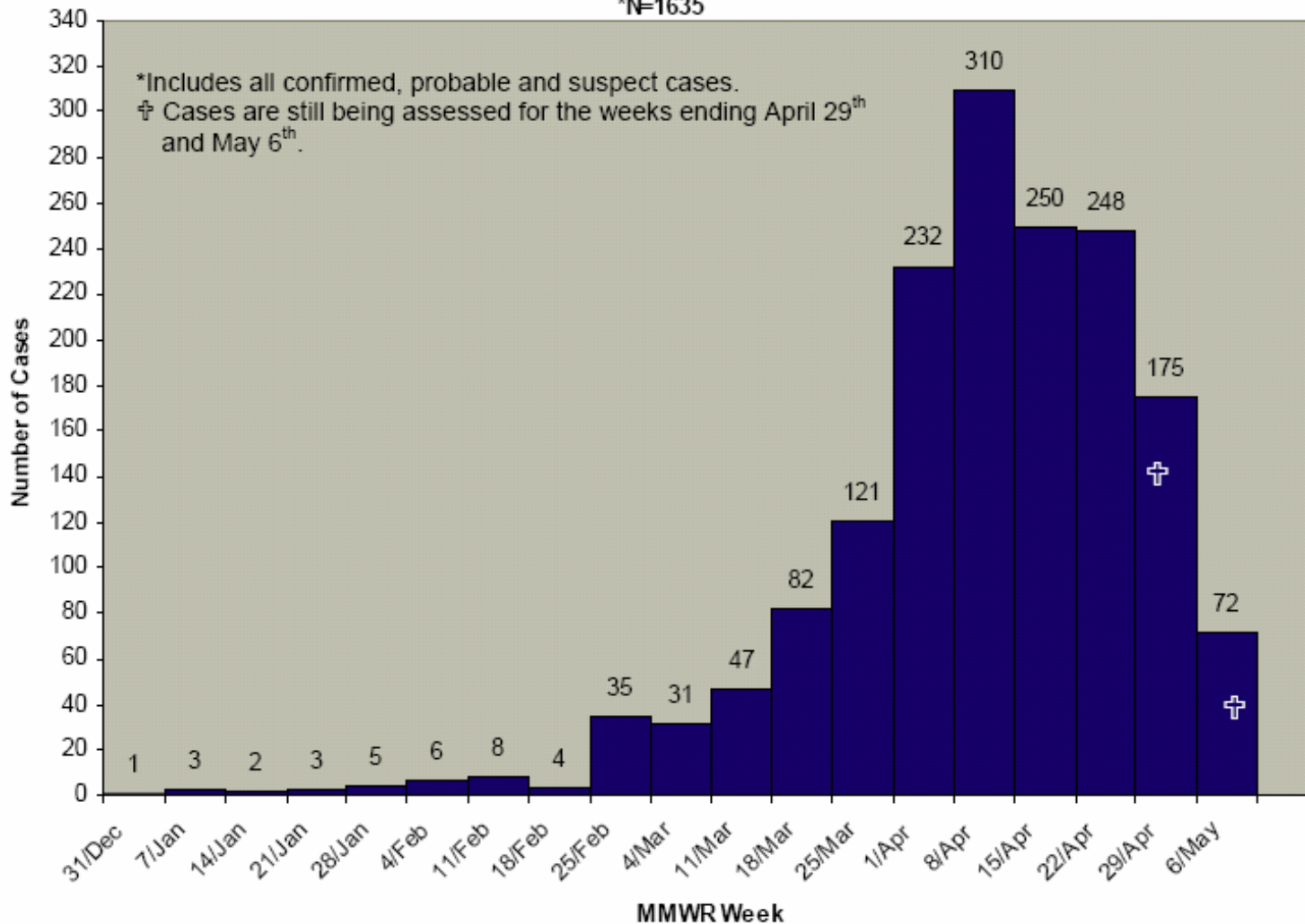




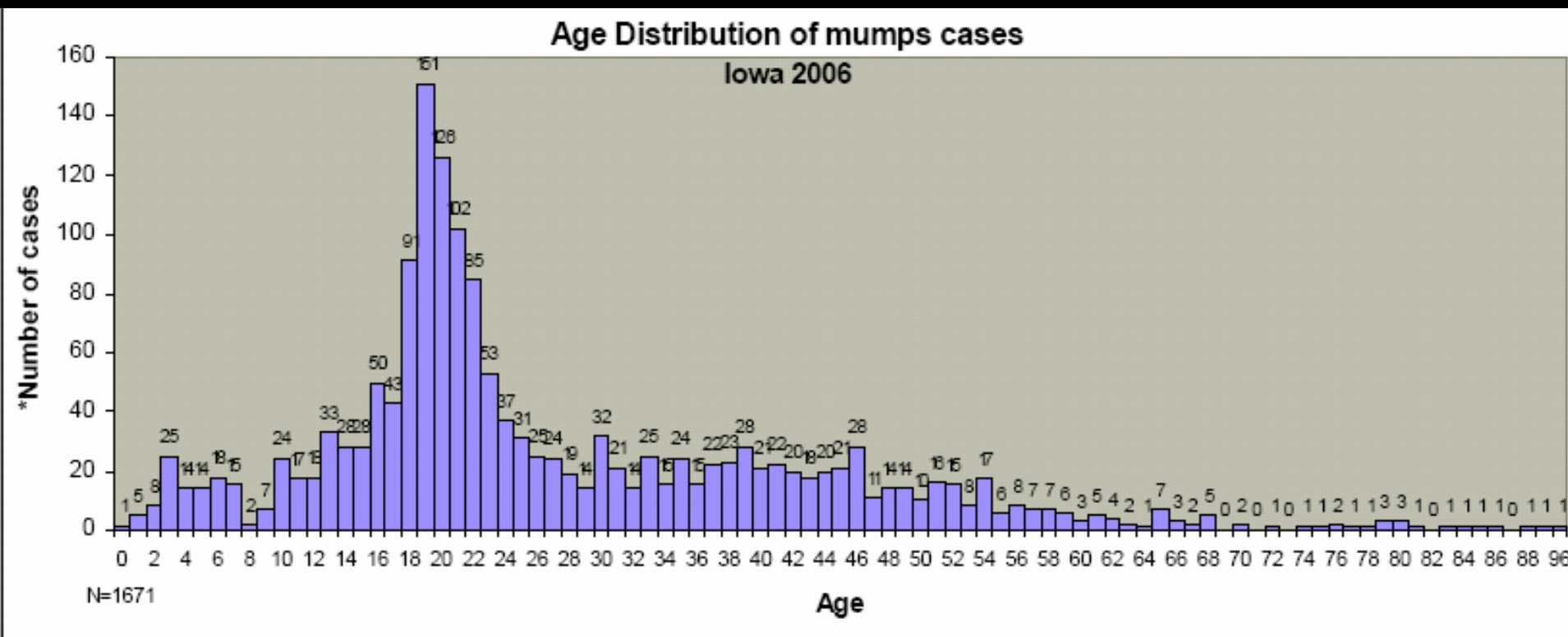
# Mumps is back!

Number\* of cases of mumps, by date of onset- Iowa, through  
May 10, 2006

\*N=1635



# Mumps in Iowa: Age distribution



# Mumps in Iowa

- 1674 cases as of 5/10/06
- 51% received 2 doses of MMR!
- Median age: 22 years
- Virus is genotype G
- 2004-2005 UK epidemic
  - >60,000 cases!
- *Efficacy of vaccination is only ~85% during epidemics*
  - MMWR 2006;55:173-77

Case summary	
Number of confirmed	1184
Probable cases	253
Number of suspect cases	237
<b>Total</b>	<b>1674</b>
Number of completed follow-up reports that are cases	1335
Median age at onset	22
% Students currently attending college	20% (333/1674†)
0 MMR	6% (77/1335)
1 MMR	12% (160/1335)
2 MMR	51% (677/1335)
Unknown	31% (421/1335)
% with any history of MMR	63%
Average duration of symptoms	5 days
Epi-linked	195/1674*
Symptom distribution	% Affected
Parotitis	65% (867/1335)
Fever	32% (430/1335)
Sub/max swelling	43% (579/1335)
Sore throat	51% (679/1335)
Headache	28% (379/1335)
Cough	10% (128/1335)
Orchitis	8% (32/386‡)
Encephalitis	0.2 % (3/1335)
Laboratory results	
IgM+	73% (1212/1674)
Mumps Virus Isolated	11% (172/1674)
Pending (Serology Only)	3% (56/1674)
Not Done/Unknown (Serology Only)	24% (404/1674)

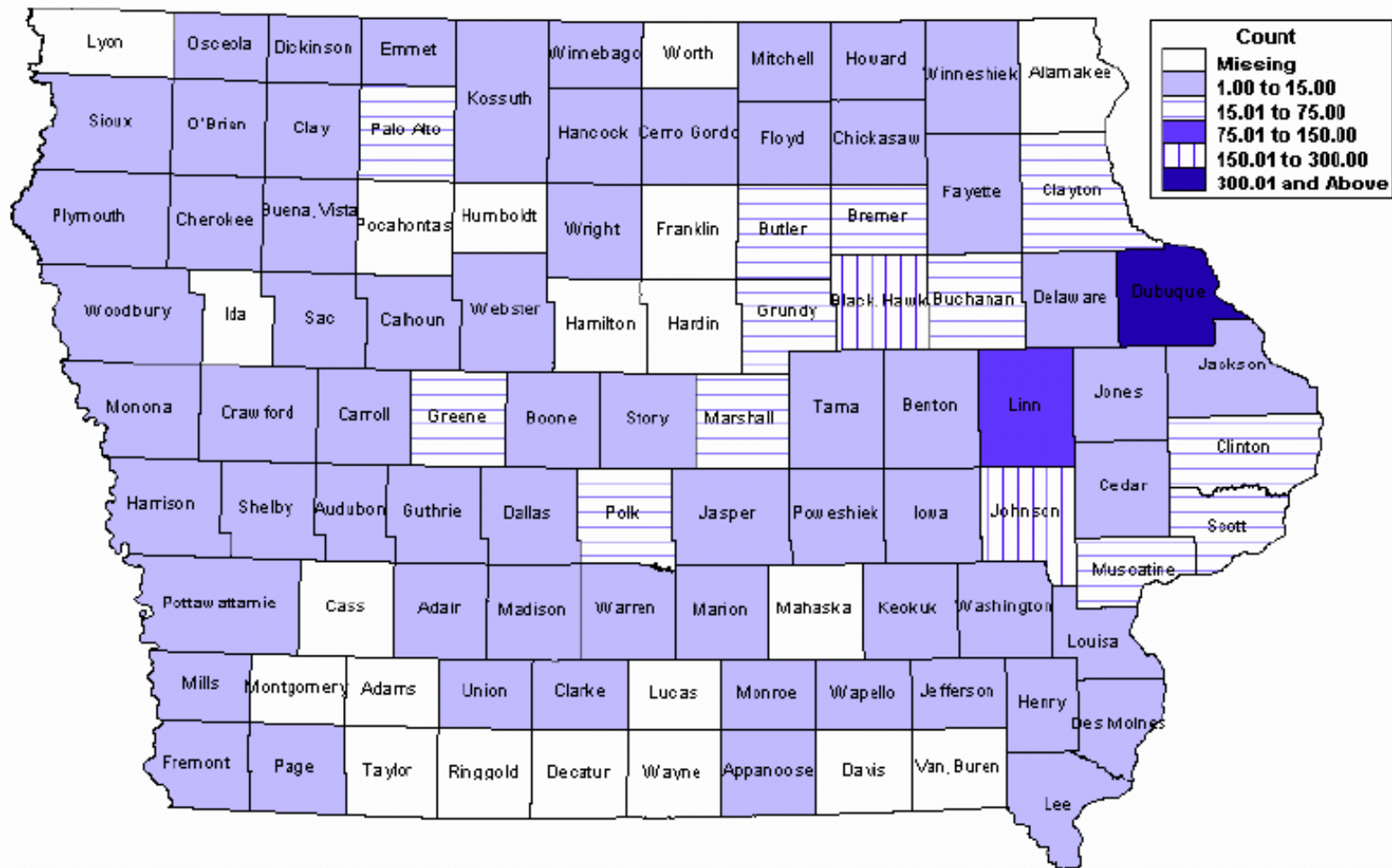
\*Epi-linked status is not available for all initial reports.

† College status is not available for all initial reports.

‡ Of male cases with completed follow-up

# Mumps case distribution

## May 10, 2006



Epidemic now involves surrounding states as well

# Mumps: IDPH recommendations

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- Isolation for all case patients for 5 days from symptom onset, or until well
- Ensure all students on Iowa campuses have at least 2 doses of MMR
- Assess vaccination status of all healthcare workers in Iowa, offer vaccine where appropriate
- Send all specimens from suspect cases to UHL for testing

# Mumps clinical case definition

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- “An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting  $\geq 2$  days, and without other apparent cause.”

# Laboratory Diagnosis: Serology

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- IgG persist for long periods after clinical illness and immunization
- IgM appear within 3-4 days of onset of symptoms, decline to undetectable by 2-3 months after illness
- IgG useful to identify those immune
- IgM useful to detect recent infection

# Laboratory Diagnosis: Culture/PCR

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- Viral culture
  - Buccal swab
    - 6d before to 9d after salivary gland involvement (usually first 4-5 days of symptoms)
    - Massage parotid gland in front of ear for 30 seconds
    - Swab cheek in area of upper molars
    - Place in M4 viral transport media
  - Urine (up to 2 weeks after onset symptoms)
    - 2 to 5mL of mid-stream clean-catch urine
  - CSF (within 8-9 days of onset of CNS symptoms)
- PCR now available at the Univ. Hygienic Lab

# New recommendations for healthcare worker immunity

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- During epidemic:
  - 2 doses live virus vaccine (MMR), or positive serology, or age > 65 years
- All other times (new CDC recs):
  - 2 doses live virus vaccine (MMR), or positive serology, or birth prior to 1957, or physician-diagnosed measles

# Exposure management

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- Confirm immunity (prior receipt of 2 doses of live vaccine, or positive IgG, or age > 65)
- If not confirmed to be immune, must restrict from patient contact from day 12 after first exposure to day 26 after last exposure (and vaccinate, if < 65 years old)

# Questions, questions.....

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- What sustains an epidemic in a population this highly vaccinated?
- Are there *really* no genotype specific differences in immune response?
- Are all the positive IgM results *true* positives?
- Is a positive IgG really evidence for immunity?
- How much better is natural infection than vaccination at generating *lifelong* immunity?

These questions are all being investigated.....