

Norovirus Outbreak at Several Restaurant Locations Supplied by a Central Commissary: Detection through Molecular Subtyping

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Background

October 2011

- Callers to the Minnesota Department of Health (MDH) foodborne illness hotline were asked to submit stools for norovirus testing

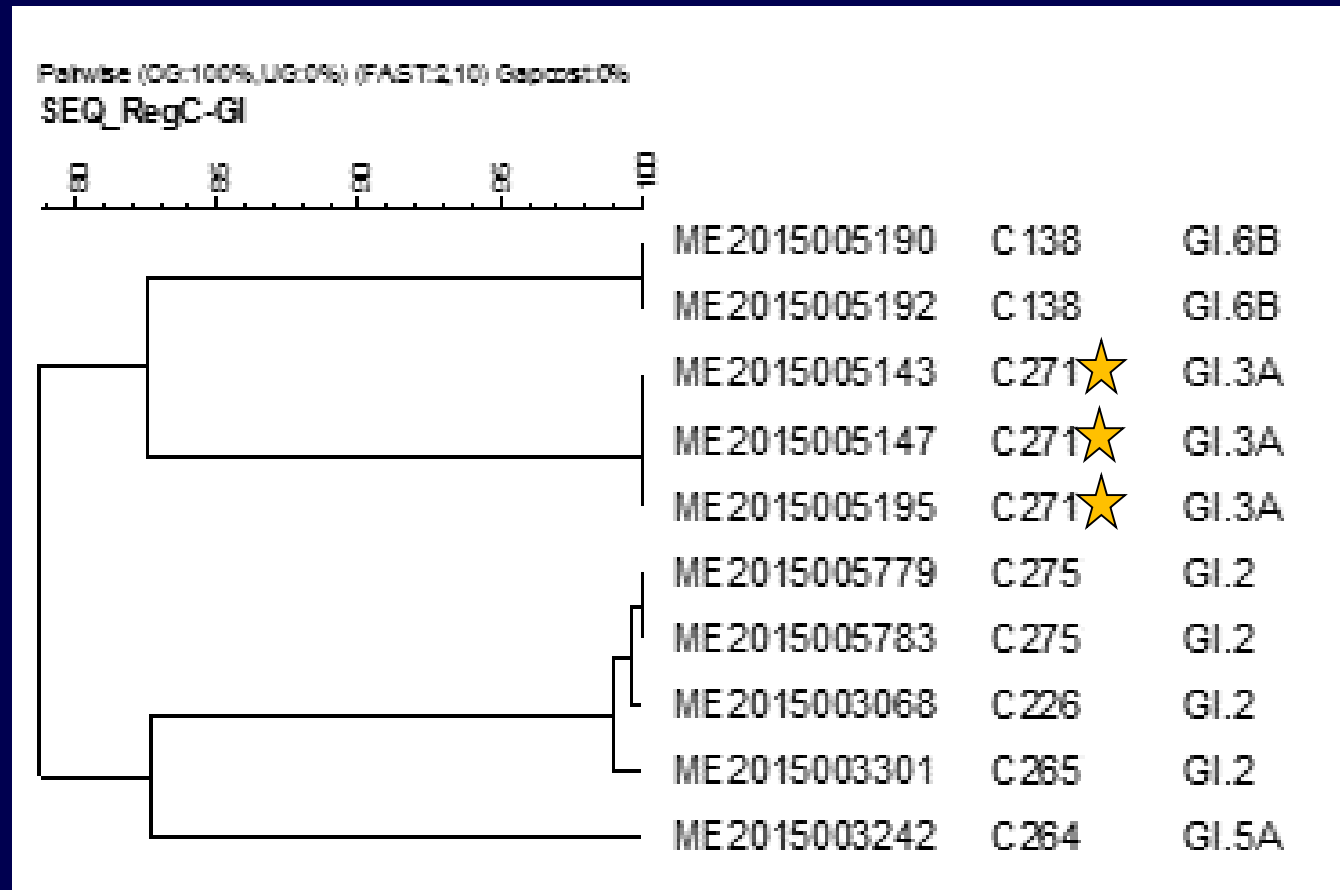
August 2012

- MDH Public Health Laboratory (PHL) began real-time testing and sequencing for norovirus as part of NoroSTAT

Outbreak Detection

April 22, 2015

- 3 GI.3A stools with identical Region C sequences
- Specimens submitted by hotline callers with sporadic illness
- Genotype never seen before in Minnesota



**Minnesota Department of Health
 Infectious Disease Epidemiology Prevention and Control
 Acute Disease Investigation & Control
 Complaint Report**

<u>Daily</u>	<u>Restaurant</u>	<u>Address</u>	<u>City</u>	<u>Meal Date:</u>	<u>Last 12 months Count</u>
H	Dairy Queen		Rogers	01/06/2015	1
H	Dairy Queen		Spring Valley	01/01/2015	1
H	Dairy Queen	Excelsior	St Louis Park	02/22/2015	1
H	D'Amico and Sons		Golden Valley	04/14/2015	1
H	D'Amico and Sons		Minneapolis	04/10/2015	1
H	D'Amico and Sons		Roseville	04/11/2015	1
H	D'Amico and Sons		Wayzata	04/10/2015	1
H	Davanni's		Plymouth	02/20/2015	1
D	Davanni's		Rogers	03/15/2015	1
H	DeGideo's	West 7th St	St Paul	03/21/2015	2
H	Denny's	Rogers Drive	Rogers	01/06/2015	1
H	Digby's		Roseville	03/20/2015	2
H	Digby's	Tommy's Canyon Drive	Fargo	02/02/2015	1



Methods

- **Environmental health assessments and food worker interviews at four Chain A locations and central commissary kitchen**
- **Chain A corporate provided information on foods prepared at the commissary kitchen**
 - **Corporate contacted additional stores; instructed to clean/sanitize and monitor employee illness**



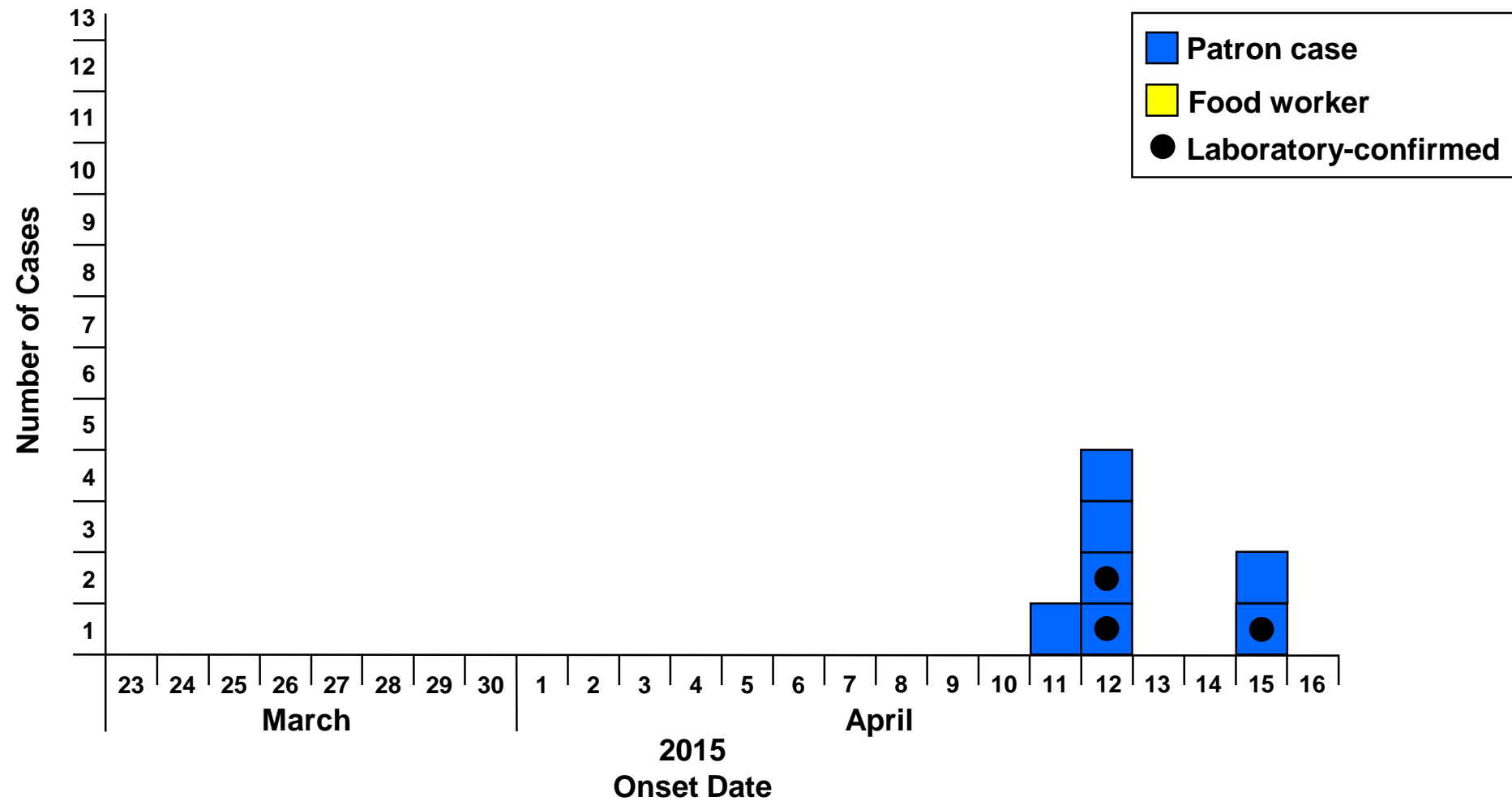
Methods (cont.)

- **Credit card receipts used to contact patrons for interview**
- **Case definition: vomiting and/or diarrhea (≥ 3 stools in 24 hours) after eating food from Chain A**

Results

- **50 Chain A patrons interviewed**
 - **7 (14%) cases**
 - **6 from complaints**
 - **1 from credit card interviews**
- **Median incubation: 37 hours (range, 24 to 42 hours)**
- **Median duration: 17 hours (range, 7 to 31 hours)**
- **No single food item significantly associated with illness**
 - **6 of 7 cases consumed a deli salad**

Norovirus Gastroenteritis Associated with Chain A by Illness Onset Date



Food Worker Illness

- 12 ill food workers
 - Onsets Mar 25 - Apr 14
- At central commissary kitchen, a prep cook worked while ill with vomiting on April 5

Employee Illness Log or use form from FOH

Location: CPTC 2015

Date Missed Work	Employee Name	Symptoms/ Illness	Diarrhea or Vomiting?	Was Dr. Seen?	Date Return to Work	Supervisor Initials
11-9		Vomiting	Y	N	11-11	WJ
12-22		Sinus infection	N	Y	12-23	WJ
1-5-15		Coughing/sinus	N	Y	1-8	WJ
1-21		Sore throat	N	Y	1-25	WJ
2-19	L	Diarrhea	Y	N	2-21	LL
4-6	A	Vomiting	Y	N	4-16	WJ
4-10		Vomiting	Y	N	4-11	WJ
4-12	R	Vomiting	Y	N	4-14	WJ

Food Worker Illness

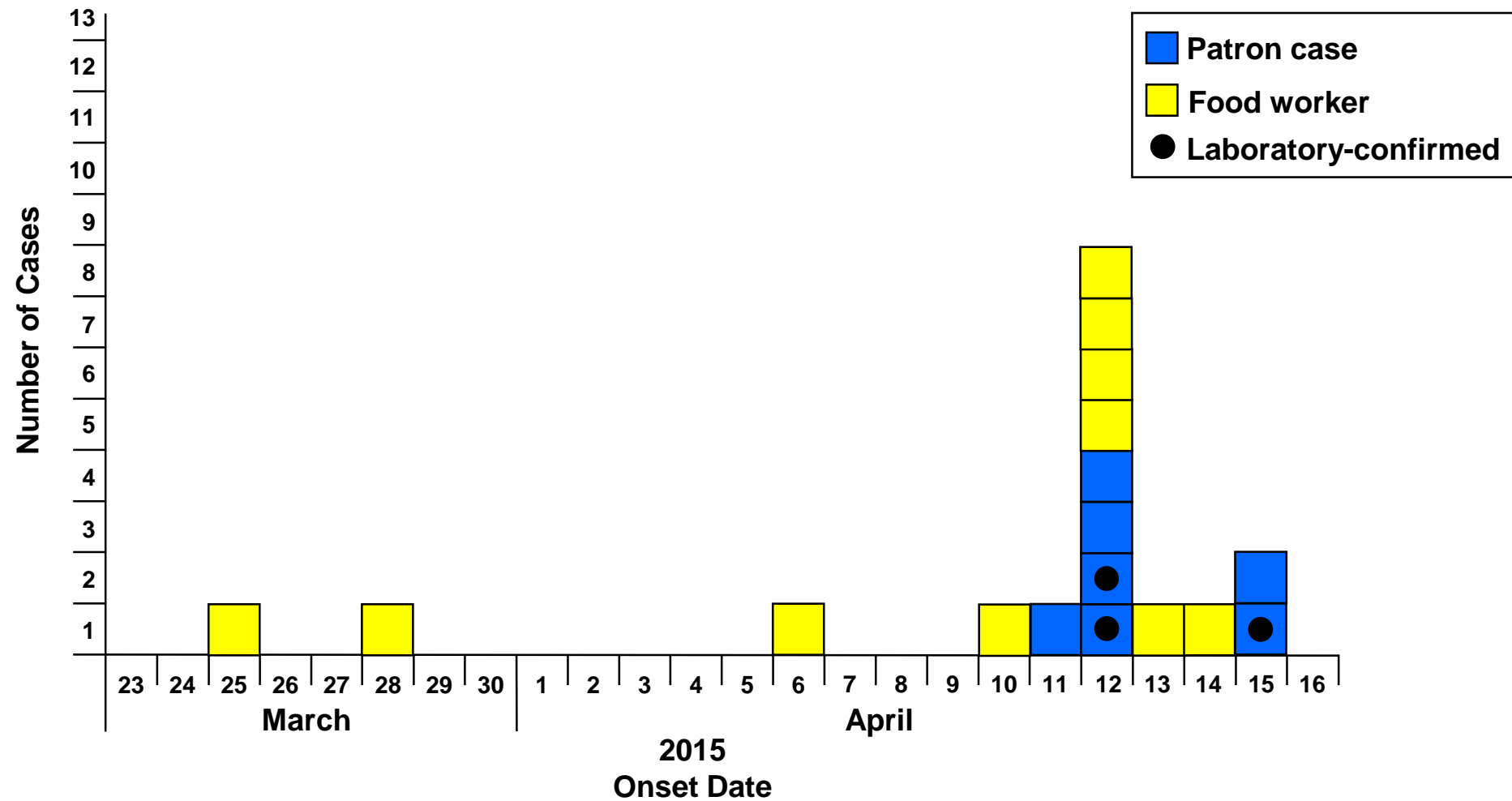
- 11 ill food workers
 - Onsets Mar 25 - Apr 14
- At central commissary kitchen, a prep cook worked while ill with vomiting on April 5
 - Two other prep cooks had onset of vomiting on April 10 and April 12

Employee Illness Log or use form from FOH

Location: CPTCUM 2015

Date Missed Work	Employee Name	Symptoms/ Illness	Diarrhea or Vomiting?	Was Dr. Seen?	Date Return to Work	Supervisor Initials
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4-12	R	Vomiting	Y	N	4-14	WJ

Norovirus Gastroenteritis Associated with Chain A by Illness Onset Date





Conclusions

- **Outbreak at multiple retail delis served by a central commissary kitchen**
 - **Ill workers at central kitchen and retail locations likely sources of outbreak**
- **Centralized public hotline essential for identifying outbreaks across multiple local jurisdictions of a single chain**
 - **Need for awareness of upstream connections between reported retail locations**



Conclusions (cont.)

- **Highlights the power of real-time norovirus molecular subtyping**
- **Outbreak detected through routine screening not intended for outbreak detection**
- **Strong Lab-Epi relationship important**



Acknowledgements

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Thank you!

Questions?

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Minnesota
Department of Health

