

Adapting Workflows for WGS

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Kentucky Public Health
Prevent. Promote. Protect.

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

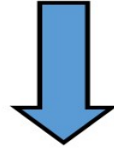
Directors

Safety / Epidemiology / Quality Assurance

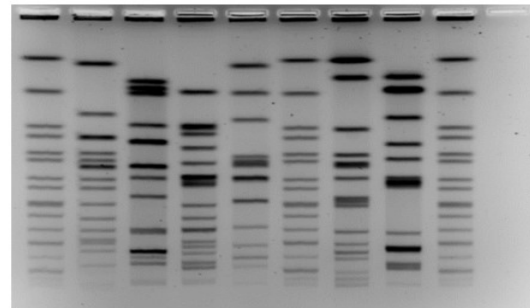
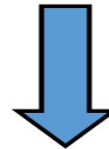
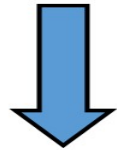


Current Workflow

Bacteriology



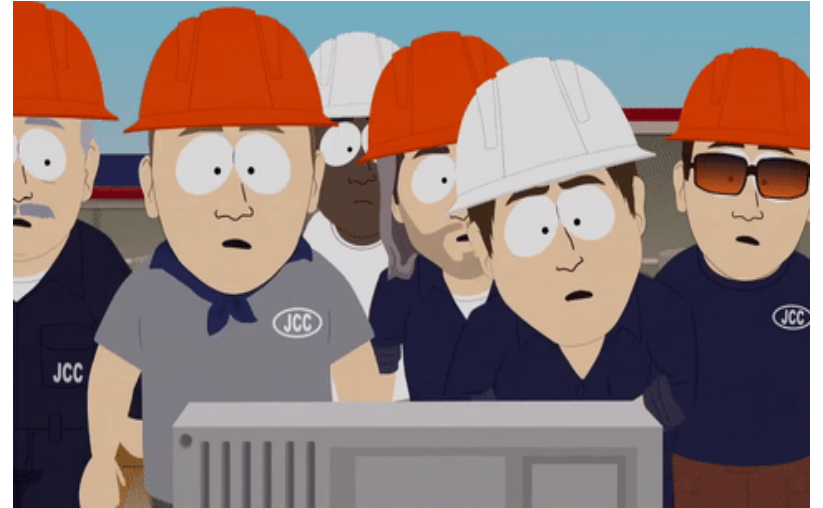
Performs isolation, identification,
serotyping, toxin typing



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

Pathogen‡	2017		2018	
	PFGE	WGS	PFGE	WGS
Campylobacter	170	11	97	83
Listeria	7	5	1	2
Salmonella	603	393	633	633
STEC	58	39	71	71
Shigella	261	19	50	50
Vibrio	0	0	1	4

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>



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