

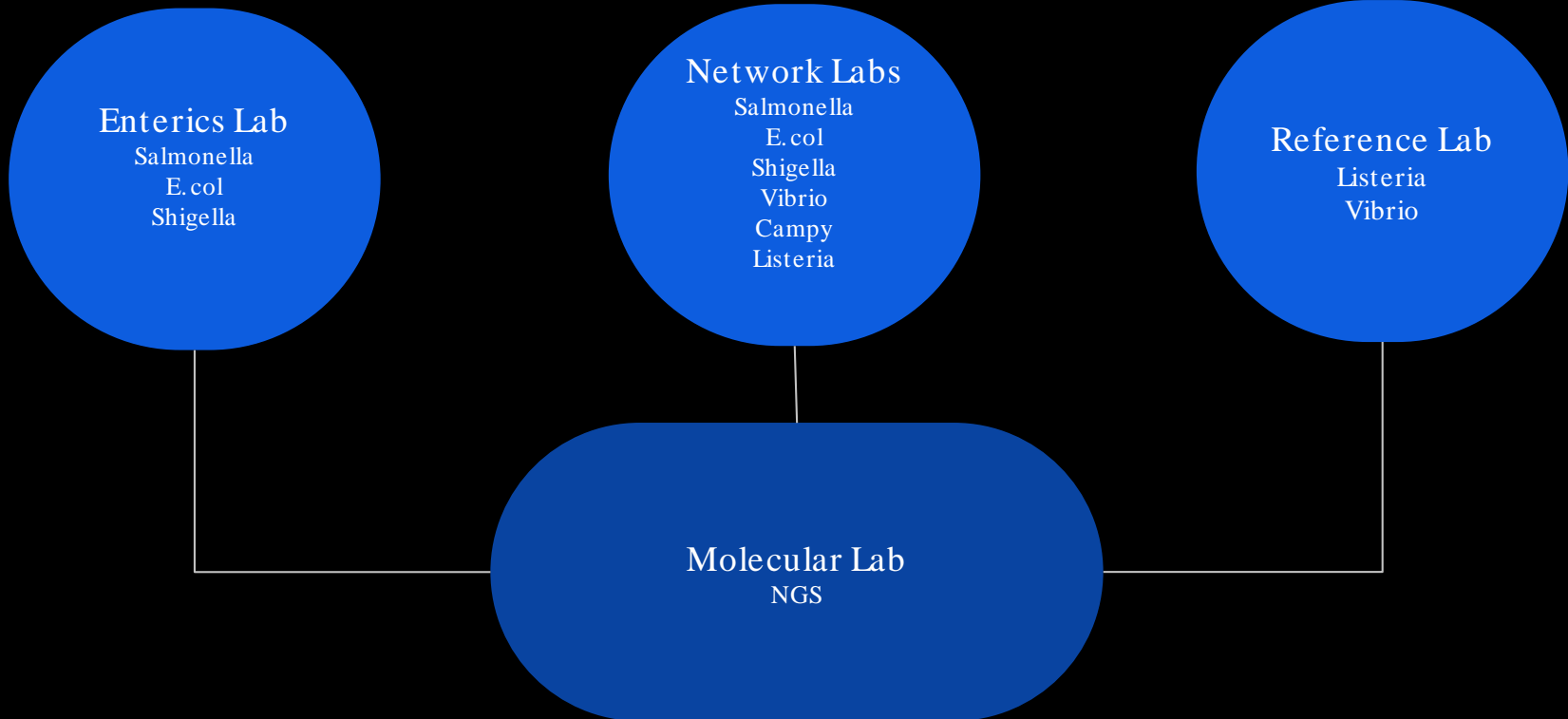
WA-PHL New Workflows

Submission to Results and the NGS Inbetween



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Clinical Isolates



Volumes

Clinical Estimates

Salmonella - 800

STEC- 280

Listeria - 20

Shigella - 200

Campylobacter - <5

Vibrio parahaemolyticus - 50

Environmental Estimates

Salmonella - 11

E. coli - 7

Listeria - 18

Shigella - 0

Campylobacter - 101

Vibrio- 260

NGS Priorities

Clinical Estimates

Listeria - 20 100%

Salmonella - 800 100%

STEC- 280 100%

Shigella - 200

Campylobacter - <5

Vibrio parahaemolyticus - 50

Environmental 100%

Salmonella - 11

E. coli - 7

Listeria - 18

Shigella - 0

Campylobacter - 101

Vibrio- 260

NARMS Estimates 100%

Salmonella - 40

Campylobacter - 30

Enteric Lab- Workflow Salmonella

Day1 - Receive Isolate - streak to MacConkey

Day 2– Streak to blood, SMS (Mon & Wed)

Day 3- SMS Results (Tues & Thurs), PFGE & NGS Extraction

Day 4-NGS started

Day 4 - 7- PFGE Results

Day 6-7 - NGS Results

TAT =7 Days

Enteric Lab- Workflow E. coli

Day 1 -Receive broth – streak to selective agar and Shiga toxin EIA

Day 2 – Isolate colonies to TSI, urea, GN broth

Day 3- Toxin test and biochemical confirmation

Day 4- Serotyping (Big 6 and O157), Isolate to PFGE, Streak to blood

Day 5 - PFGE & NGS Extraction

Day 6-9- PFGE Results

Day 6-8 - NGS Results

TAT = 7 Days

Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	TAT
SI arrives			Extract	Sequence	Results						5 days
	SI arrives		Extract	Sequence	Results						4 days
		SI arrives		Extrac	Sequence		Results				5 days
			SI arrives			Extract	Sequence		Results		6 days
				SI Arrives				Extract	Sequence	Results	6 days

Enteric Lab- Workflow Salmonella

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Day 4-NGS started

~~Day 4 - 7 PFGE Results~~

Day 6-7 - NGS Results

Enteric Lab- Workflow E. coli

Day 1-Receive broth – streak to selective agar and Shiga toxin EIA

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Day 5 - PFGE & NGS Extraction

~~Day 6-9 - PFGE Results~~

Day 6-9 - NGS Results

Epi Priorities

Everything associated with a cluster..... What's a cluster?

- ✓ Reports from LHJ about reportable conditions. Identify red flags for things coming in from same county or within same time frame.
- ✓ Notify lab to expect the increase.
- ✓ Lab notices an increase in county submissions and notifies EpiS.
- ✓ Salmonella serotyping results available 2-7 days after received
- PFGE watching for clusters and notifying EPIs
- ✓ NGS identifying clusters

Analysis & Reporting

Molecular Serotyping
To Be Continued...

Identifying Cluster
BioNumerics
NCBI

Communication
EPI
Lab
Bioinformatician

Future Plans

Complete Cluster detection validation for NGS

SeqSero/ ANI validation for Salmonella

MALDI validation

Combining workflows with ARLN

LIMs

In Reality....

- BN 7.6
- CIDTs
- Other laboratory challenges?

Thank you!

WA-PHLEPI
WA-PHLIT
PulseNet IT



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