



Assessment and Analysis of Haitian HADR data collected by Global Relief Technology

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Outline

- **Background**
- **Data quality and quantity tradeoffs**
- **Analysis results germane to:**
 1. **Resources, services, facilities, or other items in cities outside Port-au-Prince (PAP) that could entice IDPs from PAP to remain in that location**
 2. **Identification of positive, neutral, and negative trends in the distribution of Humanitarian Aid and basic services within Haiti**
 3. **Security, Sanitation, Shelter and Settlement on the Nine Priority Camps within PAP**
- **Next steps in survey methodology and data analysis**
- **Summary**



Project Purpose

- **MIT LL is to conduct an independent analysis of the data collected by GRT to be used by the international community for future planning.**
- **The products produced by MIT will be made available to the GoH, USAID, IOM, Cluster Members, and other decision makers within the International Haitian Relief Community.**
- **Objective of the analysis is to provide the customers with indicators to better focus their time, resources, and efforts to meet the priorities of the GoH in coordination with USAID.**

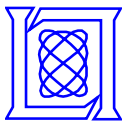


Data Quality and Quantity Tradeoffs

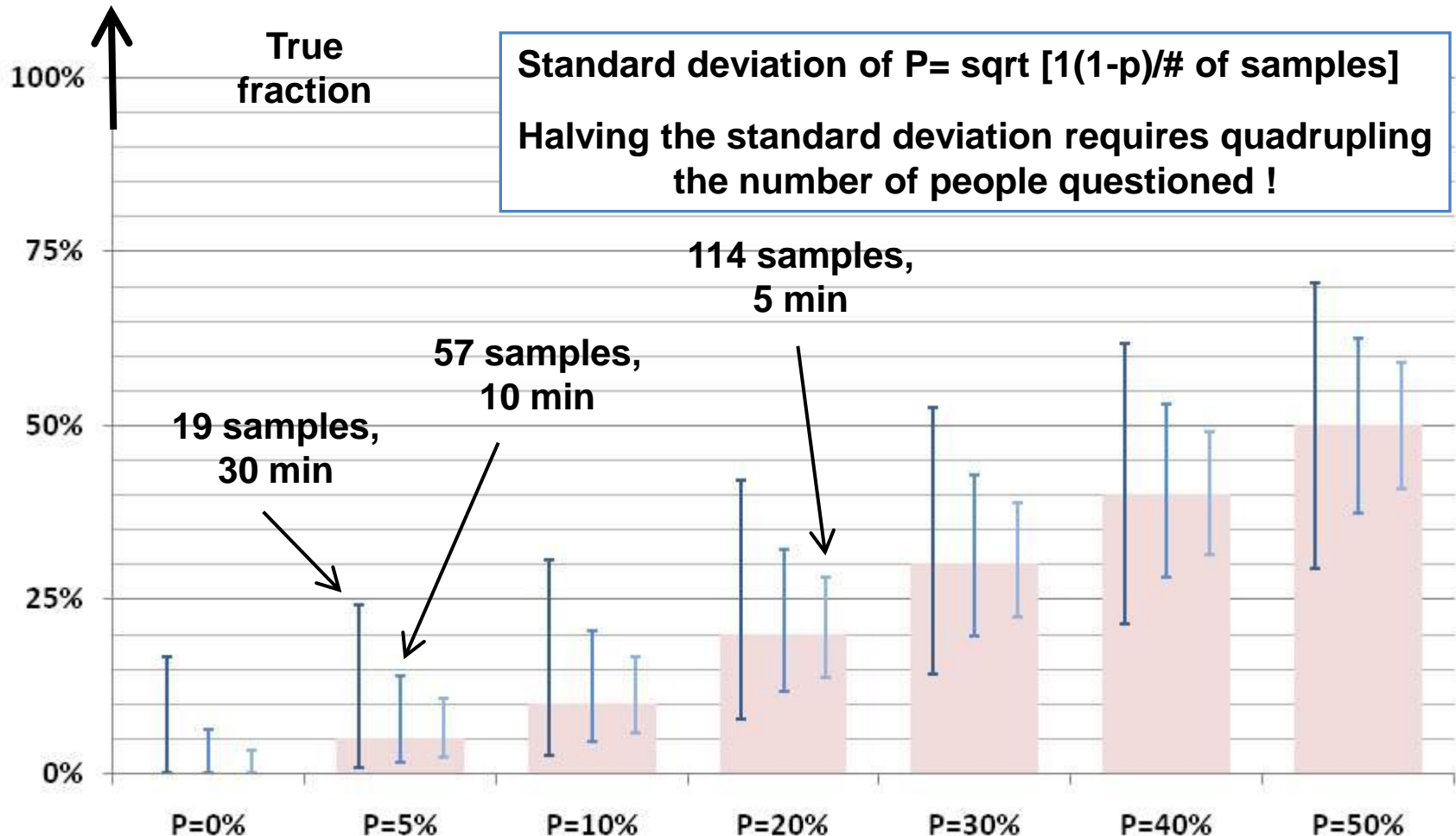
- **The questionnaire as a “sensor”**
 - Data collection process and entry on PDAs
 - PDA transfer to GRT processing center
 - Data and first look analysis product availability on GRT WWW site

has worked well

- **The challenge is how to use this “sensor”:**
 - Questions to ask (are questions germane at this point in time + more questions asked means a longer time to interview a person)
 - Where to sample at a given physical location
 - How to get samples from people that are of high interest (e.g., IDPs in outlying cities)
 - Tradeoff between the information gathered per interviewee and the statistical accuracy of the resulting analysis results



Statistical Reliability-Interview Time Tradeoff



P= observed fraction of people in a sample



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Methodology

1. Find IDPs in outlying cities

- Separate the questionnaires from outside PAP based on the answer to question H-56.0 Where is the place that you are living and sleeping at night? Possible responses are

H56.1 I am in the same neighborhood as I lived before the earthquake

H56.2 I am not in the same neighborhood, but in the same community/commune

H56.3 I am not in the same community/commune, but in the same department

H56.4 I am not in the same department

- Identification of IDP is based on “yes” to H56.4

2. Determine “average” response for IDPs in a PAP camp

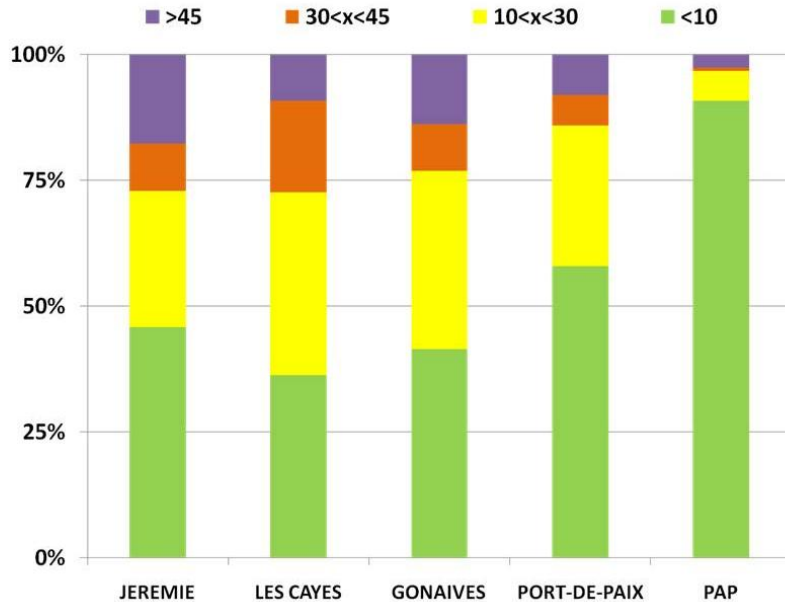
- Average last two weeks responses for each of the 9 priority camps
- Weight the camp average by the population of the respective camps within PAP

(next iteration will use all the camps in PAP)

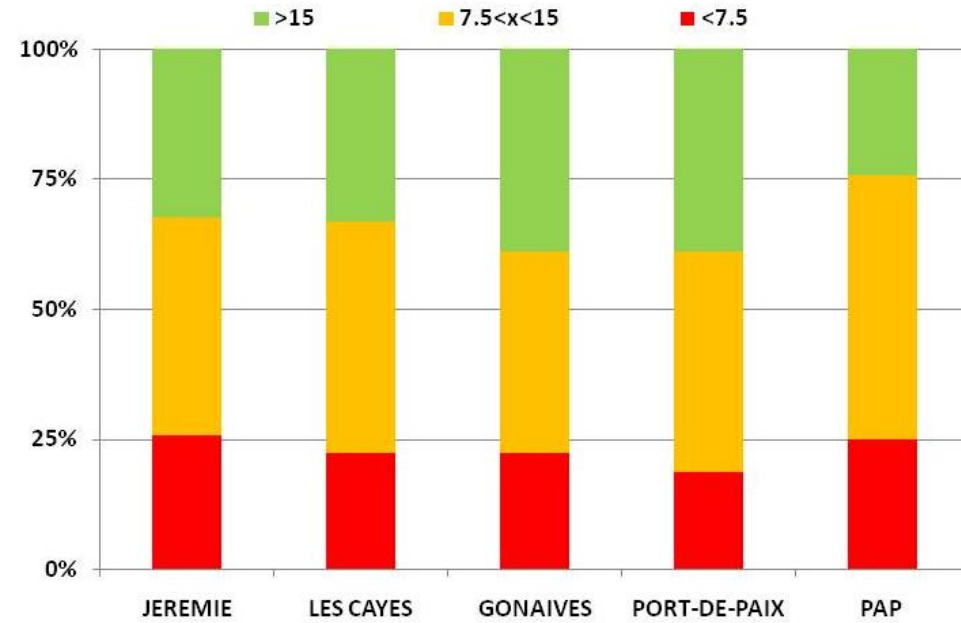


Comparison of IDPs in Outlying Cities to PAP 9 “average”

Minutes to Nearest Medical Facility



Daily Water Usage (L/person)

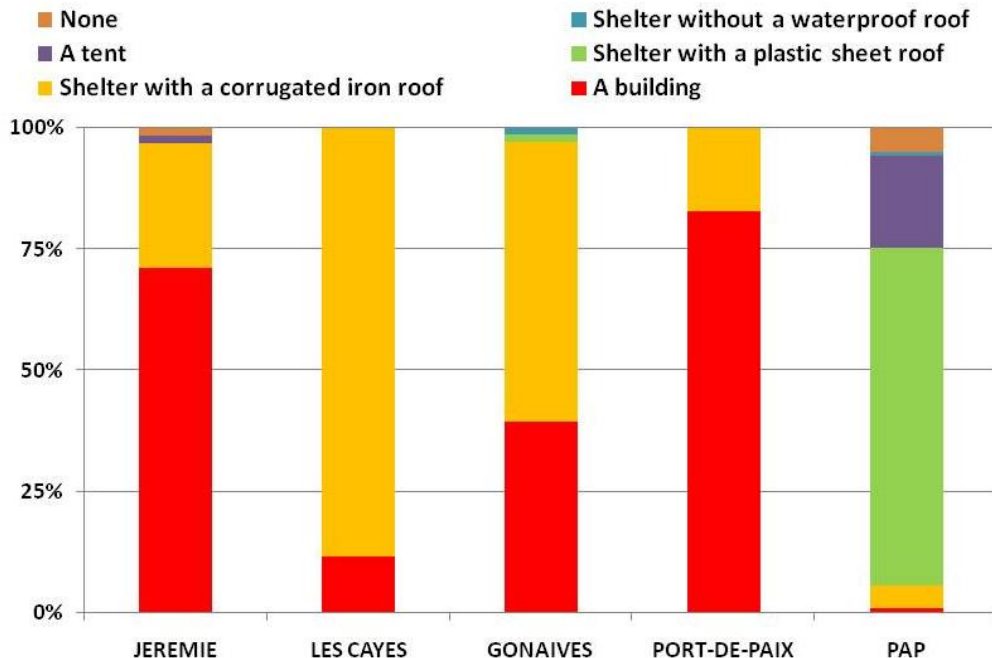


| Site | Sample Size |
|--------------|-------------|
| Jeremie | 74 |
| Les Cayes | 45 |
| Gonaives | 72 |
| Port-de-Paix | 54 |

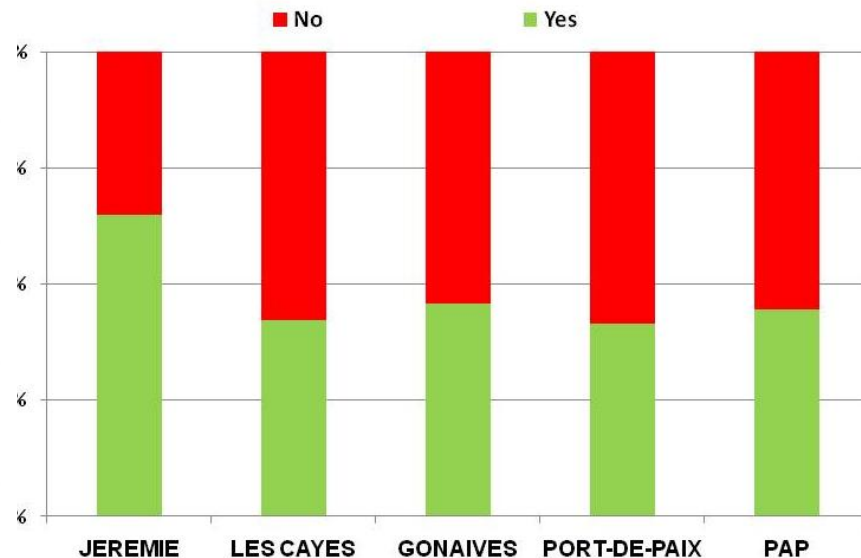


Comparison of IDPs in Outlying Cities to PAP 9 “average”

Shelter



Do you feel Secure?

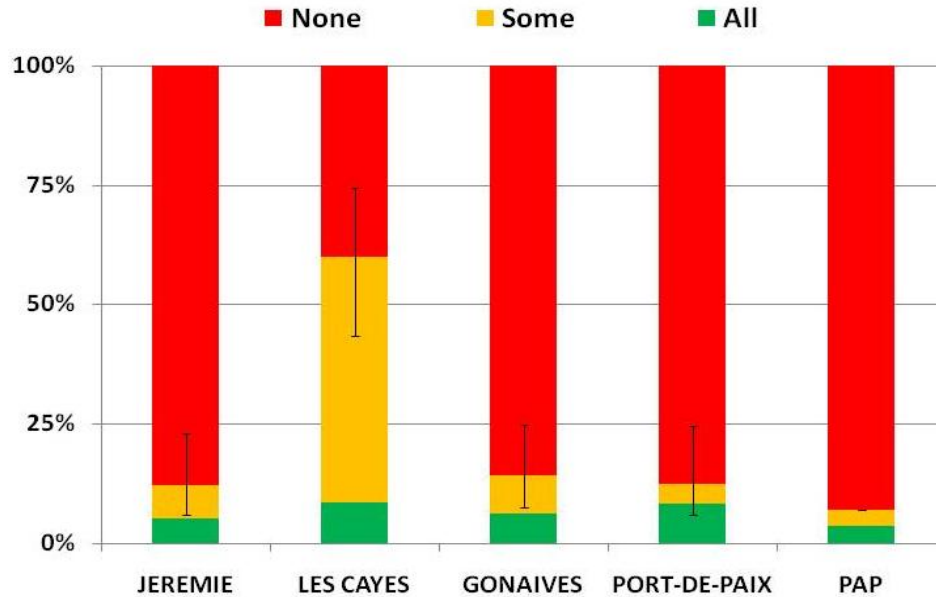


| Site | Sample Size |
|--------------|-------------|
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Comparison of IDPs in Outlying Cities to PAP 9 “average”

Do my children have access to learning materials?

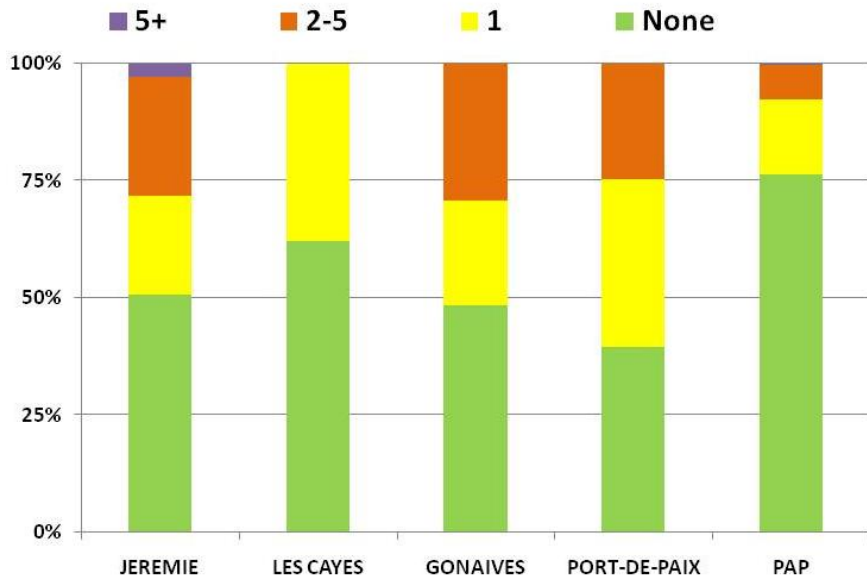


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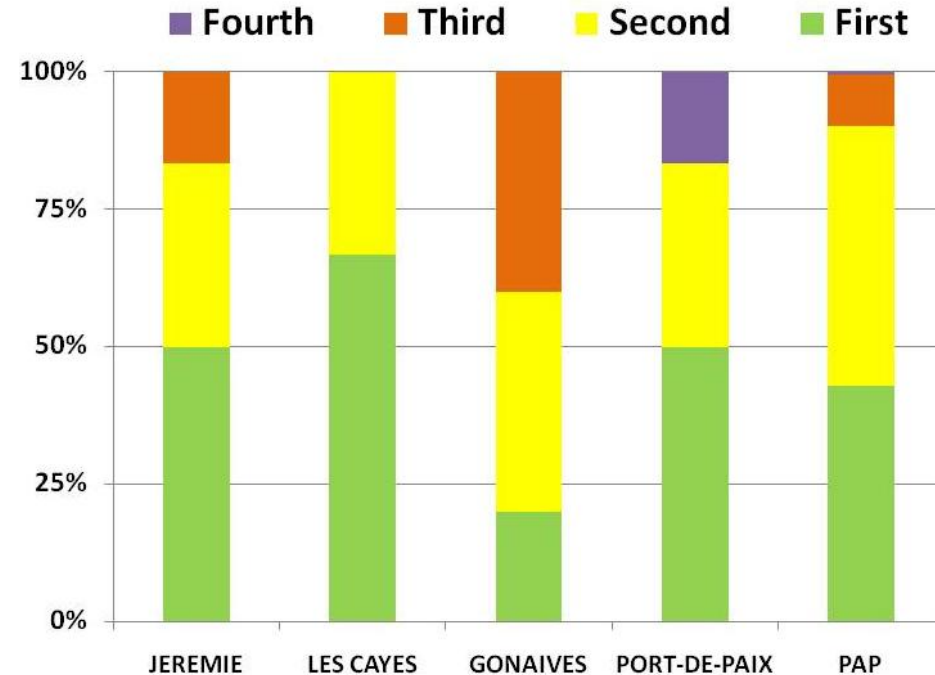


Comparison of IDPs in Outlying Cities to PAP 9 “average”

families sharing shelter



Priority of finding job

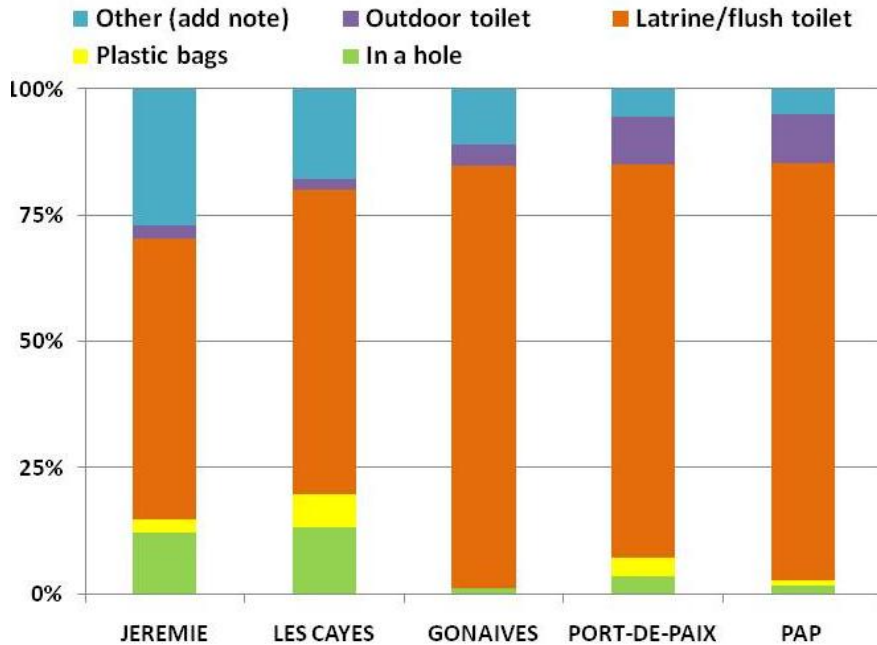


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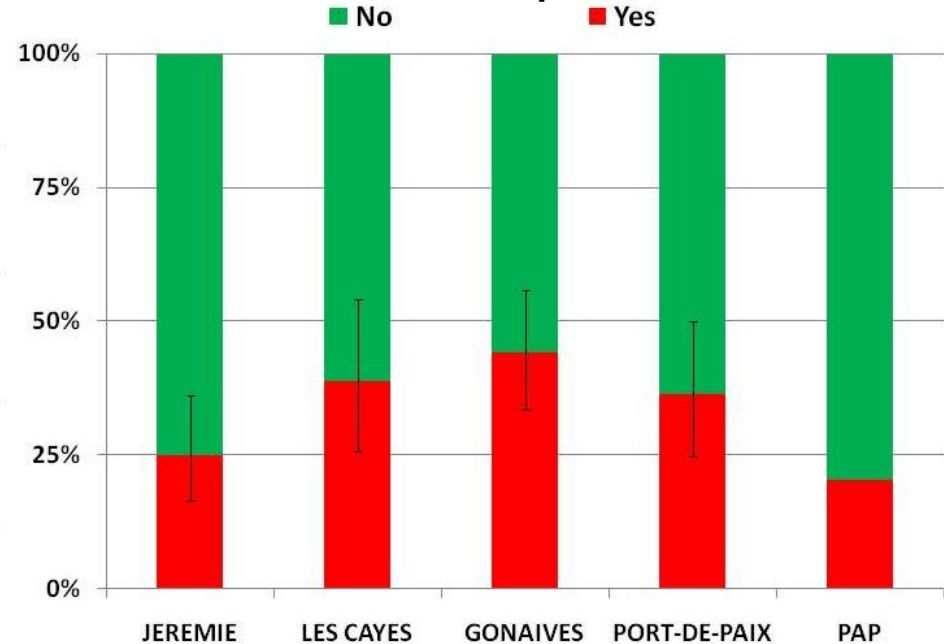


Comparison of IDPs in Outlying Cities to PAP 9 “average”

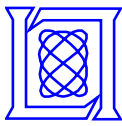
Where do you go to the bathroom?



Did you own your own land/property before the Earthquake?



| Site | Sample Size |
|--------------|-------------|
| Jeremie | 74 |
| Les Cayes | 45 |
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| Port-de-Paix | 54 |



Possible Actions to Fix the Population of IDPs in the Outlying Cities

- 1. Improve medical facility access (e.g., clinics) in the outlying cities**
- 2. Provide access to educational materials in Gonaives and Jeremy that is as good as in Les Cay**
- 3. Improve job possibilities in all 3 cities relative to PAP**
- 4. About 25-40% of the IDPs in the outlying cities own land and/or homes in PAP – need to consider buy outs of PAP property and assistance in purchasing property outside PAP**

-
- Address relative differences in food security (note: the cut back in food distributed in PAP may achieve this)**
 - Improve security in Les Cays and Gonaives**
 - Monitor possible multiple family crowding in outlying cities**
 - Improve access to latrines and toilets in the outlying cities**



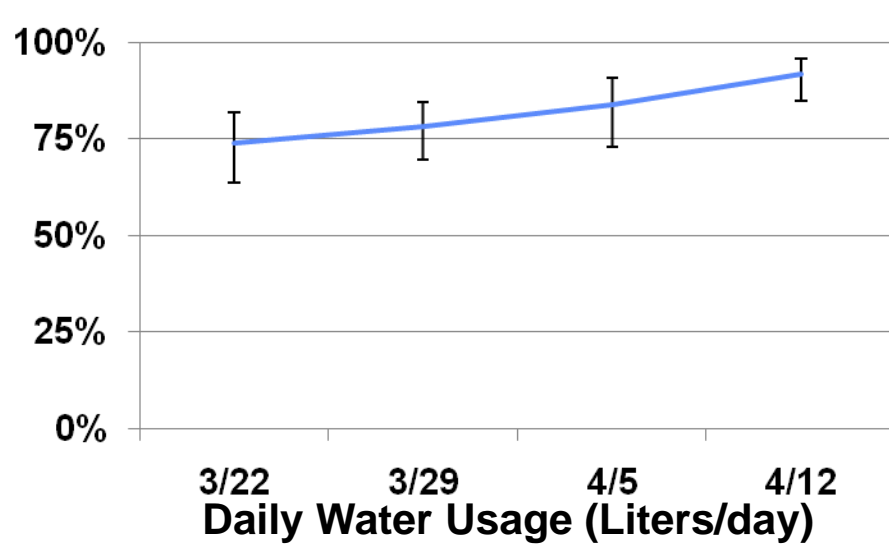
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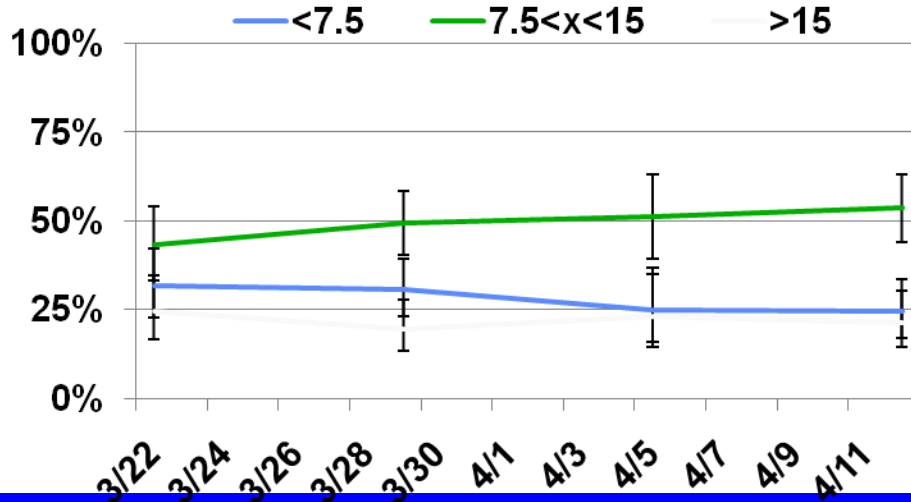
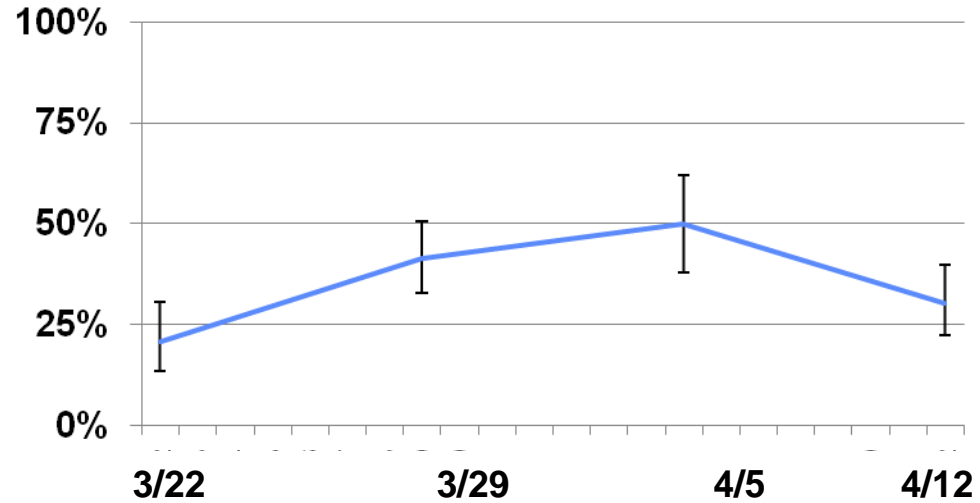


Key Indicator Trends (PAP)

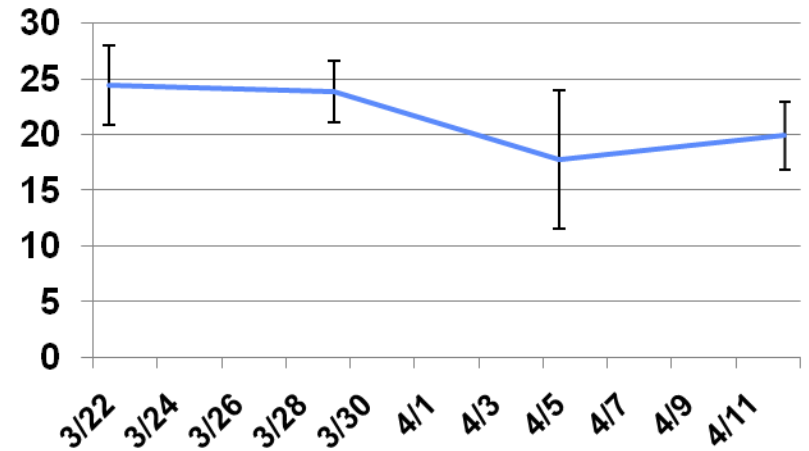
% Respondents With a Waterproof Roof



% Respondents Who Feel Secure



Food Insecurity (CSI)





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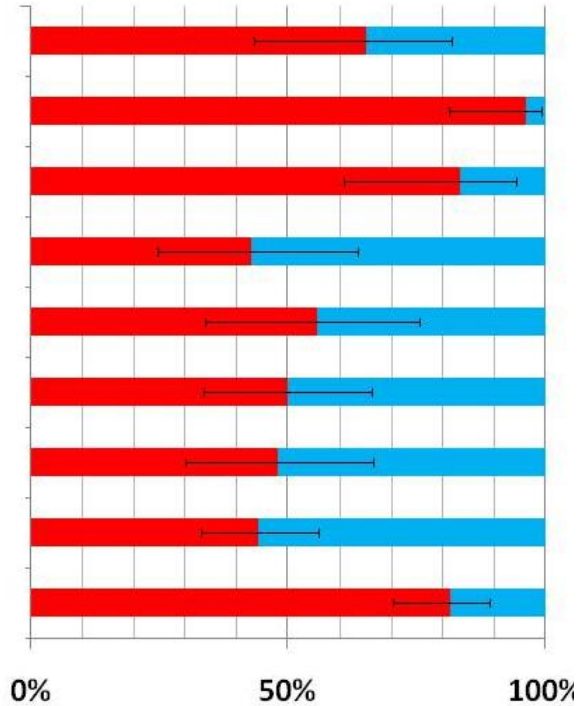


9 Priority Camp Summary: Security

Key Indicator: Percentage of people who feel secure

■ Not Secure ■ Secure

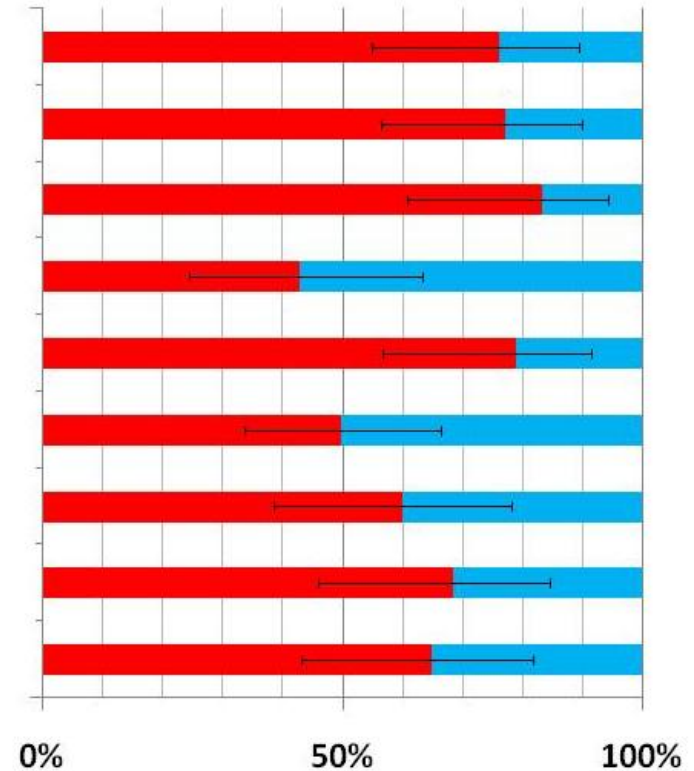
Pont de la Croix
118-03-318
Bo Marche
111-02-001
Camp de Boulos
112-01-491
Venus et Environs
111-03-015
TapisVert
117-01-008
Vallee de Bourdon
111-01-016
Champs de Mars
111-01-034
Golf Course
111-01-030
AncienAeroport
112-01-089



First assessment at each site

■ Not Secure ■ Secure

Pont de la Croix
118-03-318
Bo Marche
111-02-001
Camp de Boulos
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Venus et Environs
111-03-015
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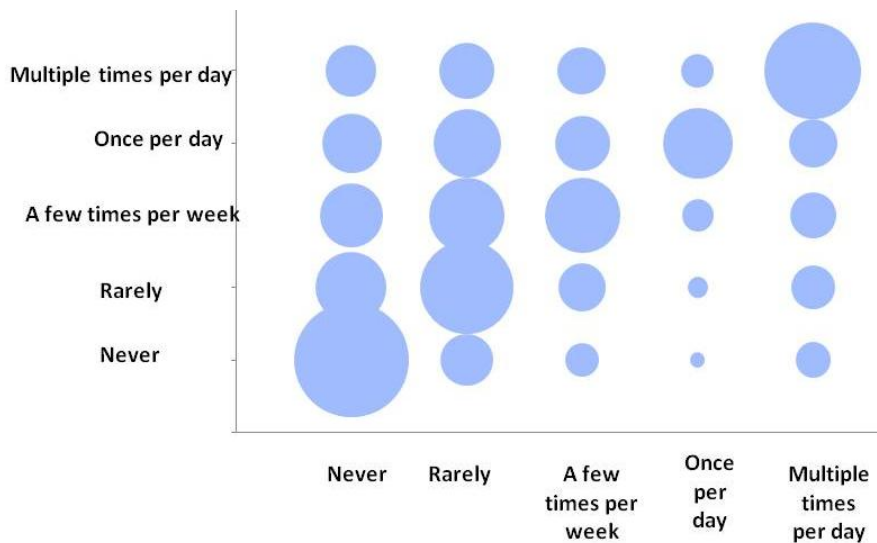


Most recent assessment at each site



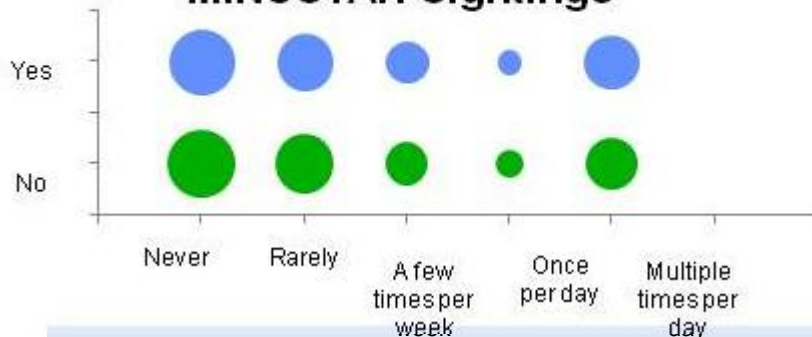
Security correlation

Frequency of MINUSTAH sightings vs Haiti National Police sightings

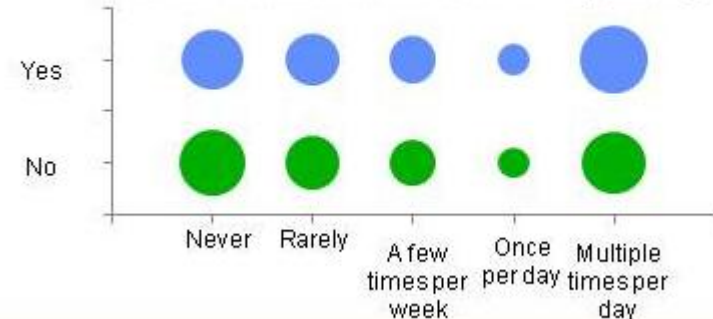


- Correlated. In general, the more often you see one of the two types of police, the more often you will see the other
- This suggests that they are patrolling the same locations/routes within camps

Do you feel secure vs Frequency of MINUSTAH Sightings



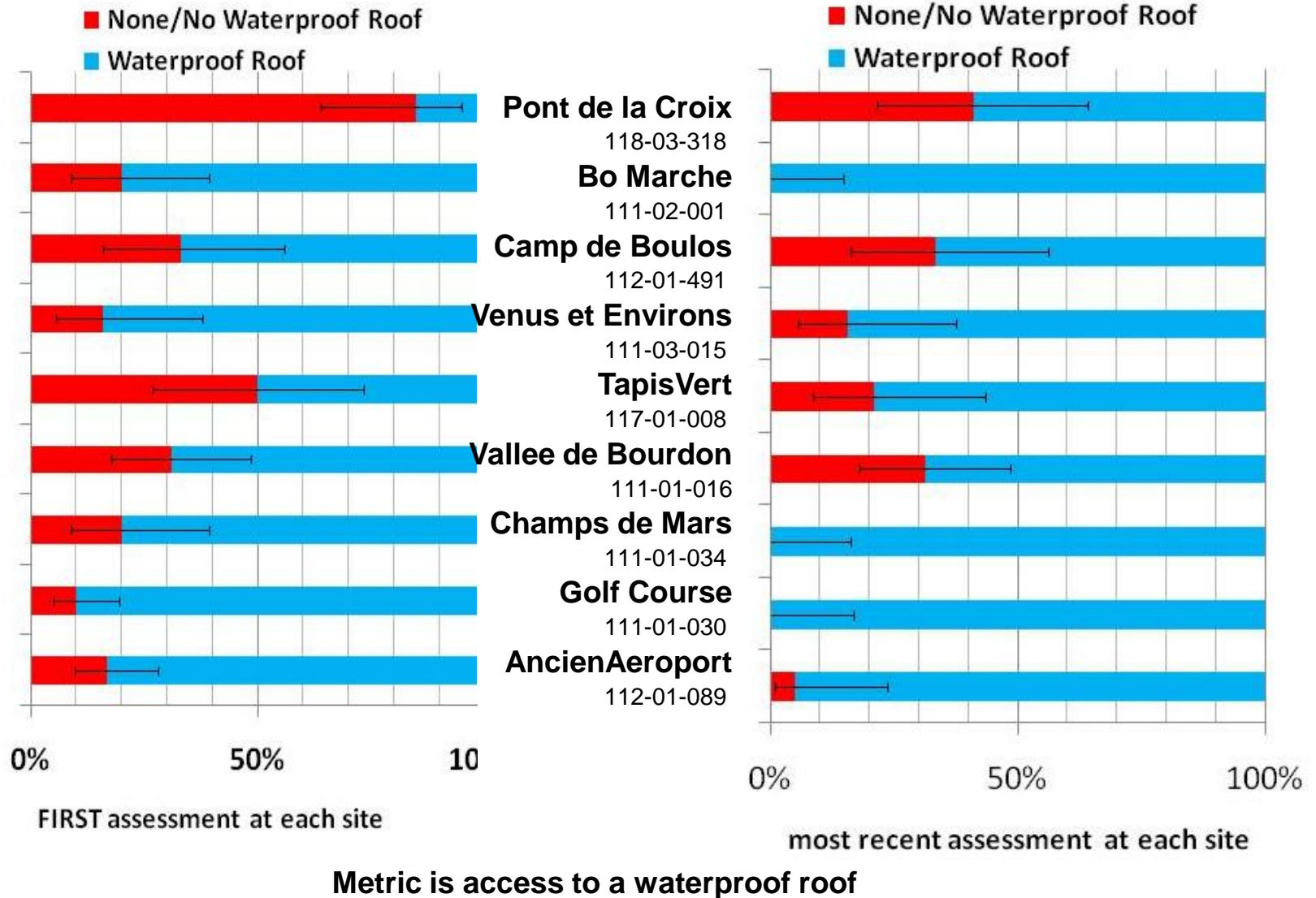
Do you feel secure vs Frequency of Haiti National Police Sightings



Not significantly correlated. In general, the frequency with which a respondent sees a police does not seem correlated to whether or not they feel secure



High Priority Camp Shelter Trend



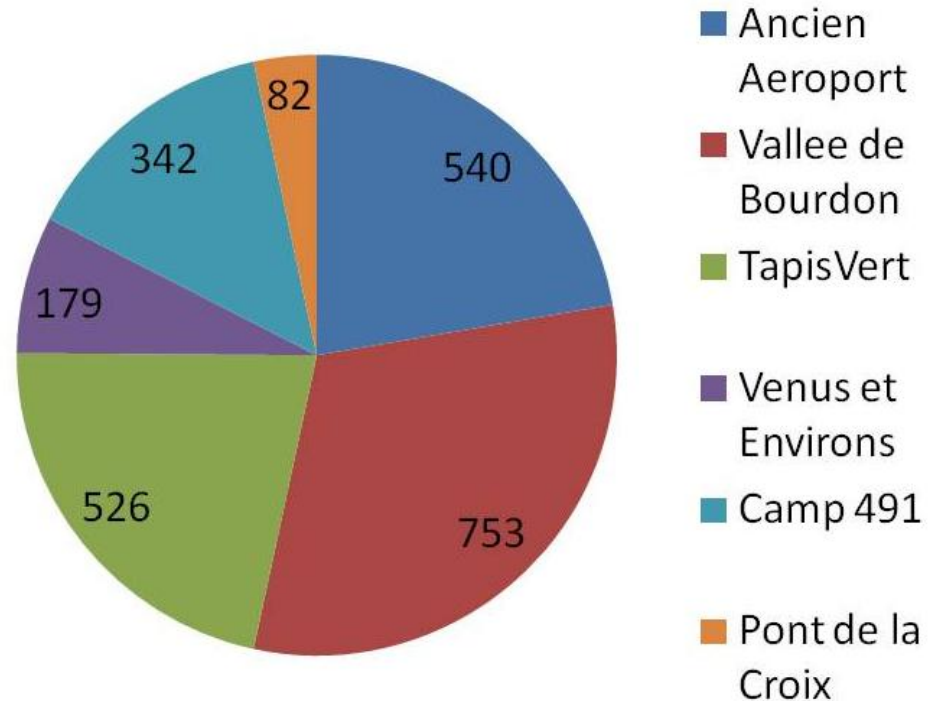


Estimate of Shelter Distribution to Provide High Priority Camps with Waterproof Roof

No interviewees at the other three high priority camps reported a need for additional waterproof roofs

Assumptions

- Our measured distributions at each site are representative of the entire camp population
- Shelter situation has not changed since our last visit to each site
- All gaps will be filled by direct distribution of shelter item (tarp, tent, etc.)
- One waterproof roof distributed per household



Total items needed = 2,422



9 Priority Camp Summary: Sanitation

Derived from most recent key informant surveys (n latrines) and population from CCCM DTM

Key Indicator:
Number of people per latrine

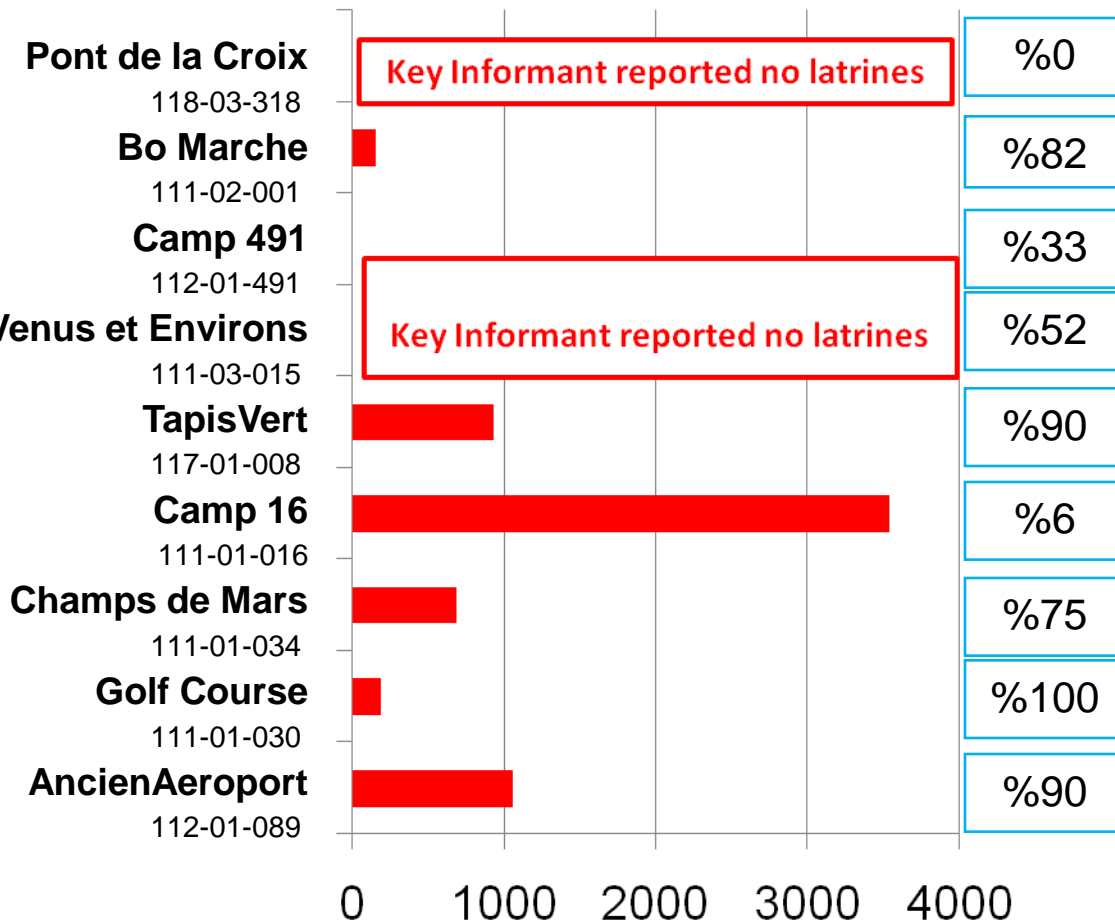
% Assessment respondents who reported using latrine OR flush toilet at last visit

Choices:

In a hole, Plastic bags, Outdoor toilet, Latrine/flush toilet, Other (add note), Refuse to answer

Issues

- Latrine and flush toilet are combined into 1 answer choice
- Confusion between outdoor toilet and latrine, and possibly “in a hole”?
- At site 111-02-001, few reported using a latrine, especially as compared to 111-01-030
- Respondents in 111-03-015 and 112-01-491 said they use latrines, but key informants reported having none in the camp

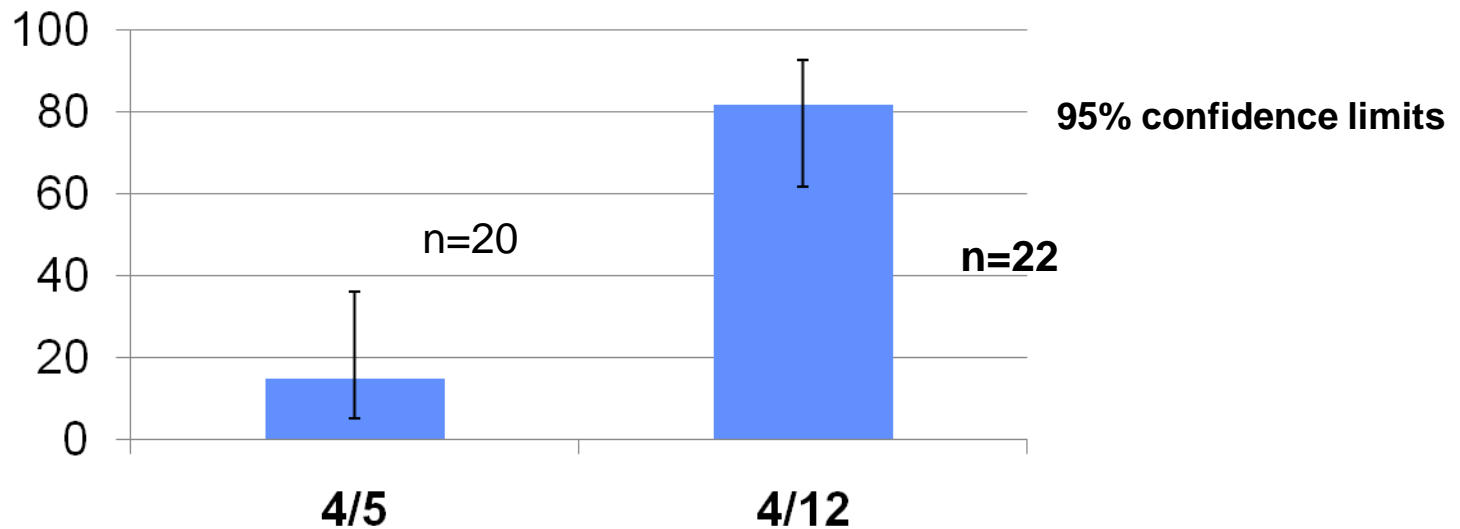




An Example of Traceable Success: Bo Marche latrines

- On 5 April the Key Informant reported 0 latrines present at the camp
- On 12 April the Key Informant reported 11 latrines present at the camp

% of respondents who reported using a latrine increased from 15% on 5 April to 82% on 12 April



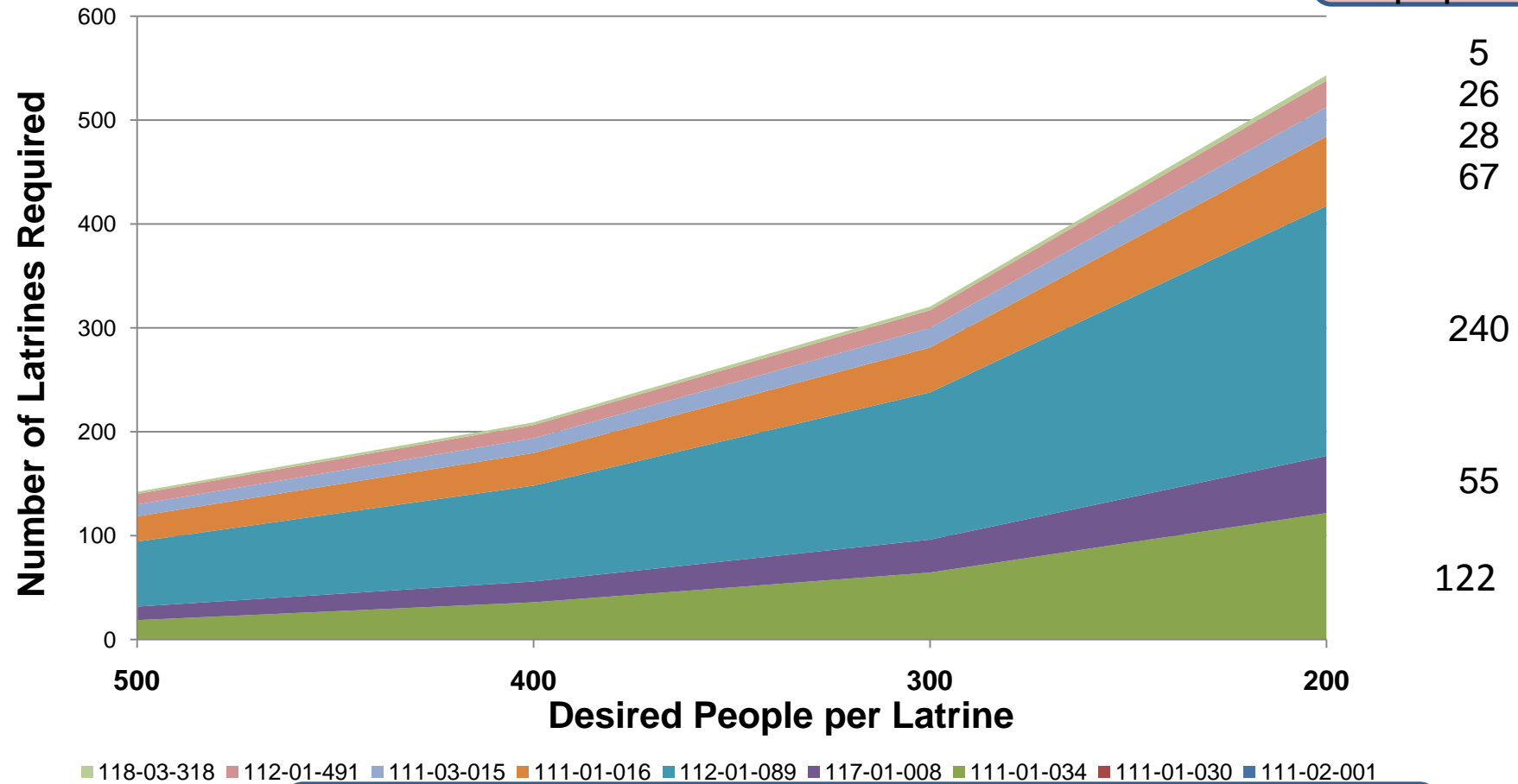
160 people/latrine exceeds the 200 people/latrine Haiti post-disaster standard



Using Key Informant: Number of Latrines Needed to Reach XX People/Latrine

Derived from most recent key informant surveys (n latrines) and population from CCCM DTM

Number of latrines needed to reach 200 people/latrine

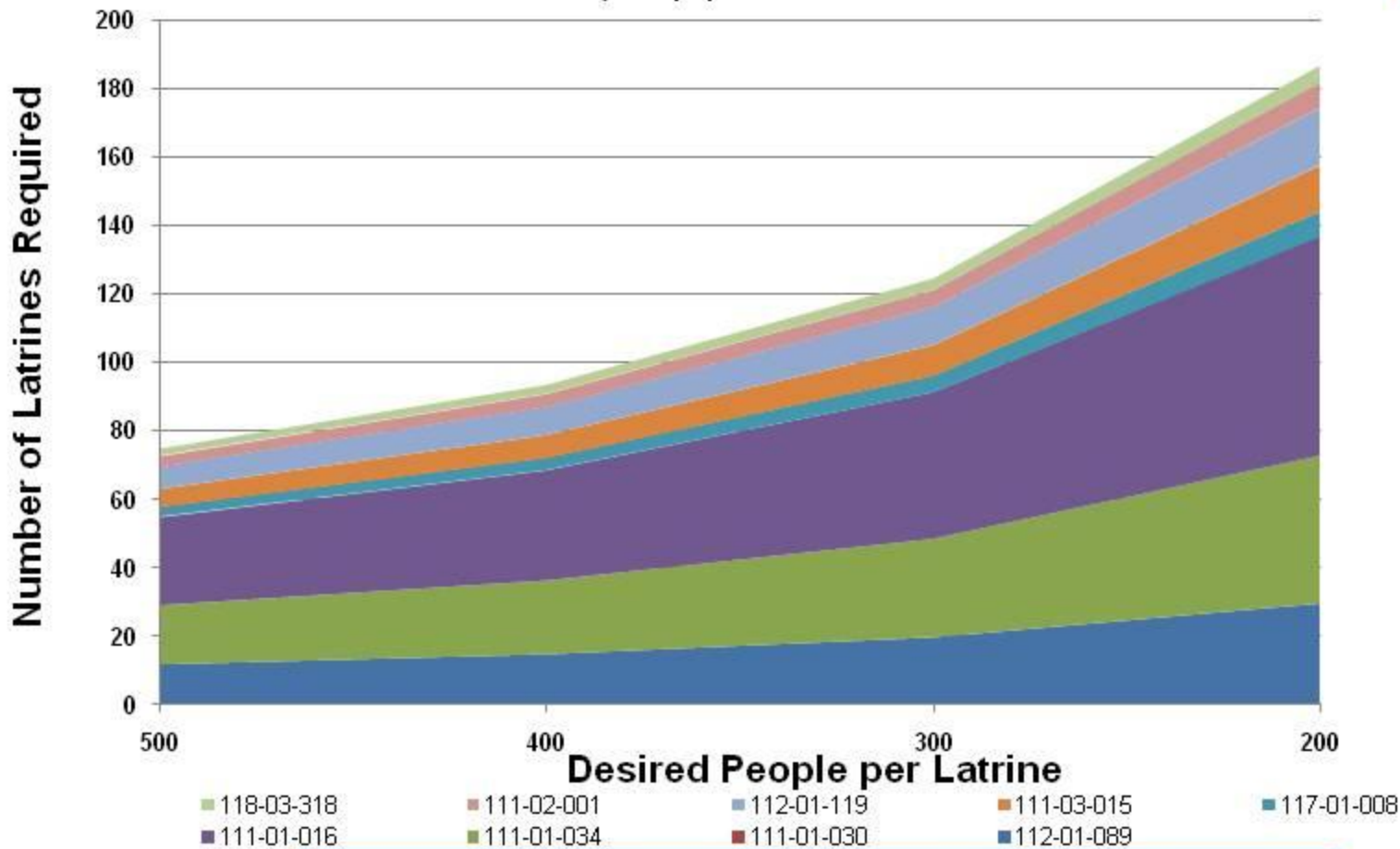


Total latrines needed to achieve ≤ 200 people/latrine = 543



Using Household Surveys: Number of Latrines Needed to Reach XX People/Latrine

Derived from most recent household surveys (where do you go to the bathroom) and population from CCCMDTM



Number of latrines needed to reach 200 people/latrine

- 5
- 7
- 17
- 13
- 7
- 64
- 43
- 30

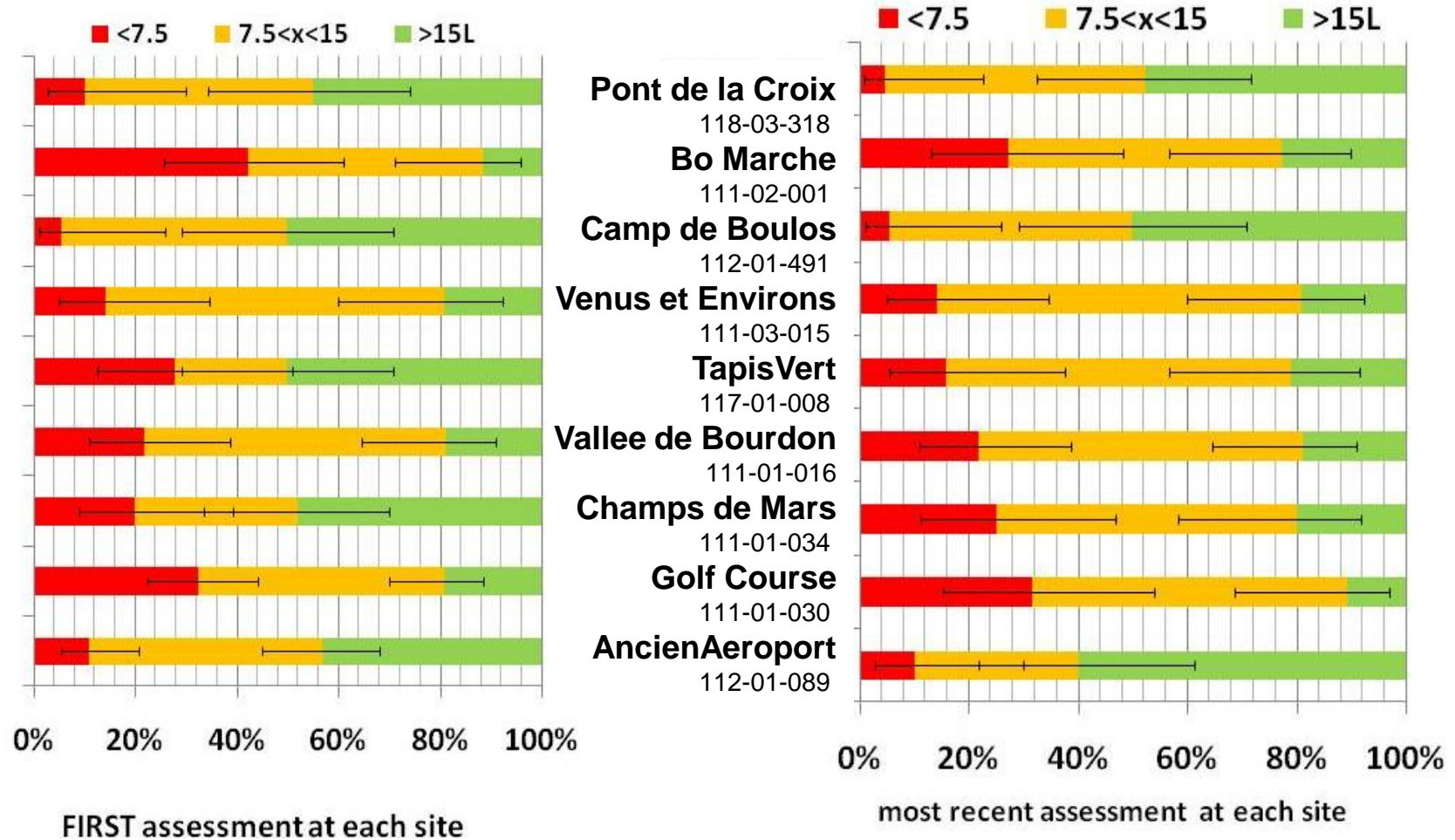
This calculation does not consider people already using a latrine at their own camp

Total latrines needed to reach 200 people/latrine = 187 (with confidence limits = 109-360)



High Priority Camp Water Trend

Fraction of persons with at least 7.5 liters per day per person has increased

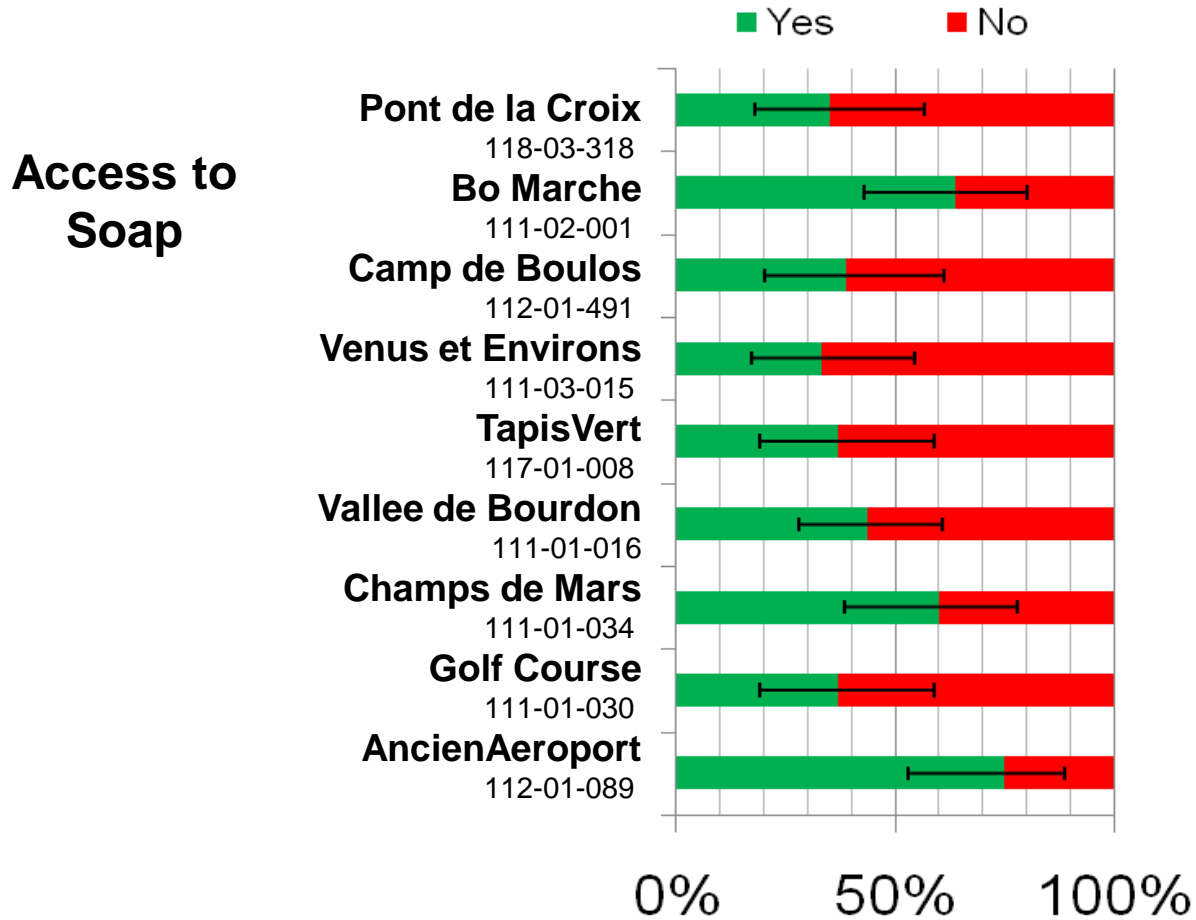


Metric is liters of water per day per person (determined from household water plus household size)



9 Priority Camp Summary: Health (part 1)

Used mosquito nets and soap to characterize situation

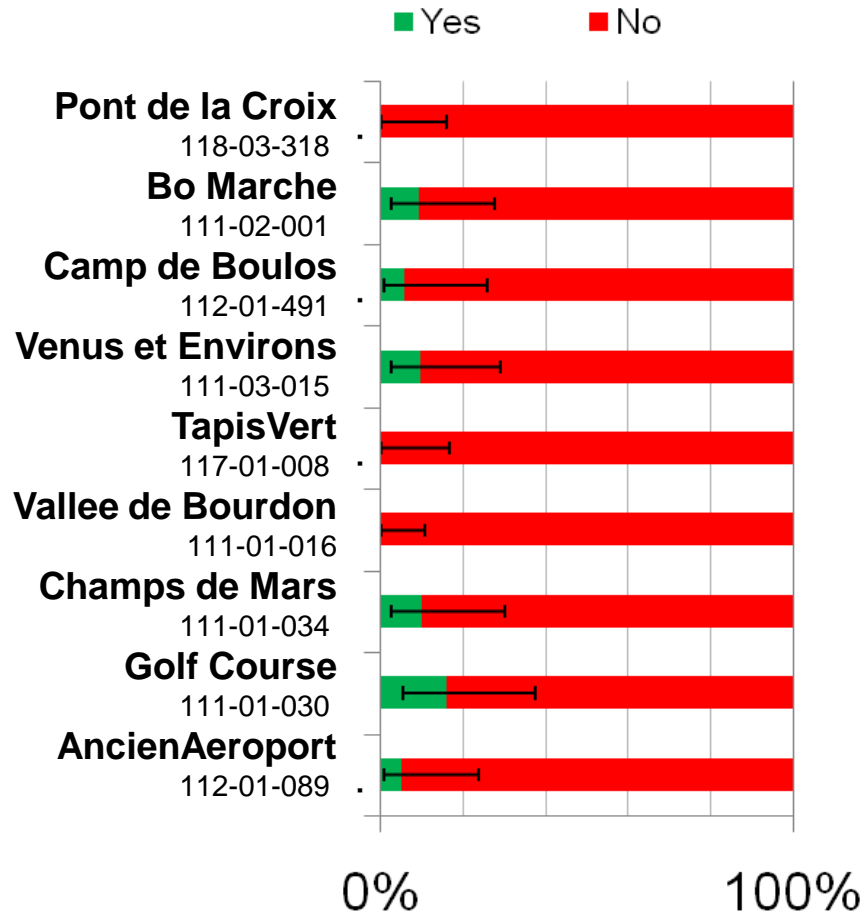


Information reported represents the most recent assessment at each site



9 Priority Camp Summary: Health (part 2)

Access to Mosquito Net



Information reported represents the most recent assessment at each site

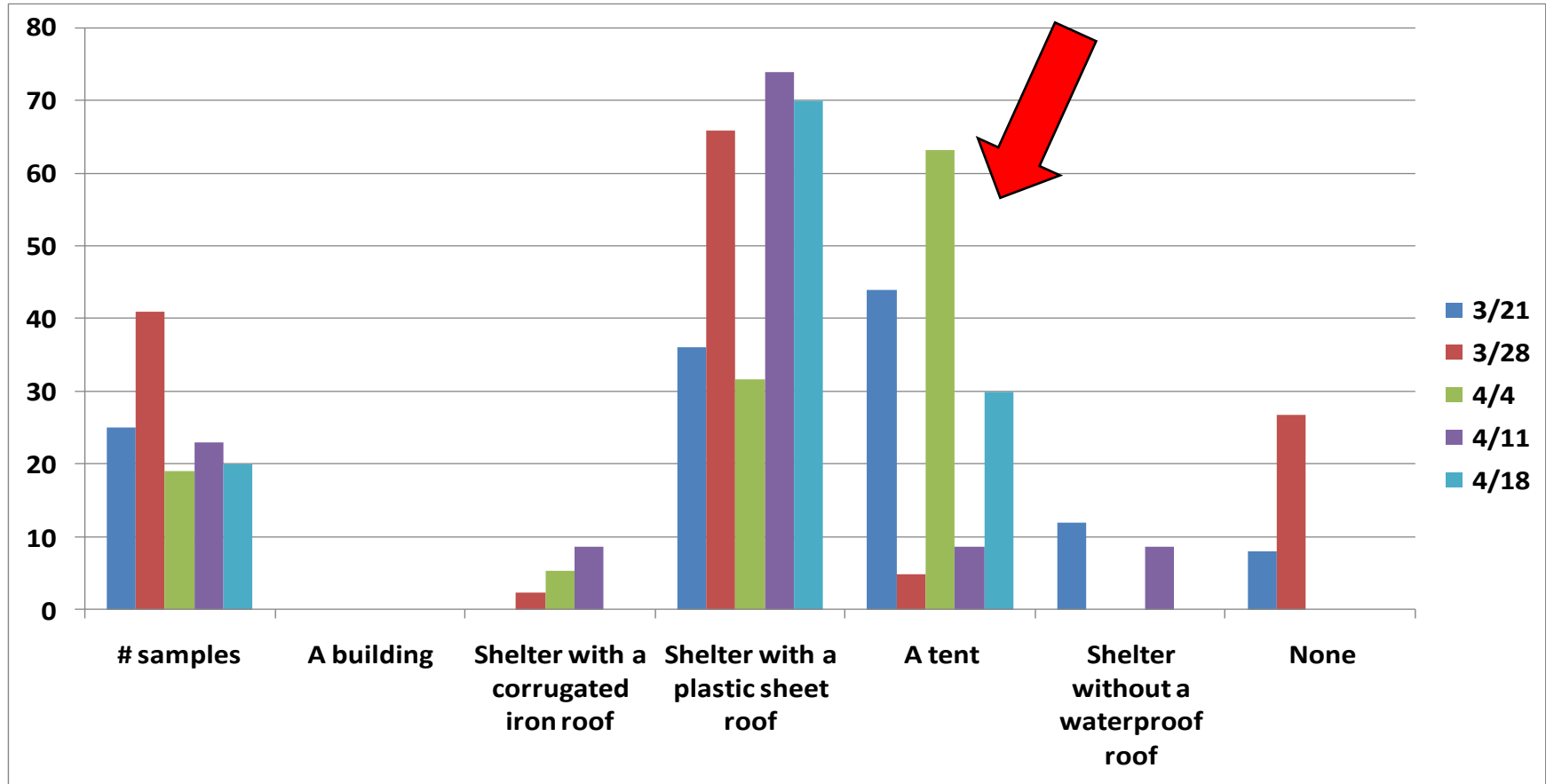


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Understanding “Unlikely” Variations in Responses



The variability in tent responses cannot be explained by confidence intervals:

Observed 60% has $\pm 20\%$ limits: 5% has about a 15% upper limit

Hypothesis: Spatial distribution of tents within Champ de Mars varies greatly



Aerial View Evidence



J2
9 April 2010

Google Earth
25 Jan 2010





Example of Google Earth Spatial Resolution (25 January 2010 image)





Need to Consider “Purposive” Sampling

- 1. Greater consideration of camp specific spatial variability in shelter type**
 - Obtain relatively crude GPS locations (e.g., wrist unit) for each survey carried out in major camps
 - Use color aerial images with spatial resolution similar to that shown in previous slide from Google earth to determine if locations of survey are adequately sampling the camps
- 2. Obtaining more IDP data points in outlying city surveys**
 - Seek to preferentially interview residents who have moved to the city from PAP since the earthquake
 - Have more frequent weekly samples of outlying cities
- 3. Discuss modified methodology with GoH, USAID, IOM, Cluster Members, and other key decision makers within the international Haitian Relief Community**



Questionnaire Changes

- **Changes to improve wording of current questions**
- **Gathering additional information (e.g., contrast between day time location and night location)**
- **Dramatically reduce number of questions for some fraction of the surveys to improve the statistical reliability of the remaining questions**
- **Consultations with experts on sampling and questions to support longer term (e.g., recovery/reconstruction) planning**



Summary

- **Statistically significant positive trends have been identified for some indicators**
 - % respondents with a waterproof roof and water in PAP
- **Food insecurity and personal security within PAP do not appear to have a statistically significant positive trend**
- **Sanitation (latrines) and mosquito nets are ongoing needs for the 9 priority camps within PAP**
- **Shown two examples (waterproof roofs and latrines) of using survey results to project needed humanitarian supplies**
- **A number of recommendations have been made for actions to fix the populations of IDPs in outlying cities**
- **Identified a number of areas where refinement of the questionnaire system to address key issues is warranted**
 - Purposive sampling in space and for IDPs
 - Major reductions in # of questions in some of the surveys to obtain statistically significant short term trend information