Thoughts From SD

Chris Carlson
Meeting with epidemiologists to discuss food borne disease surveillance in world of WGS

Plan going forward...

• Laboratory plans to stop traditional Salmonella serotyping by April 1
• Stop reporting serotype name to providers at that time
• Will continue to provide O group to epidemiologists
• Will keep ability to serotype Typhi
• Validate serotyping with Seqsero in future?
• Leave E. coli, Shigella and Campylobacter the same
What information would epi team like for routine surveillance?

- O group, serotype name, and zip code as soon as possible
  - Did not want any of the virulence or resistance in real time
- Possible weekly dendrogram and heat map
- Lab do searches for possible matches and report potential clusters via email(keep PFGE process)
How to meet 7 day turn around time with low volume
How to make affordable with 7 day TAT

• SDPHL is a fee for service laboratory
• New test considerations
  • What is per test cost?
    • Applied formula WGS = ~$300 per test
  • Where to apply this charge?
    • Submitting lab - no
    • DOH program - yes
    • Federal grant – yes
  • Can make it affordable and not lose money?
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Potential Options

• Run cartridges not full
• Go freezer diving to fill runs
  • Nobody thought this would be real valuable at local level from current surveillance perspective
• Run other organisms
  • Remember low volume lab so don’t have lots of other things either
• Do a DNA share with other low volume labs to try and fill runs
  • Logistics may cause problems
Future Challenges, Ideas and Ponderings

• No backup MiSeq or budget for one
  • Possibly look at smaller Illumina instrument
  • MiSeq breaks down
    • plan to send DNA somewhere
• Cost and funding will continue to be an issue
  • This technology just does not lend itself very well for low volumes
  • Combination of DOH program funds, ELC and possibly PHEP
Future Challenges, Ideas and Ponderings

• Sequencing seems to be slower method
  • What will impacts be to outbreaks?
• Nextera Flex kit looks like would allow more flexibility in using the smaller reagent kits
  • Could make meeting 7 day TAT bit easier
  • Doesn’t necessarily solve the cost per isolate issue
PulseNet Oath?

On my honor I will do my best to do my duty to PulseNet and my country and to obey the WGS Protocol: To sequence on time: To keep myself properly trained and mentally all there so I can pipet straight.
Thank You