The 2017 Infectious Disease Smorgasbord

Some Hot ID Topics for Health Units

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MED’s Trop Med – ID Team

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- Assist with LTBI management, diarrhea work ups, parasitology, Zika and making appts
  - Help you with forms, logistics of LTBI, Zika testing, etc
The Infectious Diseases Smorgasbord

- What we will cover:
  - New diarrhea recs for travelers and for those living in high threat areas
  - All these whacky bird flus
    - What should you worry about?
  - TB Guidance
    - IGRAs are becoming the preferred LTBI assay
  - Vector borne disease update
    - Malaria stats
    - Yellow Fever
    - Zika and pregnancy
  - HIV PEP, new meds and PrEP
  - The BioFire Film Array in HUs
  - CDC recs to limit use of quinolones
  - Daily Demographics and Disease Reporting
  - Human Subjects Protection Committee
Diarrhea: New strategies for Health Units

• What we will cover:
  – Epidemiology
  – Role of probiotics
  – Change in approach
  – Change in antibiotic recs
Incidence Rates of Traveler’s Diarrhea in the Initial 2 Weeks of Stay
Among travelers from industrialized nations

Regional differences in diarrhea etiology
ETEC still wins most places except SE Asia

<table>
<thead>
<tr>
<th>Organism</th>
<th>Latin America and Caribbean</th>
<th>Africa</th>
<th>South Asia</th>
<th>Southeast Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterotoxigenic <em>Escherichia coli</em></td>
<td>$\geq 35$</td>
<td>25-35</td>
<td>15-25</td>
<td>5-15</td>
</tr>
<tr>
<td>Enteroaggregative <em>E coli</em></td>
<td>25-35</td>
<td>$&lt;5$</td>
<td>15-25</td>
<td>No data</td>
</tr>
<tr>
<td><em>Campylobacter</em></td>
<td>$&lt;5$</td>
<td>$&lt;5$</td>
<td>15-25</td>
<td>25-35</td>
</tr>
<tr>
<td><em>Salmonella</em></td>
<td>$&lt;5$</td>
<td>5-15</td>
<td>$&lt;5$</td>
<td>5-15</td>
</tr>
<tr>
<td><em>Shigella</em></td>
<td>5-15</td>
<td>5-15</td>
<td>5-15</td>
<td>$&lt;5$</td>
</tr>
<tr>
<td>Norovirus</td>
<td>15-25</td>
<td>15-25</td>
<td>5-15</td>
<td>$&lt;5$</td>
</tr>
<tr>
<td>Rotavirus</td>
<td>15-25</td>
<td>5-15</td>
<td>5-15</td>
<td>$&lt;5$</td>
</tr>
<tr>
<td><em>Giardia</em></td>
<td>$&lt;5$</td>
<td>$&lt;5$</td>
<td>5-15</td>
<td>5-15</td>
</tr>
</tbody>
</table>

Compiled from multiple studies 2001-11. Studies so not uniformly report all pathogens, no pathogen in up to 50% of cases
<table>
<thead>
<tr>
<th>Factors</th>
<th>Mechanism</th>
<th>Predictable Pathogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure travel, visiting friends and relatives</td>
<td>Varying exposure to contaminated food and beverages</td>
<td>All that cause traveler’s diarrhea&lt;sup&gt;22&lt;/sup&gt;</td>
</tr>
<tr>
<td>Age</td>
<td>Unknown; possibly more pathogens ingested (crawling infants, larger appetite in adolescents)</td>
<td>All that cause traveler’s diarrhea&lt;sup&gt;22&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lack of caution in beverage and food selection</td>
<td>Varying exposure to contaminated food and beverages</td>
<td>All that cause traveler’s diarrhea&lt;sup&gt;22&lt;/sup&gt;</td>
</tr>
<tr>
<td>Use of proton pump inhibitor therapy</td>
<td>Altered killing of enteric pathogens from gastric hydrochloric acid</td>
<td>All bacterial, some parasitic (studies only in nontravelers)&lt;sup&gt;23&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Interleukin 8 AA: high producers leading to greater intestinal inflammation</td>
<td>SNP increases frequency of enteroaggregative Escherichia coli, Clostridium difficile&lt;sup&gt;24,25&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Lactoferrin: high producers leading to greater intestinal inflammation</td>
<td>SNP increases frequency of all that cause traveler’s diarrhea and traveler’s diarrhea with intestinal inflammation&lt;sup&gt;26&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>High producers of interleukin 10 are more susceptible to TD, which may reflect immunomodulatory effects of heat-labile toxin of enterotoxigenic E coli stimulating increases in interleukin 10</td>
<td>SNP increases frequency of enterotoxigenic E coli traveler’s diarrhea&lt;sup&gt;27&lt;/sup&gt;</td>
</tr>
<tr>
<td>Certain genetic factors (mostly polymorphism associations)</td>
<td>Osteoprotegerin: immunoregulatory member of tumor necrosis factor receptor superfamily that may function as an anti-inflammatory modulator that increases susceptibility to traveler’s diarrhea</td>
<td>Especially inflammatory forms of all that cause traveler’s diarrhea&lt;sup&gt;28&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>CD14: receptor for bacterial lipopolysaccharide binding associated with the innate immune response to enteric infection and inflammation; different SNPs may increase susceptibility to traveler’s diarrhea; others may lead to protection</td>
<td>SNPs leading to high production are associated with traveler’s diarrhea&lt;sup&gt;29&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Type O blood may influence enteric infection through uncertain mechanisms</td>
<td>Cholera and severe cholera caused by Vibrio cholerae O1&lt;sup&gt;30&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Not possessing the nonsense mutation in FUT2 gene that provides resistance to infection related to virus attachment and internalization</td>
<td>Noroviruses&lt;sup&gt;31&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
Probiotics have modest effects for prevention of diarrhea.

The exact best agents and dosing have not yet been determined.

- Yogurt (Lactobacillus bulgaricus and Streptococcus thermophilus) may be the most inexpensive and readily available probiotic option.
Role of probiotics in Preventing TD

![Diagram showing risk ratios and 95% confidence intervals for various studies.

Table 1: Efficacy of various probiotics for the prevention of traveler's diarrhea from 12 randomized treatment arms.

<table>
<thead>
<tr>
<th>Study Name</th>
<th>Risk Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kollaritsch_89_SB_lowdose</td>
<td>0.79 (0.66, 0.94)</td>
</tr>
<tr>
<td>Kollaritsch_89_SB_highdose</td>
<td>0.75 (0.62, 0.90)</td>
</tr>
<tr>
<td>Kollaritsch_93_SB_lowdose</td>
<td>0.87 (0.72, 1.06)</td>
</tr>
<tr>
<td>Kollaritsch_93_SB_highdose</td>
<td>0.74 (0.60, 0.92)</td>
</tr>
<tr>
<td>Pozo_78_LALB</td>
<td>1.19 (0.52, 2.69)</td>
</tr>
<tr>
<td>Hilton_97_LGG</td>
<td>0.52 (0.18, 1.52)</td>
</tr>
<tr>
<td>Kateraris_95_LA</td>
<td>1.08 (0.67, 1.75)</td>
</tr>
<tr>
<td>Kateraris_95_LF</td>
<td>1.00 (0.59, 1.69)</td>
</tr>
<tr>
<td>Black_89_Mix1</td>
<td>0.61 (0.41, 0.89)</td>
</tr>
<tr>
<td>Kollaritsch_89_LA</td>
<td>1.13 (0.91, 1.40)</td>
</tr>
<tr>
<td>Oksanen_90_LGG</td>
<td>0.88 (0.75, 1.04)</td>
</tr>
<tr>
<td>Kollaritsch_89_vaccine</td>
<td>1.01 (0.81, 1.27)</td>
</tr>
<tr>
<td>Overall</td>
<td>0.85 (0.79, 0.91)</td>
</tr>
</tbody>
</table>

Table 1: Efficacy of various probiotics for the prevention of traveler’s diarrhea from 12 randomized treatment arms.

<table>
<thead>
<tr>
<th>N</th>
<th>Type of tourists, to destination</th>
<th>Probiotic</th>
<th>Dose/d</th>
<th>Treatment duration</th>
<th>Follow-up</th>
<th>Probiotic-treated</th>
<th>Control group</th>
<th>Weight</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>832</td>
<td>Austrian, hot climates</td>
<td>SB</td>
<td>$5 \times 10^{0}$</td>
<td>3 wk</td>
<td>0</td>
<td>143 (34)</td>
<td>173 (43)</td>
<td>233</td>
<td>17.1</td>
</tr>
<tr>
<td>805</td>
<td>Austrian, hot climates</td>
<td>SB</td>
<td>$1 \times 10^{10}$</td>
<td>3 wk</td>
<td>0</td>
<td>127 (32)</td>
<td>173 (43)</td>
<td>233</td>
<td>16.5</td>
</tr>
<tr>
<td>713</td>
<td>Austrian, varied</td>
<td>SB</td>
<td>$5 \times 10^{0}$</td>
<td>3 wk</td>
<td>0</td>
<td>121 (34)</td>
<td>141 (39)</td>
<td>220</td>
<td>13.4</td>
</tr>
<tr>
<td>664</td>
<td>Austrian, varied</td>
<td>SB</td>
<td>$2 \times 10^{10}$</td>
<td>3 wk</td>
<td>0</td>
<td>87 (29)</td>
<td>141 (39)</td>
<td>220</td>
<td>12.4</td>
</tr>
<tr>
<td>50</td>
<td>US, Mexico</td>
<td>Lactinex</td>
<td>$4-7 \times 10^{9}$</td>
<td>8 Days</td>
<td>3 wk</td>
<td>9 (35)</td>
<td>7 (29)</td>
<td>17</td>
<td>0.7</td>
</tr>
<tr>
<td>245</td>
<td>US, varied</td>
<td>LGG</td>
<td>$2 \times 10^{1}$</td>
<td>1-3 wk</td>
<td>0</td>
<td>5 (39)</td>
<td>9 (7.4)</td>
<td>110</td>
<td>0.9</td>
</tr>
<tr>
<td>202</td>
<td>Soldiers to Belize</td>
<td>LA</td>
<td>$2 \times 10^{10}$</td>
<td>3 wk</td>
<td>1 wk</td>
<td>26 (25.7)</td>
<td>24 (24)</td>
<td>77</td>
<td>2.3</td>
</tr>
<tr>
<td>319</td>
<td>Danish to Egypt</td>
<td>Mix1</td>
<td>$3 \times 10^{10}$</td>
<td>2 wk</td>
<td>0</td>
<td>20 (43)</td>
<td>33 (71)</td>
<td>14</td>
<td>3.2</td>
</tr>
<tr>
<td>756</td>
<td>Finnish, Turkey</td>
<td>LGG</td>
<td>$2 \times 10^{9}$</td>
<td>2 wk</td>
<td>0</td>
<td>82 (53)</td>
<td>78 (47)</td>
<td>87</td>
<td>7.3</td>
</tr>
<tr>
<td>310</td>
<td>Austrian, to hot climates</td>
<td>Mix2</td>
<td>Dead</td>
<td>3 wk</td>
<td>0</td>
<td>85 (50)</td>
<td>70 (46)</td>
<td>71</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Abbreviations: N, number of subjects with evaluable outcome; SB, Saccharomyces boulardii; Lactinex, L. acidophilus and L. bulgaricus; LGG, Lactobacillus rhamnosus GG; LA, Lactobacillus acidophilus; LF, Lactobacillus fermentum KLD; Mix1, L. acidophilus-L. bulgaricus-Bifidobacterium bifidum-Streptococcus thermophilus; Mix2, heat killed Salmonella+Shigella+E. coli.
Changes in diarrhea recs

- Focus on diarrhea **effect on performance** as opposed to number of stools
- **Azithromycin** has become first line for empiric therapy worldwide
  - This is due to quinolone resistance that is increasing worldwide
  - Quinolones are an alternate drug and may be used as first line if sensitivities are available
- Emphasis on **single dose therapy** for all but severe cases
How to define diarrhea severity?
Move away from counting stools to assessing affect on performance

• Previously:
  • **Mild**: 1-2 loose stools without fever or blood
  • **Moderate**: ≥3 loose stools in 24h associated without fever or blood
  • **Moderate to severe**: ≥3 loose stools in 24h with fever and/or cramping
  • **Severe**: >6 loose stools in 24h with fever and/or blood

• New recs:
  • **Mild**: Tolerable symptoms does not interfere with performance, min fever, no blood
  • **Moderate**: diarrhea impacts performance but minimal fever, no blood
  • **Mod to severe**: incapacitating diarrhea but minimal fever, no blood
  • **Severe**: Febrile (>101°F or 38.5°C) Diarrhea and/or Bloody Diarrhea
<table>
<thead>
<tr>
<th>Severity</th>
<th>Antibiotic</th>
<th>Antimotility Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild</strong></td>
<td>Still not indicated</td>
<td>Observe or loperamide 2 mg after each loose stool or bismuth subsalicylate 2 qid</td>
</tr>
<tr>
<td>(1 – 2 loose stools without fever or blood)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
<td>Consider 1 g single dose therapy OR Quinolones x 3d OR Azithromycin 500 mg qd x 3</td>
<td>Loperamide or bismuth</td>
</tr>
<tr>
<td>(≥ 3 BMs without fever or blood)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moderate to Severe</strong></td>
<td>Quinolones or Azithromycin as above, consider 3d therapy in more severe cases</td>
<td>Loperamide or bismuth</td>
</tr>
<tr>
<td>(≥ 3 BMs with fever and/or cramping)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Severe</strong></td>
<td>Quinolones or Azithromycin, may consider therapy for 3-5 days</td>
<td>Avoid unless close observation</td>
</tr>
<tr>
<td>(&gt; 6 BMs with fever and/or heme, tenesmus)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use of quinolones or azithromycin should be guided by area of travel. SE Asia should use azithro as first line. Levofloxacin may be better than ciprofloxacin. Rifaximin 200 mg tid x 3d can be substituted if bacterial diarrhea in area is almost exclusively *E. coli*.
# Guidance for Acute Diarrhea Treatment

<table>
<thead>
<tr>
<th>Diarrhea</th>
<th>Antibiotic</th>
<th>Additional Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild</strong></td>
<td>Not indicated</td>
<td>Observe or loperamide or bismuth</td>
</tr>
<tr>
<td>(tolerable symptoms, does not interfere with performance, no fever or blood)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moderate</strong> to Severe (incapacitating)</td>
<td><strong>Single dose therapy:</strong> Azithromycin 500mg, Levofloxacin 500mg (alternate), Rifaximin 1650mg (if above cannot be used)</td>
<td>Loperamide recommended with antibiotics (but may be administered without antibiotics)</td>
</tr>
<tr>
<td><strong>Watery Diarrhea</strong> (no fever or blood)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Febrile</strong> (T &gt;101°F or 38.5°C)</td>
<td><strong>Single dose therapy:</strong> Azithromycin 1000 mg, Macrolide resistant areas: Levofloxacin 500mg qd x3d</td>
<td>Loperamide recommended only with concomitant antibiotics</td>
</tr>
<tr>
<td><strong>Diarrhea and/or Dysentery</strong> (bloody diarrhea)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Illness worsens after 24 hours or Fails to improve after 72 hours</strong></td>
<td><strong>Consider:</strong> Extending daily dose up to 3d, Alternative antibiotic, Expert consultation</td>
<td>Administer loperamide cautiously</td>
</tr>
</tbody>
</table>

- Azithromycin is the preferred agent for all regions (unless there is demonstrated macrolide resistance or fluoroquinolone sensitivity in an area).
- SE Asia should not use fluoroquinolones unless the patient’s isolate demonstrates sensitivity.
Treating diarrhea with probiotics
We’re not there yet for adults

Time to last unformed stool

Questions about diarrhea?

That awkward moment when you realize you have diarrhea instead of gas.

I was sorry to hear about your explosive diarrhea.
Directed to you at Country Team:
OMG we have an outbreak of H5N8, do we activate the pandemic response?!

- Outbreaks of either *Highly Pathogenic Avian Influenza (HPAI)* or *Low Pathogenic Avian Influenza (LPAI)* refer to pathogenicity in cell culture or in birds NOT humans
  - LPAI may cause no disease or mild dz in birds manifested as ruffled feathers or decreased egg production and may be difficult to track
  - HPAI may cause severe disease, high mortality in birds, easier to track

- Track avian and swine infections because:
  - effects on the poultry and pork industry
  - potential for mutations that lead to:
    - infection in humans
    - efficient transmission from human to human
  - H1N1 is a swine flu that adapted to humans
    - it has been in the vaccine for 7 years!
How Infected Backyard Poultry Could Spread Bird Flu to People

Human Infections with Bird Flu Viruses Rare But Possible

1 Direct Contact
(Most Common)

- Touching virus and then touching the eyes, nose or mouth

Infection can occur without touching poultry.

2 Contaminated Surfaces

- Healthy looking birds can still spread bird flu

3 Bird Flu Virus in the Air (in Droplets or Dust)

- Virus enters through the eyes, nose or mouth

- Nasal passage

- Lungs

- Flapping wings
- Scratching
- Shaking head

www.cdc.gov/flu/avianflu/avian-in-humans.htm
Well, some FSOs are having intimate chicken contact
Avian Flu: H5N1, H5N8, H5N5, H5N2, H7N9

Should we worry about the latest avian flu du jour?

H7N9 infections continue to climb in China

- Chinese confirmed 419 human cases of avian influenza A (H7N9) since Sep 2016.
  - Macau and Hong Kong Special regions and adjacent provinces.
  - Over 50 deaths
  - Most patients report exposure to live poultry or poultry markets.
  - 7-15% of birds in markets tested positive

- So far H5N1 appears to be fading away and being replaced by other avian flu strains in bird populations
  - most remain unlikely to infect humans
  - Human to human transmission does not occur or is very rare
  - Major concern is for chicken, duck and turkey farmers and markets
    - 0.17% of poultry farmers have antibodies
Avoiding Avian Flu
Most DoS staff are at very low risk

- Do not touch birds, pigs, or other animals.
  - Don’t touch animals, whether they are alive or dead.
  - Avoid live bird or poultry markets.
  - Avoid other markets or farms with animals (wet markets).

- Eat food that is fully cooked.
  - Eat meat and poultry fully cooked (not pink) and served hot
  - Eat hard-cooked eggs (not runny).
  - Don’t eat or drink dishes that include blood from any animal
  - Don’t eat food from street vendors.

- Practice hygiene and cleanliness.
Some new developments regarding TB in MED

U.S. Department of State, Bureau of Medical Services

6614: Tuberculosis Guidelines

DoS MED Forms related to tuberculosis are ISO documents available on the MED Infectious Diseases website. Most forms are electronically fillable or can be printed out and filled in by hand:

- 6610 TB Screening Questionnaire
- 6611 Evaluation for TST positive individuals
- 6614 DoS Med TB Guidance (this document)
- 6615 Isoniazid Rifapentine DOT for LTBI
- 6617 Latent TB Completion Form
- 6618 DOT Record for TB or LTBI Treatment
- 6620 Patients’ TST Record Card

Abbreviations used in these guidelines:

AFB- Acid Fast Bacilli
BCG- Bacille Calmette Guérin
CDC – US Centers for Disease Control
CXR- Chest x-ray
DOT- Directly Observed Therapy
EFM- Eligible Family Member
FDA- US Food and Drug Administration
HU- Health Unit
IGRA – Interferon Gamma Release Assay
ISO – Intl Organization for Standardization
LES – Locally Engaged Staff
LTBI- Latent Tuberculosis Infection
MDR TB- Multiply Drug Resistant TB
MTB- Mycobacterium tuberculosis
PA- Posterior Anterior (radiograph)
PPD- Purified Protein Derivative
TB- Tuberculosis
TST- Tuberculin Skin Test
WHO- World Health Organization
XDR TB- Extensively Drug Resistant TB

• **Recs IGRA rather than TST in ≥5 yo who meet the following criteria:**

  1. are likely to be infected with Mtb *(a new + in MED population)*
  2. have a low or intermediate risk of disease progression *(most of MED population)*
  3. has been decided that testing for LTBI is warranted *(warranted in MED due to exposures)*
  4. either have a history of BCG or are unlikely to return to have their TST read *(many BCG!)*
  5. *(strong recommendation, moderate-quality evidence)*

• **Remarks:** A TST is an acceptable alternative, especially in situations where an IGRA is not available, too costly, or too burdensome. *(availability is in an issue in MED)*

• **“No guidelines can take into account all of the compelling individual clinical circumstances”**

• **Due to inability to obtain IGRAs at most posts and the need to compare apples to apples MED will continue to prefer TST over IGRAs**

• These recs are likely to evolve as IGRAs are more readily available worldwide
Are all IGRAs created equal?

Possibly not

- **Quantiferon Gold** is generally more available but the *T-Spot.TB* may be a better IGRA for use in the HU setting

- An evolving situation but, for now, these are the only two IGRAs that should be used in MED
## Treatment Regimens for Latent TB Infection

<table>
<thead>
<tr>
<th>Drug(s)</th>
<th>Duration</th>
<th>Interval</th>
<th>Minimum Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isoniazid</td>
<td>9 months</td>
<td>Daily</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Twice weekly</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>Daily</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Twice weekly</td>
<td>52</td>
</tr>
<tr>
<td>Isoniazid &amp; Rifapentine</td>
<td>3 months</td>
<td>Once weekly</td>
<td>12</td>
</tr>
<tr>
<td>Rifampin</td>
<td>4 months</td>
<td>Daily</td>
<td>120</td>
</tr>
</tbody>
</table>

*Preferred regimen in MED*

LTBI Treatment Options for HUs
DOT vs Patient Administered

- Daily regimens are recommended for patient administration.
- Intermittent (weekly or twice weekly regimens) are recommended for Directly Observed Therapy (DOT).
- Most patients (>12 yo) prefer 12 weekly doses of isoniazid-rifapentine even if it is DOT:
  - Rifapentine is expensive but can be ordered thru Express Scripts (only shows up under tradename Priftin).
  - Have patient bring meds to HU for you to administer.
  - No monitoring of liver assoc enzymes needed (check baseline in most).
  - No B6 needed for otherwise healthy.
- Use a log to document administration of meds.
- Occasional travel for patient?
  - Email or phone DOT (but do NOT start tx at time of PCS or travel).

For most adults it’s all 9s:
- 9/900/900
- Nine tablets each week
- Three 300 mg isoniazid, $t_{\frac{1}{2}}$ 1-2h
- Six 150 mg rifapentine, $t_{\frac{1}{2}}$ 13-14h
  - Do NOT substitute with rifampin, $t_{\frac{1}{2}}$ 3h

Take after a meal
- even though isoniazid pkg insert says to take on an empty stomach less nausea with food

Side effects
- Most tolerate very well
- Headache, some nausea common evening of dose
- Some develop fever and myalgias the next day
- Use ibuprofen or naproxen for sx not acetaminophen

Completion of LTBI Treatment

Documentation for patient and in eMed

U.S. Department of State, Office of Medical Services

6615 Directly Observed Therapy for Latent TB Infection (LTBI) with 12 week regimen of Isoniazid and Rifapentine

Date: __________________
Patient: __________________
Patient Number: __________________
Physician: __________________

CXR Performed: Yes ☐ No ☐ Not Indicated ☐
Labs reviewed: Yes ☐ No ☐ Not Indicated ☐

Med Rx:
- Isoniazid: mg q week x 12
- Rifapentine: mg q week x 12

Date DOT administered: __________________
Administered by: __________________

Side effects reported (Circle):
- Fever
- Nausea
- Vomiting
- Anorexia
- Abdominal Pain
- Jaundice
- Other

This patient was determined to have LTBI based on the results of:
- Tuberculin skin test (PPD) place on Date of TST with mm x mm induration
- Positive Interferon Gamma Releasing Assay (IGRA) on Date of IGRA

A Chest Radiograph was performed on Date of CXR and demonstrated No evidence pulmonary dx

Patient was treated for LTBI with:
- Isoniazid daily for 9 months from initial date to completion date
- Rifapentine daily for 4 months from initial date to completion date
- Isoniazid/Rifapentine weekly for 12 weeks from initial date to completion date
- Other regimen: Describe regimen

This patient has completed therapy for latent TB infection and should not receive additional TSTs or IGRA. If exposed or suspected of active TB infection patient should be evaluated for symptoms and considered for additional imaging with CXR (there is no indication for repeated periodic CXR in the absence of symptoms or exposure to an active TB case)

Provider:

[Form Fields]

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<tr>
<th>Date</th>
<th>DOT</th>
<th>Number</th>
<th>Name</th>
<th>DOB</th>
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<td>Location</td>
<td>Created By</td>
<td>Updated By</td>
<td>Updated Date</td>
</tr>
</tbody>
</table>

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Available MED Forms

U.S. Department of State, Bureau of Medical Services

6610: Tuberculosis Screening Questionnaire

Date: __________

Name: ___________________ DOB: ________ Med ID#: ________

Please indicate your symptoms by checking YES or NO, please add comments to help clarify your responses,
(from a computer, click on the grey area to type, the boxes will accept even long explanations):

1. Do you have cough today? YES ☐ NO ☐ Comment: __________
2. Does your cough produce sputum (phlegm)? YES ☐ NO ☐ Comment: __________
3. Do you have a cough lasting more than 3 weeks? YES ☐ NO ☐ Comment: __________
4. Do you have any chest pain? YES ☐ NO ☐ Comment: __________
5. Do you see blood in your sputum? YES ☐ NO ☐ Comment: __________
6. Have you coughed up any blood in the last month? YES ☐ NO ☐ Comment: __________
7. Do you have fevers? YES ☐ NO ☐ Comment: __________
8. Do you have chills? YES ☐ NO ☐ Comment: __________
9. Do you have night sweats? YES ☐ NO ☐ Comment: __________
10. Have you had decreased appetite? YES ☐ NO ☐ Comment: __________
11. Have you had weight loss? YES ☐ NO ☐ Comment: __________
12. Do you have fatigue, fatigued easily, or feel weak? YES ☐ NO ☐ Comment: __________

U.S. Department of State, Office of Medical Services

Newly Identified Positive Tuberculin Skin Test Evaluation Form 6611

Date: __________

1. Name: ___________________ DOB: ________ Med ID#: ________
2. History of BCG? ☐ NO ☐ Unsure ☐ YES age at last BCG if known: __________
3. TST results
   Date of skin test: __________
   Induration: __________ mm X __________ mm
   Person reading TST result: ___________________
   Additional Comments: __________

4. History of Prior skin tests? ☐ NO
   ☐ YES most recent previous test date: __________
   Induration: __________ mm X __________ mm

5. Any prior IGRA (Interferon Gamma Release Assay)? ☐ NO
   ☐ YES Date of IGRA and Result: __________

6. Does patient fall into a high risk (immunocompromised) group for TB? ☐ NO
   ☐ YES Risk?: __________

7. Previous overseas assignments or residence in TB risk areas? ☐ NO TB risk areas
   ☐ YES Which TB risk areas? __________

Recommended Disposition Schedule: A-32-SIS-55 Permanent

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<th>Doc #</th>
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LTBI Bottom Line

For now:  

Guidance for MED  

- TST with Tubersol PPD is the preferred testing  
- IGRA with either *Quantiferon Gold in Tube* or *T Spot.TB* are alternatives

CXRs:  

- A positive TST in an individual with no hx of BCG warrants a CXR even if an IGRA is negative  
- A positive IGRA warrants a CXR regardless of TST result  
- **Periodic repeat CXRs are NOT INDICATED** for those with LTBI who have an initial normal CXR and no symptoms but choose not to be treated  
  - Should have symptom screening questionnaire, if + consider CXR

Treatment of LTBI:  

- Preferred regimen is 12 weekly doses isoniazid/rifapentine

Administer BCG to newborns at a high threat post?  

- NO! Not a MED recommendation  
- Lose the ability to determine if child is infected with TB for 5 years (i.e. when an IGRA can be performed)
Zika Virus Update

Aedes *egypti*

Aedes *albopictus*

**Pregnant Women with Any Lab Evidence of Zika Virus Infection**
- US States and DC: 1,394
- US Territories: 3,071
*Source: Pregnancy Registries as of January 24, 2017*

**More on Outcomes**

**Zika Virus Disease Cases Reported to ArboNET**
- US States and DC: 5,001
- US Territories: 36,638
*Source: ArboNET as of February 8, 2017*
CDC Zika Travel Information

Travel Notices vs Travel Considerations vs Other Countries with Endemic Zika

Traveling soon? Get Zika info on-the-go.

Sign up to receive Zika updates for your destination with CDC’s new text messaging service. Text PLAN to 855-255-5606® to subscribe.

Zika Travel Notices

- Zika Virus in Cape Verde
- Zika Virus in Mexico

Asia
Currently includes: Singapore

The Caribbean
Currently includes: Anguilla; Antigua and Barbuda; Aruba; The Bahamas; Barbados; Bonaire; British Virgin Islands; Cayman Islands; Cuba; Curacao; Dominica; Dominican Republic; Grenada; Guadeloupe; Haiti; Jamaica; Martinique; Montserrat; the Commonwealth of Puerto Rico, a US territory; Saba; Saint Barthélemy; Saint Kitts and Nevis; Saint Lucia; Saint Martin; Saint Vincent and the Grenadines; Sint Eustatius; Sint Maarten; Trinidad and Tobago; Turks and Caicos Islands; US Virgin Islands

Special Travel Considerations for Endemic Countries in Southeast Asia

Zika Virus in Southeast Asia

Travelers have returned from certain areas of Southeast Asia with Zika virus infection. These countries have either reported local Zika virus transmission or are next to countries with known Zika virus transmission. Because of this, CDC recommends pregnant women should consult with their health care provider and:

Other Countries with Endemic Zika

Some countries in Africa, the Pacific Islands, and Asia have reported Zika in the past and may report occasional new cases. The risk to travelers in these endemic countries is likely much
CDC-WHO-Euro CDC Zika Guidelines

To be released 17 Feb

- Now four categories of Zika risk countries
- Many new countries will be added to risk areas for pregnant women
Zika has markedly decreased in the Americas in 2017
Areas with active mosquito transmission of Zika virus
Zika Virus Impact
Pregnant Women in Health Units

As of Feb 2017, 172 women on the registry list with pregnancies in the areas under a CDC Zika travel advisory since Jan 2016:

- 74 have a recorded departure date from post
  - 66 left on an OB medevac
    - 56/66 (85%) left before 34 weeks
    - 10/66 (15%) left at 34 weeks or later
  - 8 curtailed or PCSed – all 8/8 left before 34 weeks
- Women who did an OB medevac from a Zika location spent, on average, **101 extra days on medevac.**
- The average duration of a medevac, so far, is 185 days.

---

### Zika cases and congenital syndrome associated with Zika virus reported by countries and territories in the Americas, 2015 - 2017

**Cumulative cases**

Data as of 9 February 2017 2:00 PM EST

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<td>5,226</td>
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<td>44</td>
<td>361,646</td>
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</table>
Pregnancy Status For Pregnant Women Identified at Posts Under a CDC Zika Travel Advisory Since 1/15/2016*, n= 123, (Updated 1/18/2017)

- OB Medevac 34 weeks or later, 10, 8%
- Still Pregnant at Post, 17, 14%
- Curtailed, 8, 6%
- Delivered at Post, 32, 26%
- Early OB Medevac (before 34 weeks), 56, 46%

*172 pregnant women identified in these posts, 49 of 172 had incomplete data and are not included in this chart
Month of Medevac Among Pregnant Women in Posts Under a CDC Zika Travel Advisory Since January 15, 2017 (n=70), as of 1/17/2017
• MED Website at [MED Alert: Zika](#) will be updated with new developments and FAQs

THE MED Alert was started with Ebola and is the format that will be used for future outbreaks as they occur
MED Recommendations for Pregnant Women

*An Alert not an Emergency!*

- Majority of pregnant women who develop Zika give birth to a healthy baby
- Zika activity is not uniformly distributed throughout affected countries
  - Critical for providers to give guidance about local Zika risk
- Emphasize the same *Aedes* control and efforts to decrease biting for dengue and chikungunya
- *Aedes* spp mosquitos are rare above 1700 meters (5600 feet) and absent above 2000 meters (6500 feet)
  - Some reports now of *Aedes* found in Mexico City. ? Adaptation of *Aedes*?
- Some posts that will NOT have a Zika threat due to altitude include:
  - Bogotá, Colombia: 2625m
  - LaPaz, Bolivia: 3640m
  - Mexico City, Mexico: 2240m
  - Quito, Ecuador: 2850m
  - Sucre, Bolivia 2750m
Who to test for Zika infection?

CDC recs testing of SYMPTOMATIC or Pregnant Patients

- **Symptomatic** ♂ or ♀, including pregnant ♀, or asymptomatic pregnant ♀ residing in or who have recently traveled to an area of active Zika transmission
- **Symptomatic** ♂ or ♀ who has had unprotected sex with a partner confirmed to have Zika virus infection
- Symptomatic or asymptomatic pregnant ♀ who have had unprotected sex with a partner who recently visited or resides in an area of active Zika transmission
- Pregnant ♀ who reside in, traveled to, or had unprotected sex with a partner residing in or who traveled to Miami-Dade, Florida after 1 Aug 2016 or Brownsville, Texas after 29 Oct 2016.
Zika Testing
Confusing and often not definitive

- PCR sensitive and specific ~1 week after symptom onset
- Virus specific IgM and neutralizing Abs the end of 1st week
  - Notoriously non specific:
    - YF, dengue, West Nile, TBE, JEV all can give false positives. IgG is even more non specific
- Commercially available tests for Zika virus:
  - issues with sensitivity/specificity
  - Will not be paid for by MED
- Zika testing is performed:
  - CDC Arbovirus Diagnostic Laboratory
  - Some state/territorial health departments.
  - Most affected countries have MoH reference lab capable of performing Zika testing
- Helpful CDC links:
  - [Collecting & Submitting Specimens At Time of Birth for Zika Virus Testing](#)
  - [Diagnostic Tests for Zika Virus](#)
Zika Virus Testing

- Health Units should contact local public health to facilitate testing in country if reliable and accessible.

- To obtain CDC Zika testing:
  - Discuss patient with ID or Carolyn Mermon in the DC MED lab.
  - Send specimen to Carolyn Mermon in MED lab DC
    - Include the form 3428.6

---

**3428.6 MED LAB CDC Specimen Submission Request for Zika Virus Testing**

**PLEASE TYPE IN THE FOLLOWING INFORMATION**

(CDC will NOT run tests without all information including dates of symptom onset and travel filled in)

**CDC Test Order Name and Test Code:**
- Arbovirus Serology CDC-10282
- Arbovirus Molecular Detection (Arbovirus RT PCR) CDC-10280

<table>
<thead>
<tr>
<th>Asymptomatic pregnant women order only Serology (10282)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic patients order both</td>
</tr>
</tbody>
</table>

**PATIENT INFORMATION**

- Patient LAST NAME
- FIRST NAME
- M.I.

- BIRTH DATE
- DoS MED Patient ID Number:
- GENDER: M [ ] F [ ]

**Personal e-mail (optional)**

**SPECIMEN INFORMATION**
**CDC Zika recs in pregnancy**

Do not travel to an area with active Zika virus transmission

- **Sexual contact:**
  - Partners who live in, or traveled to, an area with Zika should use condoms for the remainder of the pregnancy

**Testing Asymptomatic Women**

- **Outside of Zika zone:**
  - Within 2-12 weeks of last exposure:
    - PCR of serum and urine
    - IgM serologic testing

- **In areas with active Zika:**
  - Zika virus IgM testing during the 1st and 2nd trimesters
  - immediate PCR of IgM-positive
    - positive PCR is definitive for Zika virus infection.

**Testing Symptomatic:**

- PCR of serum and urine up to 2 weeks after sx onset
CDC recs for those desiring pregnancy

<table>
<thead>
<tr>
<th>Suggested timeframe to wait before trying to get pregnant</th>
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</thead>
<tbody>
<tr>
<td>Possible exposure via recent travel or sex without a condom with a partner infected with Zika</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait at least 8 weeks after symptoms start or last possible exposure</td>
<td>Wait at least 6 months after symptoms start or last possible exposure</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>People living in or frequently traveling to areas with Zika</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
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<tbody>
<tr>
<td>Positive Zika test</td>
<td>Wait at least 8 weeks after symptoms start</td>
</tr>
<tr>
<td>No testing performed or negative test</td>
<td>Talk with doctor or healthcare provider</td>
</tr>
</tbody>
</table>
How long is Zika transmitted sexually?

- **Zika has been found in semen and vaginal fluids**
  - Four published reports of Zika virus cultured from semen
    - Longest was 69 days after symptom onset.
  - Detection of Zika RNA (i.e. PCR positive):
    - found in semen 188 days after symptom onset
    - up to 3 days in vaginal, 11 days in cervical, fluids after symptom onset

- Zika RNA may indicate the presence of infectious virus, or simply indicate leftover genetic material not capable of causing infection.
  - PCR + does not necessarily mean the virus that can cause an infection or that a person can spread it to others.

- In one case, sexual transmission is estimated to have occurred 32-41 days after onset of the man’s symptoms.

- Although Zika virus has been found in breastmilk no indication of any transmissions and breastfeeding should be continued.
Zika persistence after initial infection
How long is virus present and how clinically relevant?

- Tested serial semen samples from 23 symptomatic male (6 PCR+ and 7 Ab+) patients in the UK dx with Zika virus infection
  - High levels in 13 (56%)
  - Not detected in 9 (39%); 1 (4%) indeterminant
- Viral clearance times are not consistent and may be prolonged
- Among 12 patients with Zika in their semen <28 days all had indication of large amount of virus.
- Only 1 had culture + semen for Zika and that was at day 13

Atkinson B et al. Presence and persistence of Zika virus RNA in semen, United Kingdom, 2016. Emerg Infect Dis 2017 Apr
Comprehensive review identified five unique features of CZS that are rarely seen with other congenital infections:

1. severe microcephaly with partially collapsed skull
2. thin cerebral cortices with subcortical calcifications
3. macular scarring and focal pigmentary retinal mottling
4. congenital contractures (arthrogryposis)
5. marked early hypertonia

Other subtle manifestations may become apparent as children age.

Why no microcephaly in Africa?

Vulnerability of primitive human placental trophoblast to Zika virus
CMV is the most common congenital infection and affects 0.7% of all births and is the leading cause of non genetic developmental disabilities.

Zika virus: are we going too far?

Because of the risk of sexual transmission and reported persistence of Zika virus RNA in semen, the Centers for Disease Control and Prevention has proposed a 6-month delay before attempts at conception for all men possibly exposed to Zika virus.

A correspondence published in 2016 suggests a potential transmission through other body fluids. After exposure, viral RNA has been detected in urine and saliva for up to 91 days and in vaginal secretions for up to 14 days. Furthermore, infective viral particles have also been isolated from tears in an animal model. Therefore, existing recommendations should also include hygiene precautions to avoid contact with body fluids for pregnant women and couples contemplating conception. Importantly, these recommendations should be applied to any person that has travelled to areas with active Zika virus circulation, as well as those living in endemic regions, and might be quite restricting. Thus, are we not going too far?

Referring to cytomegalovirus, which remains the most common congenital infection affecting approximately 0.7% of newborns, and the leading cause of non-genetic neurodevelopmental disabilities in children, its transmission also occurs through contact with infected body fluids (urine, saliva, blood), as well as sexual contacts. Cytomegalovirus particles have been detected in semen for up to 14 months after exposure, and replication in the testis has been reported in animal models. Nevertheless, despite a cytomegalovirus prevalence of 36–90% depending on age, ethnicity, and social status, no specific recommendations regarding sexual behaviours during pregnancy or delay before conception have ever been elaborated.

Cytomegalovirus particles have been detected in semen for up to 14 months after exposure, and replication in the testis has been reported in animal models. Nevertheless, despite a cytomegalovirus prevalence of 36–90% depending on age, ethnicity, and social status, no specific recommendations regarding sexual behaviours during pregnancy or delay before conception have ever been elaborated.


Manon Vouga, Didier Musso, Bruno Schaub, Alice Panchaud,
*David Baud

Materno-fetal and Obstetrics Research Unit,
Materno-fetal and Obstetrics Research Unit,
Department "Femme-Mère-Enfant", University Hospital Lausanne 1011, Switzerland (MV, DB);
Institute of Microbiology, Faculty of Biology and Medicine, University of Lausanne and University Hospital Lausanne, Switzerland (MV, DB); Unit of Emerging Infectious Diseases, Institut Louis Malarède, Tahiti, French Polynesia (DM);
Multidisciplinary Center of Prenatal Diagnosis, Obstetrics and Gynecology, Department "Femme-Mère-Enfant", University Hospital Martinique, Forte France, France (BS); School of Pharmaceutical Sciences, University of Geneva and University of Lausanne, Geneva, Switzerland (AP); Swiss Teratogen Information Service and Division of Clinical Pharmacology, University Hospital of Lausanne, Lausanne, Switzerland (AP); and Department of Epidemiology, Harvard T H Chan School of Public Health, Boston, MA, USA (AP).
HIV PEP and PrEP
Well tolerated regimens and more people on ARVs

• Tenofovir/emtricitabine (*Truvada*) 300/200 mg po qd ($1300/month)
  plus
• Raltegravir (*Isentress*) 400 mg po bid ($1200/month)
  or
• Dolutegravir (*Tivicay*) 50 mg po qd ($1200/month)

• All three of these drugs are exceptionally well tolerated; if dolutegravir is used
  require once daily dosing with a total of only 2 pills.

• Occupational exposures require urgent medical evaluation. Initiate occupational
  PEP as soon as possible, ideally within 2 hours of exposure.
  • A first dose of PEP should be offered while evaluation is underway.
  • Do not delay for info about the source patient or the exposed worker's
    baseline HIV.

*Updated US Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. Infec Control Hospital Epi, Sep 2013; 34:875-892*
For patients who are HIV infected on ARV therapy. NOT PEP or PREP patients (yet)
Switch tenofovir disproxil fumarate (TDF) to alafenamide (TAF)
Less drug, fewer side effects but higher intracellular concentration

Changing a patient from a TDF to the same combination with TAF can be done safely and is NOT considered a med failure nor a change in drug class
HIV Pre Exposure Prophylaxis (PrEP)

Marked reduction in HIV transmission but when should it be used?

- Use of emtricitabine/tenofovir DPF (Truvada) one tab daily approved by the FDA for prevention of HIV infection in those at high risk
  - covered by most insurance plans.
  - Use of emtricitabine/tenofovir alafenamide (Descovy) is not yet approved for PrEP

- Although this is effective there are concerns regarding:
  - Not using condoms and increasing other STIs
  - Side effects uncommon but need to check renal function initially
  - High cost (~$1000-1200 per month), although cheaper in some countries

- Discuss with patient requesting and have them ensure that their insurance will cover this.
  - This should NOT be purchased and dispensed by the HU but can be Rx thru the mail order pharmacy
  - Do not use emergency PEP drugs for PrEP!
  - If patients request this they generally perceive they have risk and PrEP should probably be Rx.

Biofire Film Array
In more and more HUs

MED plans for PCR data: the first step in electronic reporting of lab diagnoses

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</table>

Blood Culture ID Panel

Meningoencephalitis Panel (in development)

Lower Respiratory Panel (in development)
The dried reagents in the FilmArray pouch are reconstituted by the addition of 1 ml distilled water to the blue port (lower right of diagram), and the diluted sample is injected into the port shown in red.

FilmArray Trends
Nationally aggregated PCR data in Beta testing

- Directly from FilmArray computer to database
- Will allow us to track results from across all of MED
  - Surveillance of laboratory confirmed diagnoses will dovetail with clinical surveillance
- Currently being evaluated by IT for compatibility
Antimalarial resistance in AF
Have we run out of time with Artemisinin Combination Therapy?!

Not pfk13 mutation seen in SE Asia resistance but multi-locus genotypes
Artemisinins are quickly metabolized and only a single full parasite cycle is exposed with a 3 day regimen.
May need sequential ACT treatment over 6 days
Must do a broad genotypic assessment of ACT failures in AF.
No need to change MED treatment recs at this time but be aware of the problem

Four African cases (2 Uganda, 1 Angola, 1 Liberia) treated in the UK failed standard dose artemether/lumefantrine

BRIEF REPORT

Pfk13-independent treatment failure in four imported cases of Plasmodium falciparum malaria given artemether-lumefantrine in the UK

Colin J. Sutherland1, Paul Lansdell1, Mandy Sanders1, Julian Muwanguzi2, Donelly A. van Schalkwyk2, Harparkash Kaur3, Debbie Nolder4, Julie Tucker4, Hayley M. Bennett5, Thomas D. Otto5, Matthew Berriman4, Trupti A. Patel6, Roderick Lynn6, Effrossyni Gkrania-Klotsas6, Peter L. Chioldini6,4
Malaria in Health Units
Consistently too many cases

Confirmed Malaria Cases

- 2008: 29
- 2009: 29
- 2010: 39
- 2011: 28
- 2012: 29
- 2013: 49
- 2014: 27
- 2015: 18
- 2016: 23
# Malaria in HUs

**Confirmed cases are dx in HU, MED DC or accredited lab with verification**

### Where?

<table>
<thead>
<tr>
<th>Exposure site</th>
<th># Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abidjan</td>
<td>2</td>
</tr>
<tr>
<td>Abuja</td>
<td>2</td>
</tr>
<tr>
<td>Bamako</td>
<td>2</td>
</tr>
<tr>
<td>Bangui</td>
<td>2</td>
</tr>
<tr>
<td>Yaounde</td>
<td>2</td>
</tr>
<tr>
<td>Northern Ghana</td>
<td>1</td>
</tr>
<tr>
<td>Accra</td>
<td>1</td>
</tr>
<tr>
<td>Kampala</td>
<td>1</td>
</tr>
<tr>
<td>Northern Uganda</td>
<td>1</td>
</tr>
<tr>
<td>Conakry</td>
<td>1</td>
</tr>
<tr>
<td>Dar es Salam</td>
<td>1</td>
</tr>
<tr>
<td>Freetown</td>
<td>1</td>
</tr>
<tr>
<td>Lilongwe</td>
<td>1</td>
</tr>
<tr>
<td>Kinshasa</td>
<td>1</td>
</tr>
<tr>
<td>Luanda</td>
<td>1</td>
</tr>
<tr>
<td>Niamey</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

### Who?

| Characteristics | | Cases |
|-----------------||-------|
| **Avg age**     | 39 yo |
| **Number of children** | 0 |
| **Female**      | 8/23 35% |
| **Male**        | 15/23 65% |

### Why?

<table>
<thead>
<tr>
<th>Prophylaxis adherence 100%?</th>
<th># Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>20</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
</tr>
<tr>
<td>Yes (switched doxy dosing)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

Thanks to Leslie Edwards, MED Epidemiology, for collection and crunching of these data and Wanda Watts, parasitology, for confirmation of smears.
Prevention of Vector borne disease
Malaria, dengue, chik, Zika, JEV, TBE, etc

- Shifting the cost of what are generally occupationally associated diseases from our patients to ICASS

- ICASS has agreed that prevention of these diseases is a covered benefit

- What does this mean?
  - All antimalarials, including atovaquone-proguanil, should be provided at post WITHOUT the need for patients to use a mail-order pharmacy.
  - Post should have available CDC rec topical repellants, permethrin and impregnated bednets
Are quinolones out?!

FDA Drug Safety Communication: FDA advises restricting fluoroquinolone antibiotic use for certain uncomplicated infections; warns about disabling side effects that can occur together.

The FDA has issued new information about this safety issue, see the FDA Drug Safety Communication issued July 26, 2016.

- Potentially serious side effects such as tendinopathies, mental status changes and neuropathies, outweigh the benefits for acute bronchitis and uncomplicated UTIs when other options are available.

- This specifically does NOT say diarrheal disease, pyelonephritis or pneumonia

- Bottom line:
  - stop using quinolones for colds and mild UTIs!
Daily Demographics and Disease Surveillance
and
MED’s Human Subjects Protection Committee

Leslie Edwards, Epidemiologist
Gregory Martin, Trop Med – Inf Diseases
CME and CNE, Feb-March 2017
Topics

- Review of the program
- How to generate a report
- Common questions and answers
Health Unit Daily Demographic and Disease Report

ISO 6661.1 and 6661.2

- Daily reporting provides detail to see disease trends:
  - Help identify outbreaks of respiratory and diarrheal dz
  - Track reportable infectious dz
  - Documents work load in clinic and via phone/email
- Transition from Sharepoint data entry to Service Now will occur over the next few months
- Goal is to make this change as invisible to user as possible
- Ability to “crunch” data and make reports will be vastly improved
Why Do We Need To Collect This Information?

- President Obama’s 2012 directive to “obtain timely and accurate insight on current and emerging risks”

- President Trump has not changed this directive

Why Do We Need To Collect This Information?

- Evidence based decision making to:
  - Guide disease prevention efforts
  - Identify outbreaks
  - Show who utilizes Health Unit services (children, adult EFMs, DOD, USAID, etc)
  - Support health unit staffing needs
Where To Enter The Data

[Image of a website interface]

- Health Unit Daily Demographics Disease Submission Reports
- Sorted by Posts
- Sorted by Survey Questions
- HU Daily Demographics Disease Report

**NOTE:** Please fill-out the form and click 'SAVE' within 15 minutes to ensure your data is submitted.
Check a diagnosis for every patient (many encounters may be for a well visit (#86) or diagnosis other than those above (#87)).

Data entry staff should make sure to click on SUBMIT when finished entering the data.
I Want To Make My Own Report

1. Click on “Sorted by Posts”
I Want To Make My Own Report

2. Do you want to look at December 2016’s data? Select 12/1/2016 for “Enter Start Date” and 12/31/2016 in for “Enter End Date”
I Want To Make My Own Report

3. Click on “Export To Excel”, file with data for every health unit will appear
I Want To Make My Own Report

4. Post names are in column A and all the questions on the form are in subsequent columns
I Want to Make My Own Report

- To look at data each month separately
  - Repeat those steps for each month (June, July, etc)
- To look at all the data collected in 2016
  - Start date= June 1 2016 and End Date=December 31 2016
I Can’t Enter Data or Washington Can’t See My Data

Email Washington IT staff for help with your question

<table>
<thead>
<tr>
<th>Year</th>
<th># Malaria Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>29</td>
</tr>
<tr>
<td>2009</td>
<td>29</td>
</tr>
<tr>
<td>2010</td>
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</tr>
<tr>
<td>2011</td>
<td>26</td>
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<tr>
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<td>28</td>
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<td>2013</td>
<td>49</td>
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<tr>
<td>2014</td>
<td>27</td>
</tr>
<tr>
<td>2015</td>
<td>18</td>
</tr>
<tr>
<td>2016</td>
<td>23</td>
</tr>
</tbody>
</table>
Question:
How Do I Decide Which Encounters to Count?
If it warrants a chart entry it warrants counting

Answer:

- if the interaction (visit, email, or phone call) is substantial enough so a note is written in the patient’s chart, count the visit

- If it is a visit, call or email, even if it is long and complex, but that you do not place into the patient’s record it should NOT be counted

- Some HUs have reported numbers that do not seem reasonable for the size of the mission
  - Will ask RMMs to audit sites with data that is inconsistent with size of the mission
Question:
We Count Our Visits in the Health Unit and the Numbers in the Monthly Report Are Different? Usually a data entry problem

Answer: Could be 1 of these 3 situations

• HU enters the data some time after the actual date seen and after the data for the monthly report has been pulled by Leslie for analysis
• Data the post thinks they are entering is not submitted because post accidentally forgets to click “Submit”
• Human error when Leslie analyzes the data
• Technical problem with data storage or data maintenance that IT would have to handle
MED’s Human Subjects Protection Committee (HSPC)

It’s NOT an IRB!

- Group established to:
  - Ensure the safety and privacy of participants in surveys and research
  - Provide awareness and visibility to the MED Director of surveys and research performed in our HUs
  - Determine if a survey or research is appropriate for a HU setting
  - Determine if further review from an IRB (Institutional Review Board) is needed to assure safety, scientific integrity, feasibility and statistical significance
  - Enhance the quality of survey and research efforts
    - Assist investigators to avoid “recreating the wheel” with projects similar to those performed at other sites
  - Ensure investigators have had adequate background to perform surveys and research
    - Research training established with CITI (Collaborative Institutional Training Initiative)
HSPC

Not a roadblock to projects, an enhancement!

- **Members**
  - Epidemiologist (HSPC Administrator)
  - Chief, Quality Improvement (HSPC Institutional Official)
  - Deputy Director, Bureau of Medical Services
  - Director, Clinical Services
  - Director, Foreign Service Medical Provider Program
  - Deputy Director, Mental Health
  - Chief, Tropical Medicine and Infectious Diseases
  - IT Specialist, Information Technology (HSPC Community Member)

- Meets every month if a project is submitted

- Turn around time within ~2 days of the HSPC meeting
The protocol explaining the purpose of the group and the 2 page submission form are included on the Epidemiology webpage.
Thank You For All The Hard Work You Do Collecting and Entering Data
Thanks for your attention!