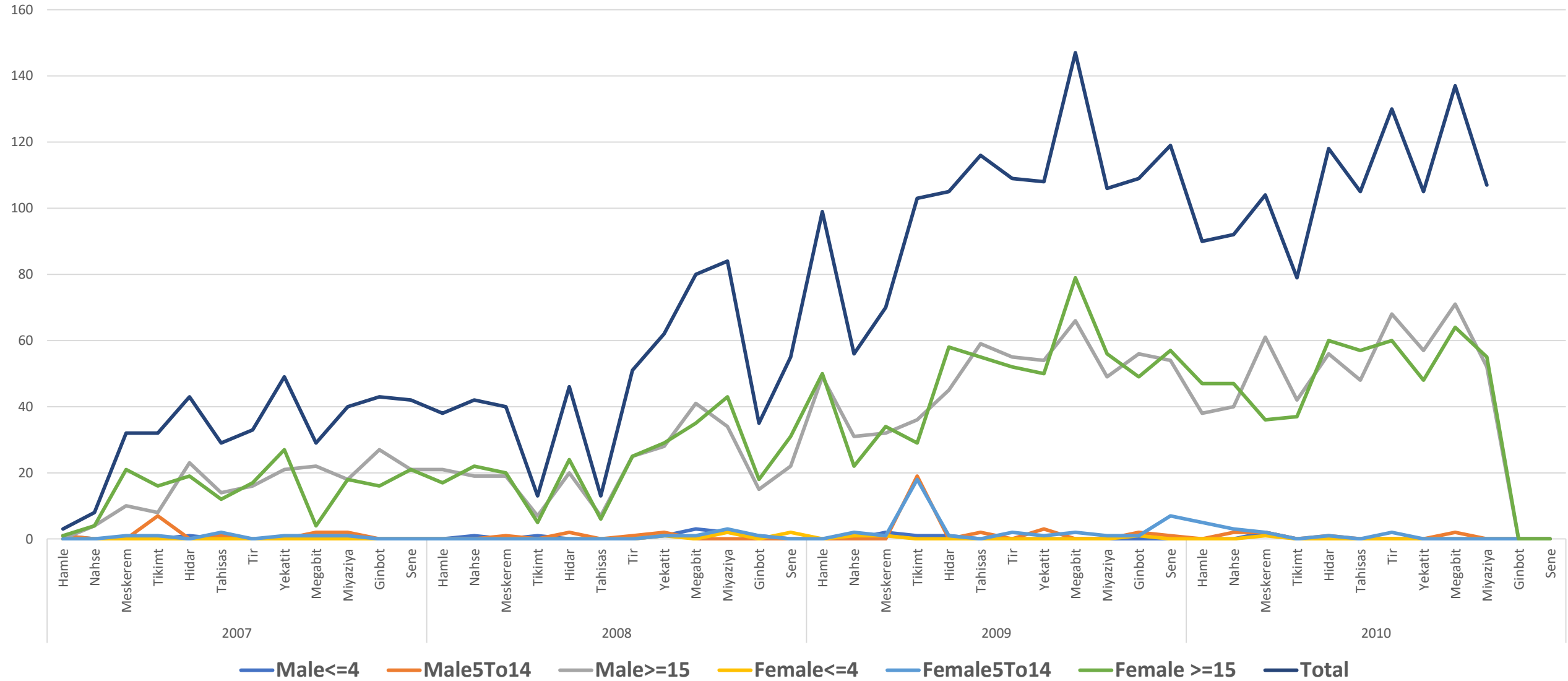
Trauma, Burns, Poisoning, Road Traffic Accidents

- Trauma cases occur fairly constantly, but the degree of severity of trauma and the nature of interventions are lacking.

- Road Traffic Accidents are on the increase

- Injury Severity Scores should be considered as a surveillance tool.

- Research should be focused on these areas

- There may be opportunities for preventive intervention after better definition of the related issues.
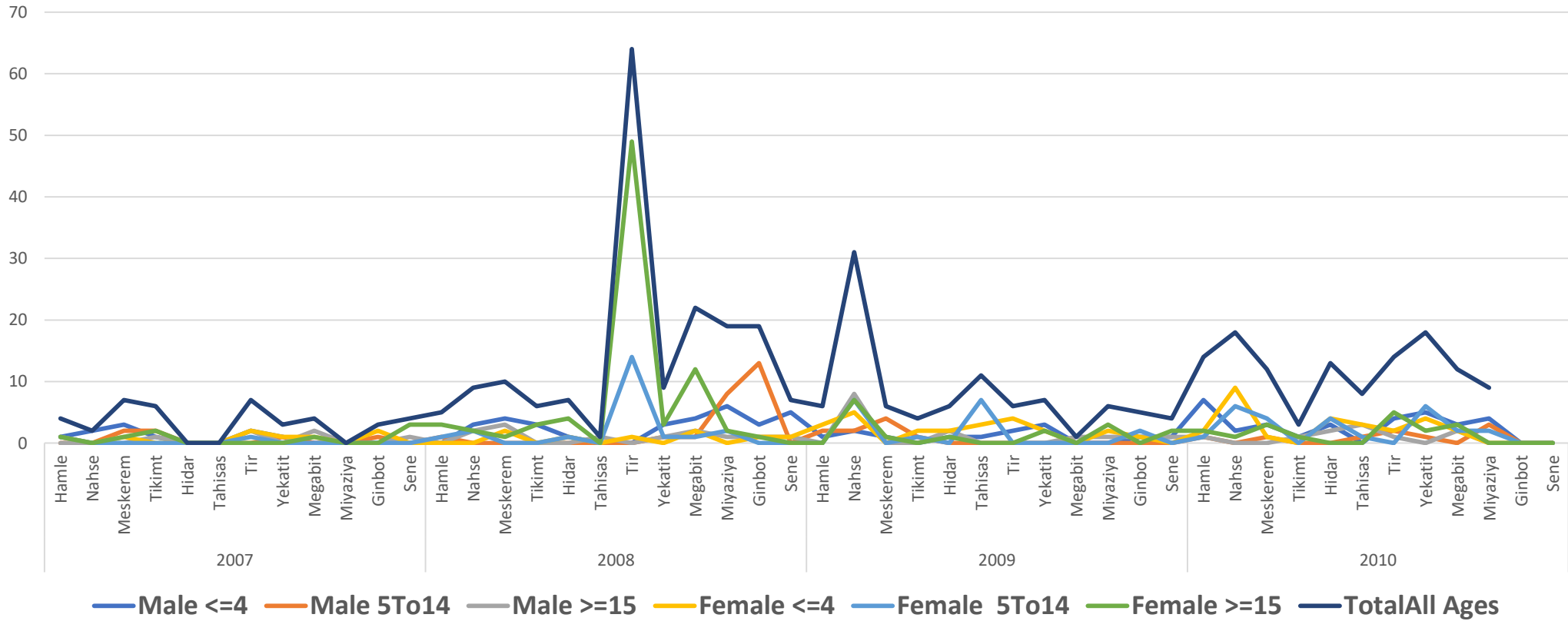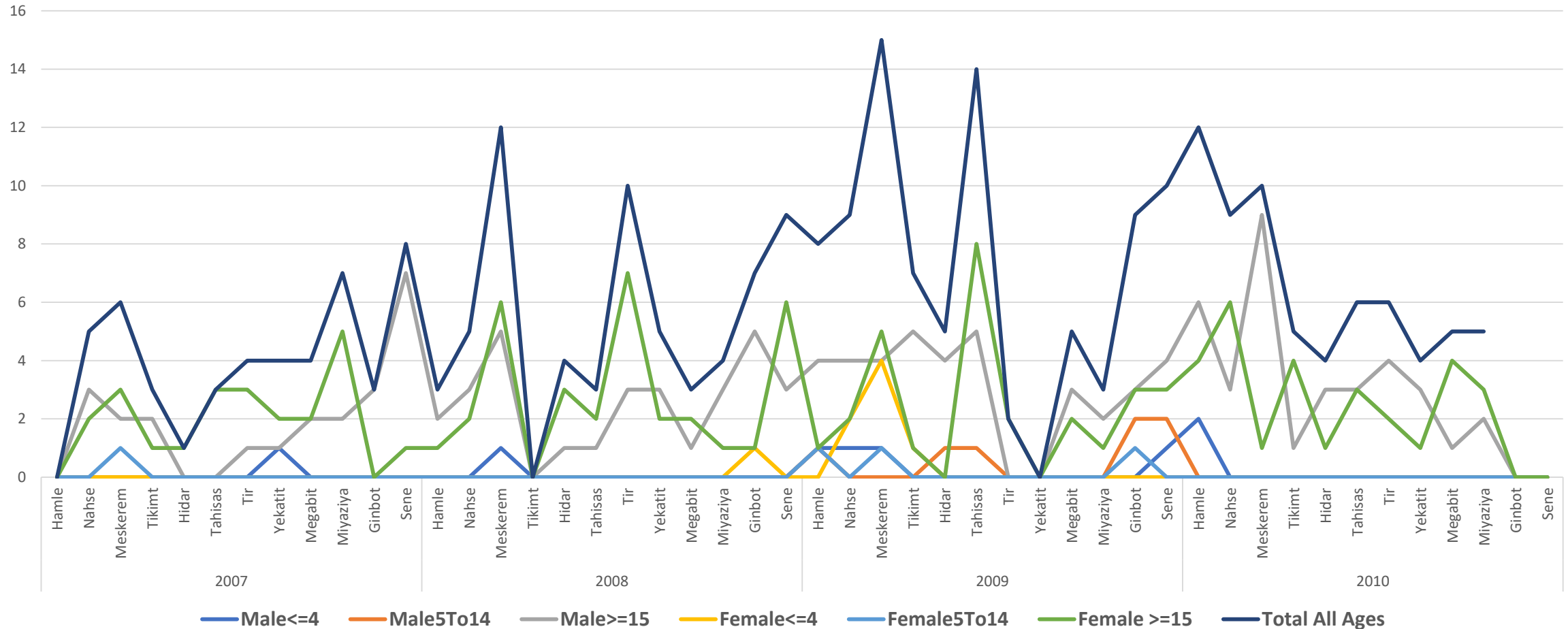
Outpatient Visits for Trauma
Goba Referral Hospital
2007-2010
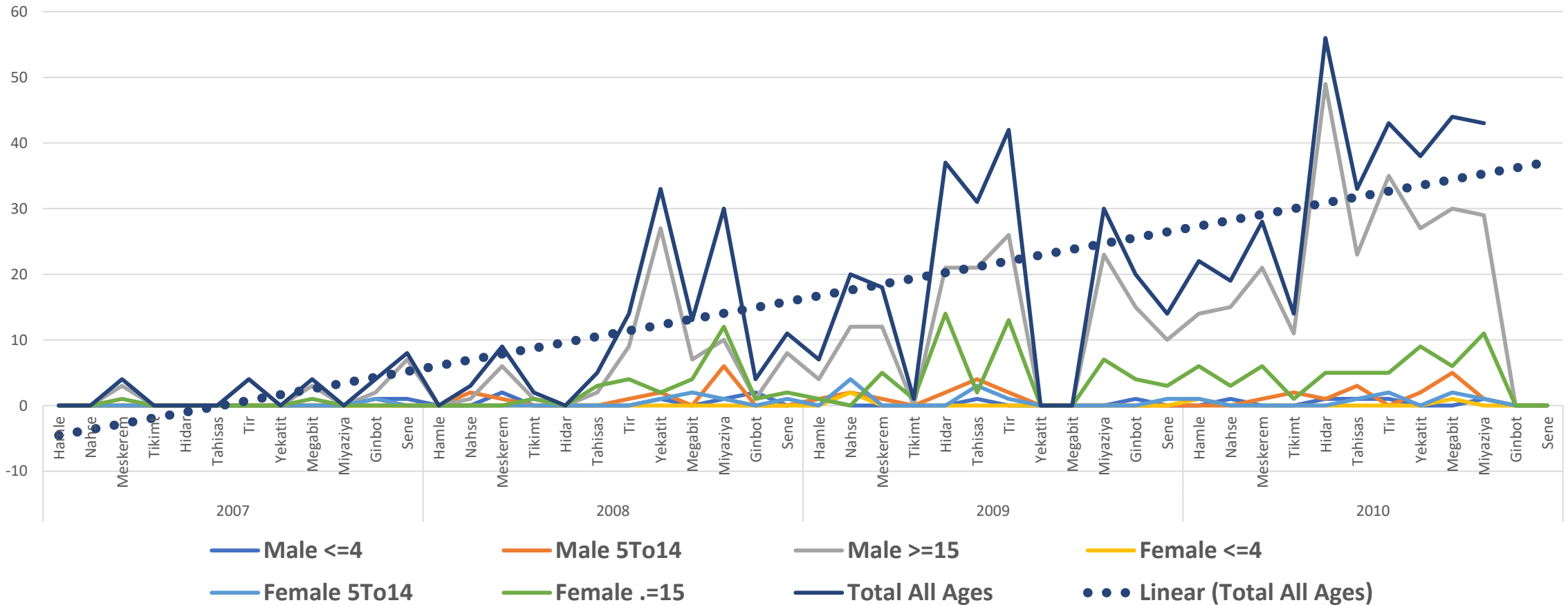
OPD Visits for Burns
Goba Referral Hospital
2007-2010

OPD Visits for Poisoning
Goba Referral Hospital
2007-2010

OPD Visits for Road Traffic Accidents
Goba Referral Hospital
2007-2010

Opportunities for Research

- Establish surveillance protocols for specific conditions of concern

- Support research initiatives
  - Congenital anomalies, especially neural tube defects
  - Neonatal sepsis
  - Infant mortality
  - Maternal mortality, selected morbidity
  - HIV and TB
  - Mental Health
  - Trauma/Injury Severity Scoring

- Collaborate with Regional Authorities to include data from health centres and district hospitals to develop a regional picture

Respond to research: Policy and Program Development

- Use data and experience to build the evidence base to focus on problem areas

- Think Prevention
  - Public Education
  - Advocacy for new laws; changes in policy; health promotion
  - Early Intervention

- Contingency Planning and Surge Capacity
  - Stockpile essential equipment and materials
  - Response planning and exercises

- Capital Equipment and Infrastructure
  - High cost equipment, renovations or reconfiguration may be required to respond to certain conditions (E.g. mass casualty events)
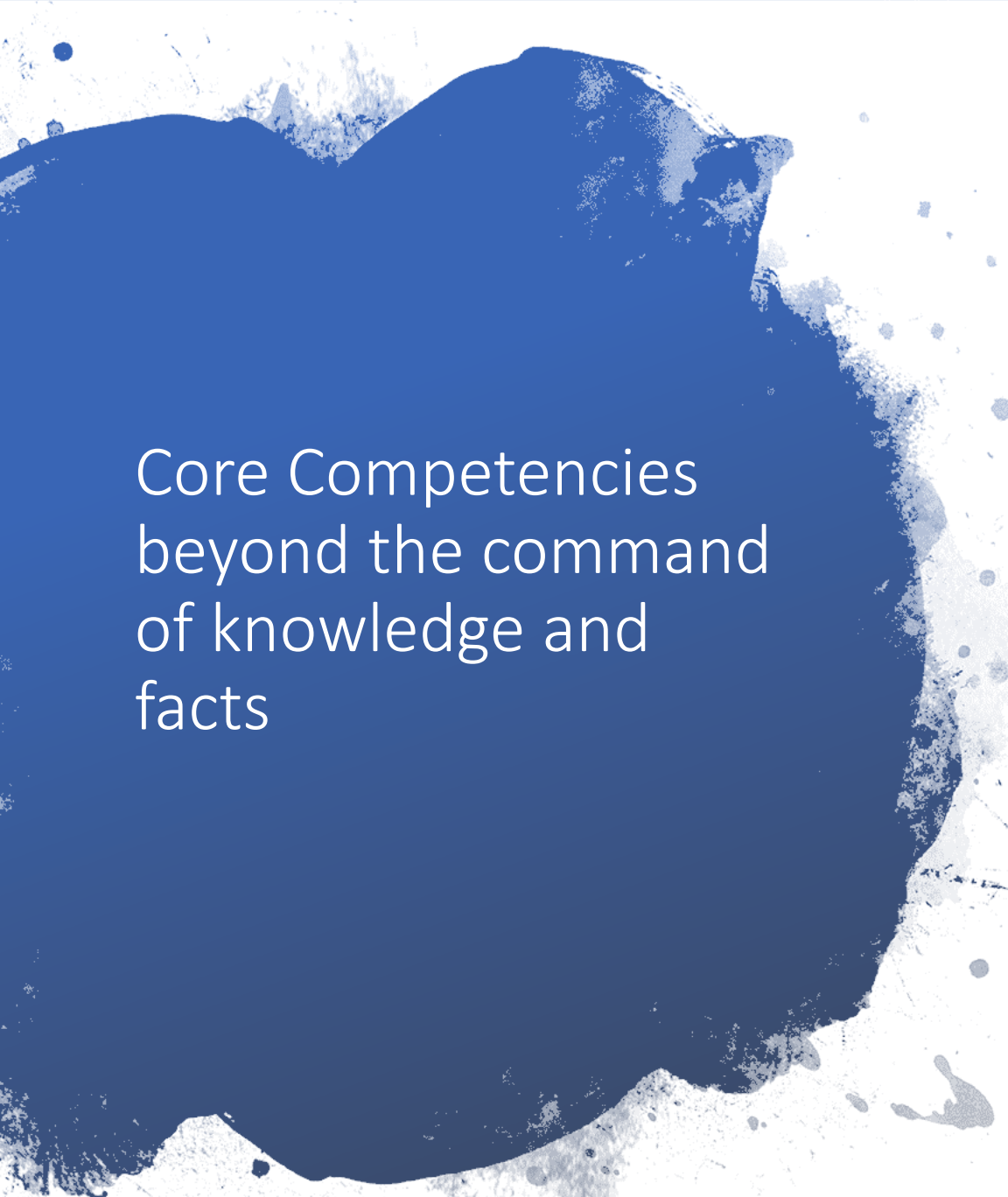
Requiring systems-based education
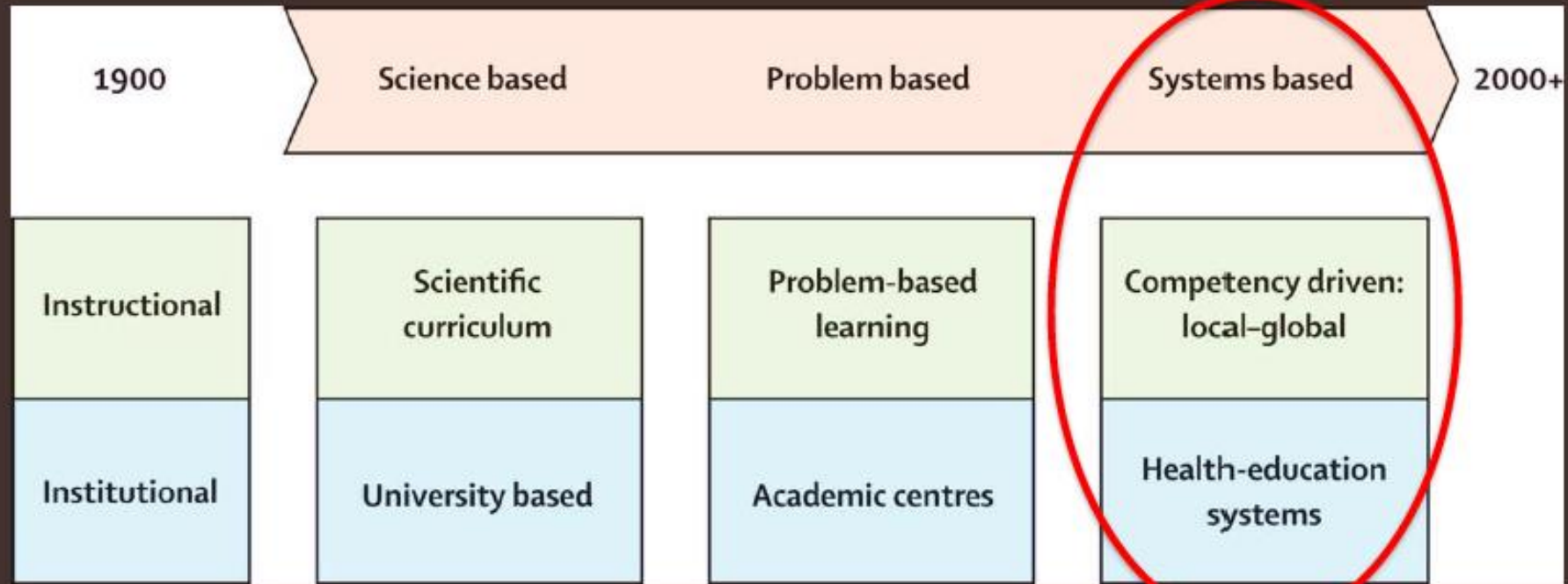
Graduates who are change agents

	Objectives	Outcome
Informative	Information, skills	Experts
Formative	Socialisation, values	Professionals
Transformative	Leadership attributes	Change agents

Table 3: Levels of learning

Core Competencies beyond the command of knowledge and facts

- Patient-centred care
- Interdisciplinary teams
- Evidence-based practice
- Continuous quality improvement
- Use of new informatics
- Integration of public health
- Research skills
- Policy
- Law
- Management
- Leadership.
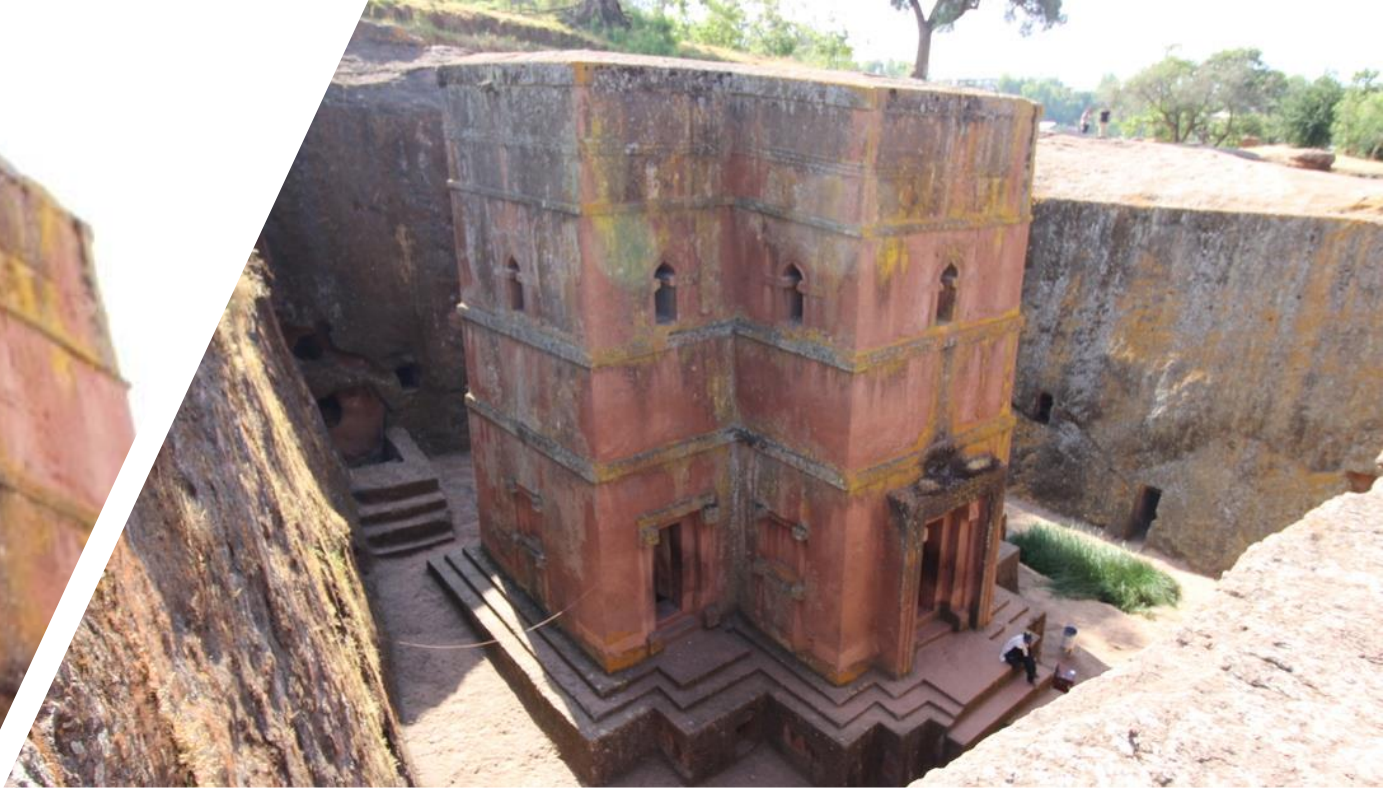
Questions?
dallison@nl.rogers.com