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# **Epidemiology and Laboratory Capacity Conference 2018**

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**Welcome**

**Linda Gaul, State Epidemiologist**

# The Whole New World of 21<sup>st</sup> Century Epidemiologic Investigations



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- More sophisticated epidemiologic tools
- Advances in laboratory subtyping of pathogens
- More detailed tracing of products back to their sources



# The Key to Success is Close Collaboration Between Entities

1. Epidemiologists
2. Laboratorians
3. Sanitarians/Environmental Health Specialists/Regulatory Partners



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# Work in Foodborne Diseases Has Led The Way

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Molecular subtyping with a history of different strains of bacteria shows how commonly a particular strain has been detected

Detection of a rare strain of bacteria in clinical specimens and in a food product demonstrates with little doubt the source of an outbreak

Regulatory partners can then recall a product, close down a manufacturing plant, or take other action and educate on proper practices for safe production of food



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# We Now See Regular Success in These Investigations

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Growers, manufacturers, shippers, and other areas of commerce are recognizing they are more accountable for their actions

These entities are changing their practices in response

They don't want to make people sick and they don't want to have lawsuits against them

Our food, drugs, and other products are safer as a result and the population we serves is healthier



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# Some Examples

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# Stewart Parnell goes to Prison for Peanut Adulteration, 2009



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# Listeriosis Outbreak, 2010: It was the Diced Celery

PFGE-Ascl pattern	PFGE-Apal pattern	Isolate Date(s)	Submitter	Source	Source
GX6A16.0096	GX6A12.0174	1/11/2010-6/2/10	Hospital	Hospitals A,D,E	7 clinical isolates, cases 1,3,4,5,7,8,9
GX6A16.0096	GX6A12.0174	10/11/2010	DSHS	Produce facility	6 diced celery finished product
GX6A16.0096	GX6A12.0174	10/14/2010	FDA	Produce facility	3 environmental swabs
GX6A16.1270	GX6A12.0174	1/21/2010	Hospital	Hospital B	Clinical isolate, case 2
GX6A16.1299	GX6A12.1573	4/21/2010	Hospital	Hospital A	Clinical isolate, case 6
GX6A16.1299	GX6A12.1573	10/5/2010	DSHS	Hospital A	Chicken salad
GX6A16.1299	GX6A12.1573	10/14/2010-10/15/10	FDA	Produce facility	10 environmental swabs
GX6A16.1299	GX6A12.1573	12/13/2010	DSHS	Produce facility	3 environmental swabs
GX6A16.0074	GX6A12.0174	8/14/2010	Hospital	Hospital A	Clinical isolate, case 10
GX6A16.0074	GX6A12.0174	9/21/2010	DSHS	Hospital A	Chicken salad
GX6A16.0074	GX6A12.0174	10/11/2010	DSHS	Produce facility	Diced celery
GX6A16.0074	GX6A12.0174	10/14/2010	FDA	Produce facility	3 environmental swabs
GX6A16.0074	GX6A12.1573	10/5/2010	DSHS	Produce facility	Diced celery
GX6A16.0074	GX6A12.1573	10/14/2010	FDA	Produce facility	Environmental swab



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# Fungal Meningitis Outbreak Linked to Injected Steroid Product from Compounding Pharmacy, 2012



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10/5/2018

Source: MN DOH

# Other Outcomes of These Successes

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We “shine”

We provide regular examples of the value of public health

Other areas of epidemiologic investigation are informed, adopt similar methods, and have similar successes



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# Challenges Remain

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We all do more with the same or fewer resources

The costs of new technologies and other advancements limit our efforts

There are still plenty of risky practices and products for us to investigate



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# Some Results from the 2017 CSTE Epidemiology Capacity Assessment

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Capacity survey of state health  
department staff only

But local health department staff  
likely have similar challenges

Epidemiologists were considered to be:  
People in epidemiology positions  
People in other classifications  
who were doing epidemiologic  
work



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# Epidemiology Staffing and Funding Sources

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About half of staff are supported by CDC funds, other half are supported by state funds



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# Additional Epidemiologists Needed to Reach Full Capacity

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With 109 epidemiologists, we still need 81 additional epidemiologists to reach full capacity



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# Epidemiology Vacancies

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Just 8 positions were officially unfilled, as the question stipulated we expected to fill vacant positions within 30 days

However, the survey was administered during a hiring freeze, and there were many other vacant positions we couldn't expect to fill in that timeframe



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# Capacity to Provide the Four Essential Public Health Services

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For most specialty areas, we were at 50-75% capacity for providing the essential public health services



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# Salaries

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Salaries are relatively low at the state health department

We have limitations on providing raises

We have limitations on hiring at competitive salaries



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# Recruitment and Retention

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Some significant challenges exist to recruiting and retaining epidemiologists

Also note that the most pressing training needs identified were for:

Data analytics training

Software skills



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# Thank you

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