Adapting Workflows for WGS

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Kentucky Public Health

Dr. Jeffrey D. Howard, Commissioner
Division of Laboratory Services

**Microbiology Branch**
- Bacteriology
- Virology

**Global Preparedness and Environmental Branch**
- Environmental Chemistry
- Environmental Microbiology
- Preparedness

**Molecular & Biomedical Engineering**
- Newborn Screening

**Business Administration Branch**
- Procurement
- Customer Service

**Administration Branch**
- Directors
- Safety / Epidemiology / Quality Assurance
Current Workflow

Bacteriology

Performs isolation, identification, serotyping, toxin typing
Current Workflow cont.

**PFGE**
- 3 certified lab scientists
- 4 day turnaround time
- All Salmonella, E.coli, Listeria
- Quality issues

**WGS**
- 2 certified lab scientists for wet lab and analysis
- 2 MiSeqs used for Pulsenet Organisms (2 others)
- 7 day turnaround time (90%)
- Automated Extractor, Micro & V2 kits
- QA/QC
# Enteric Totals

<table>
<thead>
<tr>
<th>Pathogen‡</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td></td>
<td>PFGE</td>
<td>WGS</td>
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<tr>
<td>Campylobacter</td>
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<td>Listeria</td>
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<td>5</td>
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<td>Salmonella</td>
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<td>Vibrio</td>
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</table>
Future Workflow ??

- Micro kits, V2, V3?
- Flex for Library Prep
- Continue with Automated Extractor
- Continue all Enterics
- Implement Automated Library Prep Robot
- Sequence non-PulseNet organisms

Which to keep if any? Phase out approach?

- Bacteriology tests
  - EIA toxin, PCR, Biochemicals, anti-sera, 16S, plating

Whatever Rachel says 😊
Thank you!

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https://chfs.ky.gov/agencies/dph/dls/Pages/default.aspx