FIVE YEARS OF QUALITY IMPROVEMENT

in Village Tract Health Centers in Remote Areas of Myanmar

Final Report

Andrew G. Silver* and Hsa K'paw Thaw

Karen Department of Health and Welfare (kdhw.org)

Mae Sod, Thailand

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*Contact: poomawtaw@gmail.com

Health Status in Eastern Burma*

**The Long Road to Recovery: Ethnic and Community-based Health Organizations Leading the Way to Better Health in Eastern Burma*, Health Information System Working Group, comprising Back Pack Health Worker Team, Burma Medical Association, Karen Department of Health and Welfare, et al. 2015.

	EASTERN BURMA 2013[1]	BURMA 2012[2]	THAILAND 2012[2]
Crude Mortality Rate per 1,000 population	9.2	8.5	7.6
Under-5 Mortality Rate per 1,000 live births	141.9	52	13
Infant Mortality Rate per 1,000 births	94.2	41	11

[1]Survey by Health Information Systems Working Group, ***The Long Road to Recovery*, 2015**
[2]UNICEF, Country Statistics, 2013.

Leading Causes of Death in Eastern Burma – All Ages*

Malaria

Diarrhea

Acute Respiratory Infection (Pneumonia)

*Health Information Systems Working Group, op. cit.

Karen Health Care Network in 2016

- 226,744 target population
- 63 village tract health centers (VTHCs) for primary health care, serving 670 villages
- 1 secondary care center/teaching hospital
- 876 medics and community health workers
- 430 village health workers live and work in villages served by the clinics.
- 470 traditional birth attendants living in the villages are given further training and support.
- 2 physicians
- 12 Laboratory technicians

Some Results of First KDHW-IRC Logbook Review, 2012

(of 15 randomly selected clinics) Slide 1

Diarrhea

- Duration (number days) and frequency not recorded
- Blood pressure not recorded
- Signs of dehydration not recorded
- Metronidazole given for diarrhea when not dysentery
- Zinc supplement not given

Some Results of First KDHW-IRC Logbook Review, 2012 Slide 2

ARI-Pneumonia

- **Temperature and RR not recorded**
  - → **cannot know whether pneumonia is correct diagnosis (no X-ray machine)**
- **Blood pressure not recorded**
- **Antibiotics given for common URTI**
- **Severity of pneumonia not recorded**

What is Quality Improvement?

- In the United States, "Quality Improvement" is required by law for facilities providing health care for Medicare patients
- The focus for improvement is on actions taken by health care personnel in diagnosis and treatment of disease
- Similar programs are called "Quality Management," in the United Kingdom, and in New Zealand "Quality Assurance," but these terms also sometimes are used for quality control
- "Quality Control" in industry is completely different. The focus is on detecting and rejecting faulty products,

  or, in laboratories, detecting erroneous findings

Example of Quality Improvement for Medicare in USA Slide 1

Horner, J.K., Wood, D., Hanson, L.C., Wood, D., Silver, A.G., and Reynolds, K.S.)
Using quality improvement to address pain management practices in nursing homes.
Journal of Pain and Symptom Management (2005), 30(3):271-7

Quality indicators for care of residents in pain in 9 nursing homes:

- **Percentage of residents in pain assessed during a 3-week period**
- **Percentage of residents in pain receiving pain medication other than acetaminophen (paracetomol) during the period**
- **Scheduling and type of medication: opioids, NSAIDs, adjuvants, other**

Example of Quality Improvement for Medicare in USA

Slide 2

5-Month Intervention Schedule

1. First educational workshop at each facility with clinical team including gerontologist, nurse practitioner, and pharmacist
   - Provided tool kit with pain assessment forms, equianalgesic tables, etc.
   - Given baseline data on quality indicators
   - Asked to develop action plans using Plan-Do-Study-Act cycles (See Deming.org)
2. Conference call after one week to discuss action plans
3. Teleconference after one month with physicians and other providers at facilities on pharmacological management of pain
4. During third month nurses and nursing assistants participated in teleconference on pharmacological and non-pharmacological approaches to pain management.
5. Final educational workshop to receive and review post-intervention quality indicator reports and share ideas for continuing quality improvement in pain management

Example of Quality Improvement for Medicare in USA

Results of Quality Improvement Intervention

1. Percentage of residents assessed adequately for pain increased from 8% to 29%
2. Non-pharmacological pain treatments increased from 31% to 42%
3. Percentage of residents in pain given medication other than acetaminophen did not increase from baseline 86%
4. Percentage of residents with daily moderate or any excruciating pain given adequate, scheduled pain medication did not increase from baseline 76%

Different Methods for Quality Improvement Required in Remote Areas of Myanmar Slide 1

- **Zero funding from donors**
- **Mobile health clinics are remote and inaccessible**
  - **QI staff can not communicate with the clinics by email or telephone.**
  - **Visits by QI staff usually require 1-3 days walk from the nearest transfer point that can be reached by car, river boat, or motor bike.**
  - **Costs of road and river transportation are thousands of baht per individual per trip.**
  - **Consequently, KDHW QI staff can visit clinics to discuss and encourage QI efforts only once in a few months.**
  - **QI materials can be sent to the clinics, and completed forms can be returned to the KDHW office, only once every few months.**

Different Methods for Quality Improvement Required in Remote Areas of Myanmar Slide 2

- **Multiple languages hinder both training for QI staff and communication with clinic workers**
  - **QI staff training is in English, often incompletely understood**
  - **Clinic workers in the North read Karen but not Burmese**
  - **Clinic workers in the South read Burmese but not Karen**
  - **QI materials must be produced in 3 languages**

Methods and Goals of KDHW QI Project Slide 1

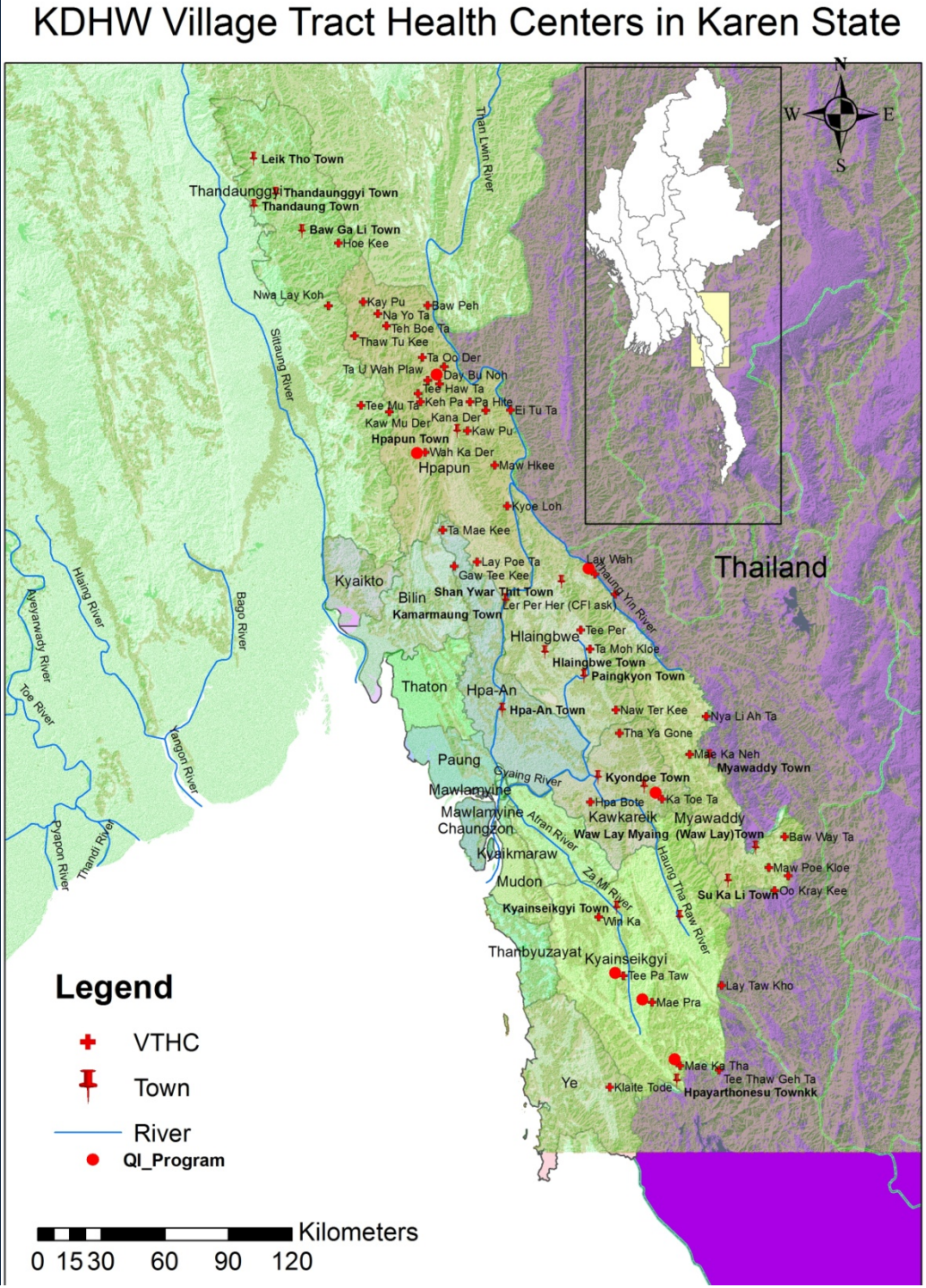
- Visit each clinic twice a year to discuss procedures and progress, and to obtain feedback
- Provide easy-to-use checklists (flip charts) to help guard against lapses or errors during patient encounters
- Provide logbook review forms to be completed by clinic staff and returned to QI central office every few months
- Provide reports to clinic staff of clinic performance month to month on QI measures based on their own logbook review data, also once every few months
- Hope to encourage, despite minimal communication, greater focus among health workers on the guidelines for quality health care

Methods and Goals Slide 2

- **Clinic staff can see on the monthly performance charts whether they are improving or not improving.**
- **They can try harder to improve in the next months.**
- **QI procedures and problems are discussed during site visits by the QI team.**
- **Site visit discussions can lead to changes in procedure both by clinic staff and by the QI team.**

MAP OF KDHW VILLAGE TRACT HEALTH CENTERS

7 CLINICS IN QI PROJECT ARE INDICATED BY LARGE RED DOTS

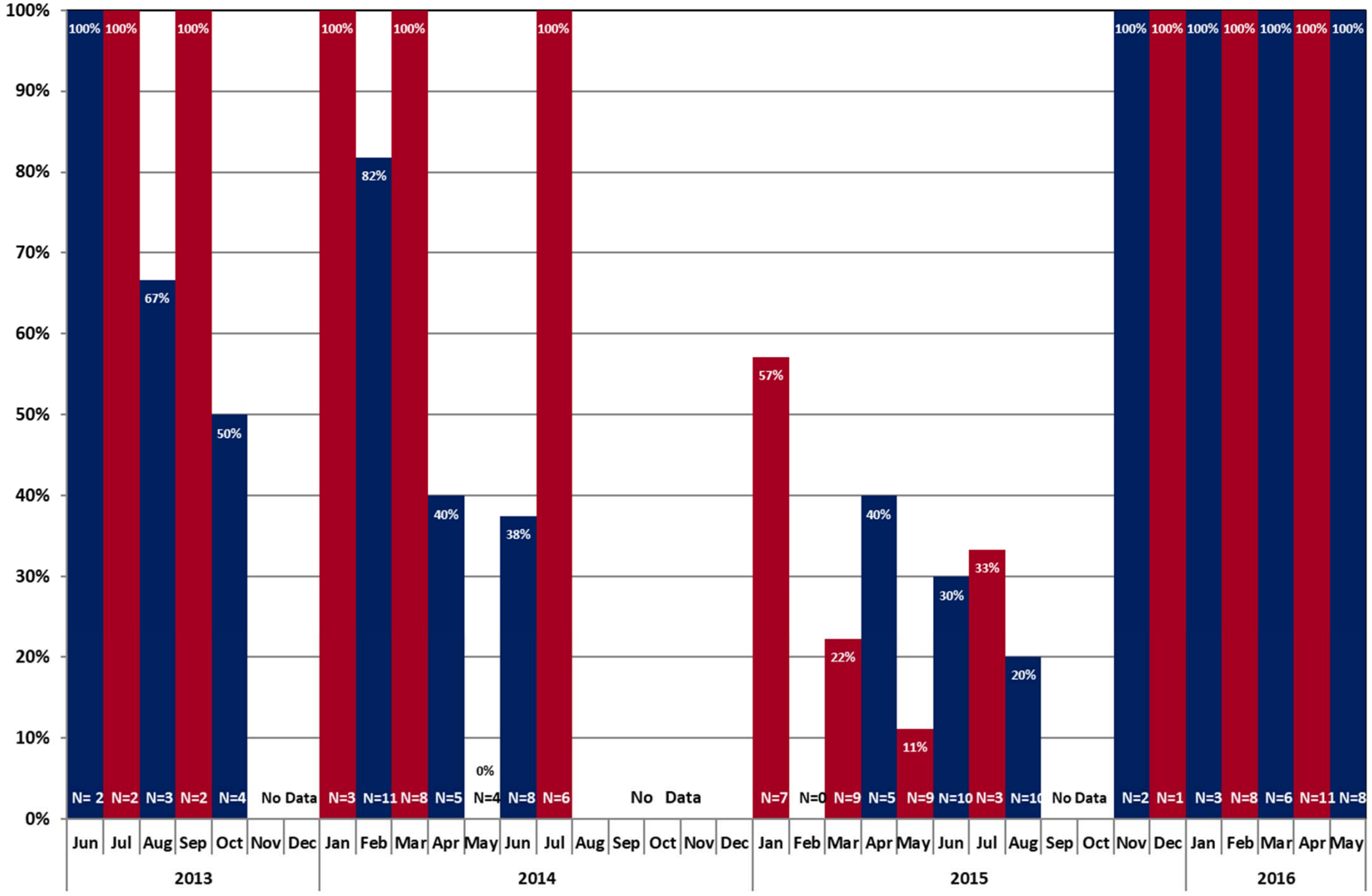


Examples of Quality Measure Charts

- Based on actual logbook data reported by QI coordinators at clinics
- Names of clinics have been replaced by "Village Tract Health Center"

KDHW Quality Improvement 2013-16 **VILLAGE TRACT HEALTH CENTER**

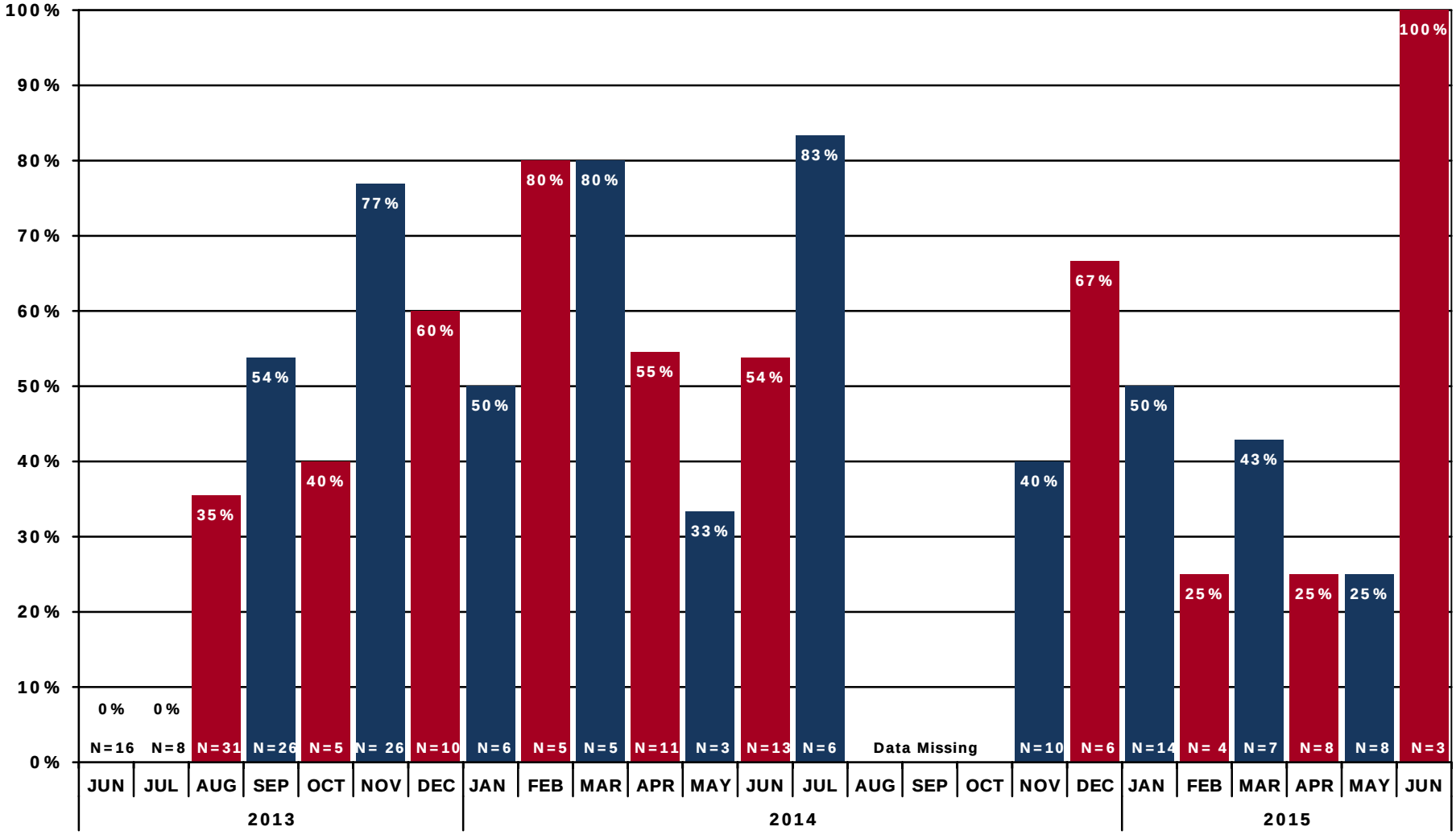
DIARRHEA: Instructions Given for ORS



KDHW Quality Improvement 2013-15

VILLAGE TRACT HEALTH CENTER

Correct Antibiotic [1. Amoxicillin or 2. Erythromycin] and Dosage for Simple Pneumonia



Evaluation of QI Project

Based on KDHW-IRC logbook review

- **Done independently of QI project.**
- **The reviewers are not aware which clinics are in the QI project**

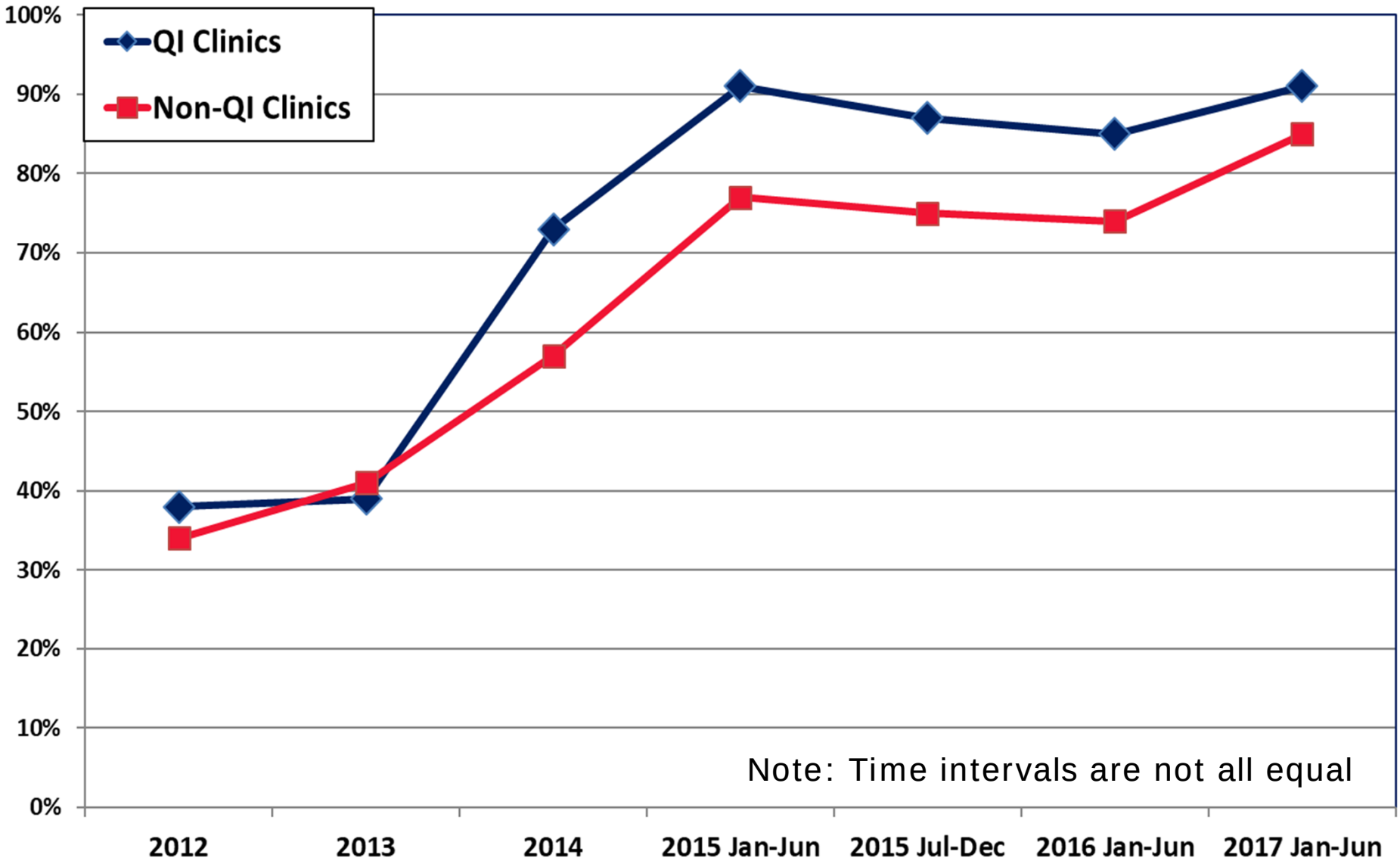
DIARRHEA

Percentage Correct on All 6 Quality Measures in Independent Logbook Review

	QI Clinics				Non-QI Clinics				Is the difference between QI and non-QI clinics significant at **p<.01?**
	Number Clinics	**Number Correct**	**Number Incorrect**	**% Correct**	**Number Clinics**	**Number Correct**	**Number Incorrect**	**% Correct**	
2012	2	88	106	**38%**	5	179	355	**34%**	**No**
2013	2	139	221	**39%**	6	346	494	**41%**	**No**
2014	5	307	113	**73%**	7	374	280	**57%**	**Yes**
Jan-Jun 2015	6	691	71	**91%**	6	339	99	**77%**	**Yes**
Jul-Dec 2015	4	375	57	**87%**	8	506	166	**75%**	**Yes**
Jan-Jun 2016	6	575	103	**85%**	11	385	137	**74%**	**Yes**
Jul-Dec 2017	4	703	71	**91%**	7	360	66	**85%**	**Yes**

KDHW Quality Improvement Project

COMBINED QUALITY MEASURES FOR DIARRHEA FROM INDEPENDENT LOGBOOK REVIEW



URTI/LRTI-Pneumonia

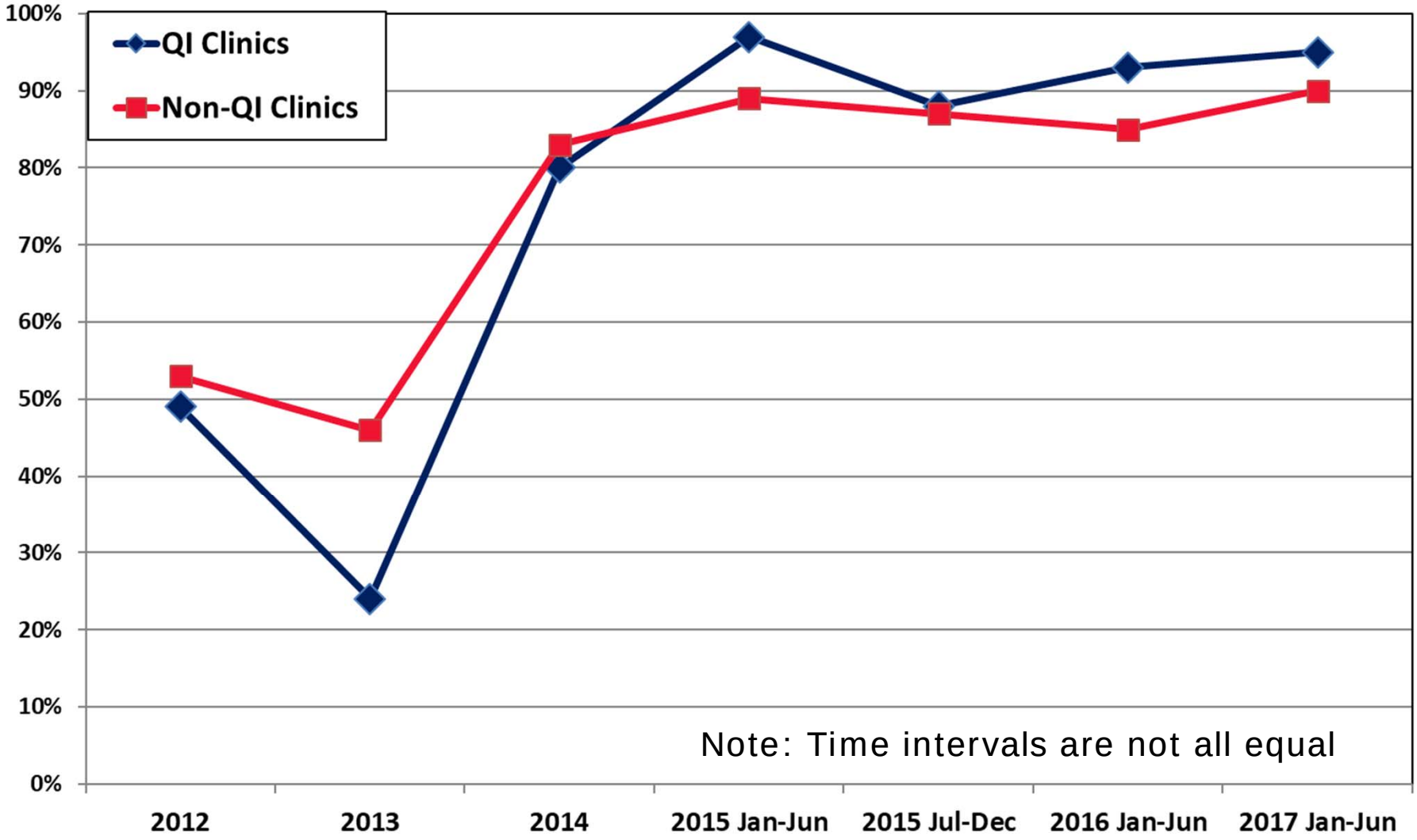
Percentage Correct on All 5 Quality Measures in Independent Logbook Review

	QI Clinics				Non-QI Clinics				Is the difference between QI and non-QI clinics
	Number Clincs	Number Correct	Number Incorrect	% Correct	Number Clincs	Number Correct	Number Incorrect	% Correct	significant at **p<.01?**
2012	5	153	157	**49%**	7	167	148	**53%**	**No**
2013*	2	91	289	**24%**	6	288	332	**46%**	**Yes***
2014	5	330	80	**80%**	6	373	77	**83%**	**No**
Jan-Jun 2015	6	625	20	**97%**	8	315	40	**89%**	**Yes**
Jul-Dec 2015	4	502	68	**88%**	9	374	56	**87%**	**No**
Jan-Jun 2016	6	405	30	**93%**	10	480	85	**85%**	**Yes**
Jan-Jun 2017	4	568	27	**95%**	7	378	42	**90%**	**Yes**

*In 2013, the difference favored non-QI clinics. The 2 QI clinics had joined project the same year.

KDHW Quality Improvement Project

COMBINED QUALITY MEASURES FOR ARI/PNEUMONIA FROM INDEPENDENT LOGBOOK REVIEW



Results for Diarrhea

Quality of care in QI clinics improved more than in non-QI clinics, leading to a significantly better aggregate score on quality measures in 2014, continuing to 2017.

Results for ARI-Pneumonia

Quality of care in QI clinics improved more than in non-QI clinics, leading to a significantly better aggregate score on quality measures in 3 of the 4 logbook reviews that were conducted during 2015-2017.

Conclusions Slide 1

First ever demonstration (to my knowledge) of feasibility of quality improvement in remote areas lacking:

- **Professional medical personnel (e.g. doctors, nurses)**
- **A single common language**
- **Frequent direct personal communication between QI staff and health care workers**

Conclusions

The success of the project shows that this model can be applied to other indigenous health care systems in remote areas to improve quality of health care and thereby reduce medical errors.

Conclusions

The innovative model for this project was the reliance primarily on written materials – flip charts, logbook review data forms, and graphs of monthly progress – exchanged between clinics and QI office 2-3 times per year.

Highly motivated non-professional health workers responded to the materials, improving their observance of health care guidelines despite not having frequent personal communication with QI staff.

Karen Department of
Health and Welfare

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Appendix

PHOTOGRAPHS FROM OUR INTREPID QI TEAM'S FIRST TRIP TO INITIATE THE PROJECT IN DAE BU NOH CLINIC

August, 2012

The Trek from the River Landing to the Clinic took 12 Hours.

In the Dry Season it took 8 Hours.

Resting after Arrival

Explaining Logbook Review and Quality Improvement Procedures to the Clinic Staff

The Clinic Staff Pose with the QI Workers on the Right

QI Staff Work with the first Volunteer Clinic QI Coordinator