

A green chalkboard with two pieces of pink chalk and some faint white chalk drawings. The chalkboard is the background for the text.

Use of Real-Time School District Influenza-Like Illness Data During a Pandemic

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Background – 2009 H1N1 Influenza A

- June 11th 2009 the World Health Organization declared first global influenza pandemic in 41 years
- Caused by a novel H1N1 strain of Influenza A
- The first wave of the pandemic occurred during the summer of 2009
- The second wave of the pandemic occurred during the fall of 2009
 - *Genesee County observed historic levels of influenza activity during this time*
 - *Local epidemiology of 2009 H1N1 Influenza A infection similar to national*
 - *72.3% of reported 2009 H1N1 cases were observed among those under 25 years of age*





Background – Communicable Disease Reporting

- Michigan law requires schools and childcare centers to report occurrences or suspected occurrences of communicable diseases to their local health department
 - *Act No. 368 of the Public Acts of 1978*
 - *Help identify outbreaks and epidemics*
 - *Assists with disease surveillance efforts*
- Weekly reporting
- Best local resource for tracking influenza activity
 - *Flu-like illness*
 - *Absenteeism*





Background –Reporting at the GCHD

- The Genesee County Health Department (GCHD) has a web-based electronic reporting system
 - *Established Fall 2005*
 - *Significant improvements have been made to improve efficiency*
 - *Allows for real-time data analysis (weekly basis)*
- Reporting by these facilities has consistently been low across Michigan
- Genesee County reporting rate from these facilities
 - *Overall reporting level~ 50%*
 - *Higher among public schools ~75%*
 - *Lower among childcare centers - ~33%*



Background – Data Collected

Michigan School Building Weekly Report of Communicable Disease to Local Health Department

ded, the local health department shall be notified
r disease (especially rash-like illness with fever).

lines submit all occurrences on this form.

ONLINE REPORTING INSTRUCTIONS: Please record all appropriate information and submit each **MONDAY** by 11AM EVEN IF THERE ARE NO DISEASES TO REPORT. Click "submit data" at the bottom of the page to send it to the health department.

HIGHLIGHTED FIELDS ARE REQUIRED

WEEK ENDING: Friday, 08/14/2009

General School Information

DISTRICT: Choose a School District Type: Choose a School Type School: [dropdown]

CURRENT SCHOOL ENROLLMENT	[input field]
TOTAL NUMBER OF CHILDREN ABSENT THIS WEEK	[input field]

Aggregate Numbers

AGGREGATE CASE COUNT REPORTING: Please record total number of cases for flu-like illness and stomach virus.

	NUMBER OF CASES	DEFINITION
FLU-LIKE ILLNESS (APPARENT INFLUENZA)	[input field]	FLU-LIKE ILLNESS is fever and any of the following symptoms: Sore throat, cough, generalized aching in the back and limb muscles. *Sneezing and diarrhea/gloves are NOT indicators of influenza.
STOMACH VIRUS	[input field]	STOMACH VIRUS is diarrhea episode lasting for 24 to 48 hours.
STREP THROAT	[input field]	STREP THROAT is often doctor diagnosed and is characterized by a severe sore throat with fever and headache.

***NOTE:** The health department will no longer be collecting numbers of head lice cases or pink eye (conjunctivitis). Contact School Health Services at (810)257-3591 for more information regarding head lice or pink eye in schools.

INDIVIDUAL DISEASE REPORTING: Use the following lines to complete information for ALL INDIVIDUALS WITH CONFIRMED OR SUSPECTED CASES of communicable diseases below, including chickenpox.

Serious/rare illnesses: In addition to reporting on this form, call the health department at (810)257-1017 IMMEDIATELY to report: measles, mumps, rubella, pertussis, Haemophilus influenza type B, meningitis, encephalitis, hepatitis, tuberculosis, or any other serious communicable disease occurrence.

Individual diseases

DISEASE	DATE OF ONSET	FIRST NAME	LAST NAME	DATE OF BIRTH	GRADE	DISSENT FORM	STUDENT ADDRESS	PARENT/LEGAL GUARDIAN	IS NOW IN SCHOOL
Choose Disease	08/13/2009				-				Choose One
Choose Disease	08/13/2009				-				Choose One

Submitter Information

ADDITIONAL COMMENTS:

[text area for additional comments]

PLEASE CHECK:

- NO DISEASES TO REPORT THIS WEEK
- SCHOOL CLOSED DUE TO ILLNESSES

SUBMITTED BY: [input field]

PHONE NUMBER: [input field]

TODAY'S DATE: 08/13/2009

Submit Data Clear Form

Microsoft Access

File Edit View Insert Tools Window Help Adobe PDF

Type a question for help

dbo_Submissions : Table

SubmissionID	WeekEnding	SchoolID	CurSchoolEnrol	ChildrenAbsent	Num
23253	10/8/2010	1082	205	18	
23254	10/8/2010	870	407	68	
23255	10/8/2010	1058	455	39	
23256	10/8/2010	969	200	27	
23257	10/8/2010	810	297	46	
23258	10/15/2010	1366	0	0	
23259	10/8/2010	909	1233	206	

GCHD-MCDFrontEnd.restored : Database (Access 2000 file...)

Objects

- Tables
- Queries
- Forms
- Reports
- Pages
- Macros
- Modules

Groups

- Favorites

Create query in Design view

Create query by using wizard

dbo_Schools Query

dbo_Submissions Query

dbo_Submissions Query_WeekEndTotals_FM

dbo_Submissions Query1

DistrictCount

DuplicateLookupbydate

qryDiseaseReportbyDisease_AR

qryDiseaseReportingWithDiseases

qrySubmissionsWithSchools

qrySubmissionsWithSchoolsPromptWeekEnd

qryWeeklyS

School

School0910

SubmissionC

SumByDate

SumByDate

SumByDistri

SumByDatewithCount : Select Query

WeekEnding	SumOfCurScho	SumOfChildren	SumOfNumberCasesFluLike
9/5/2008	1508	101	
9/12/2008	1554	273	
9/19/2008	1575		
9/26/2008	1866		
10/3/2008	66650		
10/10/2008	70517		
10/17/2008	73742		
10/24/2008	70152		
10/31/2008	66668		
11/7/2008	78162		
11/14/2008	69559		
11/21/2008	66203		
11/28/2008	61104		
12/5/2008	70696		

SumbyDistrict : Select Query

WeekEnding	District	SumOfCurScho	SumOfChildren	SumOfNumberCasesFluLike	SumOfNumber
10/8/2010	Goodrich	2139	265	11	
10/8/2010	Grand Blanc	10382	1099	57	
10/8/2010	Kearsley	2266	356	102	
10/8/2010	Lake Fenton	1855	150	59	
10/8/2010	Lakeville	1726	405	110	
10/8/2010	Linden	2818	522	20	
10/8/2010	Montrose	1095	88	40	
10/8/2010	Mt Morris	2470	486	69	
10/8/2010	Swartz Creek	3682	453	33	
10/8/2010	Westwood Heig	980	317	6	
10/15/2010	Flint	11	2	0	
10/15/2010	Grand Blanc	n	n	n	

Record: 1 of

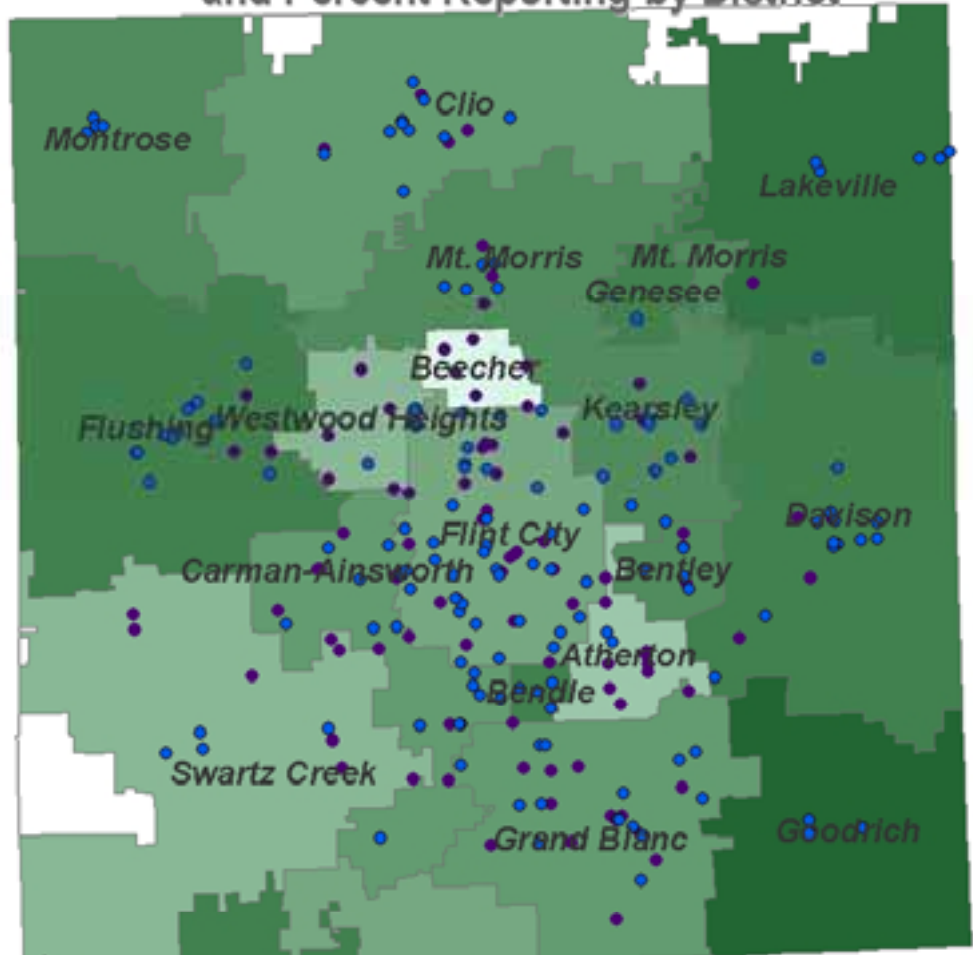
Record: 1979 of 1980

Ready

NUM



Genesee County School and Childcare Centers and Percent Reporting by District



School Districts (n=21)
 Schools and Childcare Centers (n=382)
 Facilities that Regularly Report (n=207)

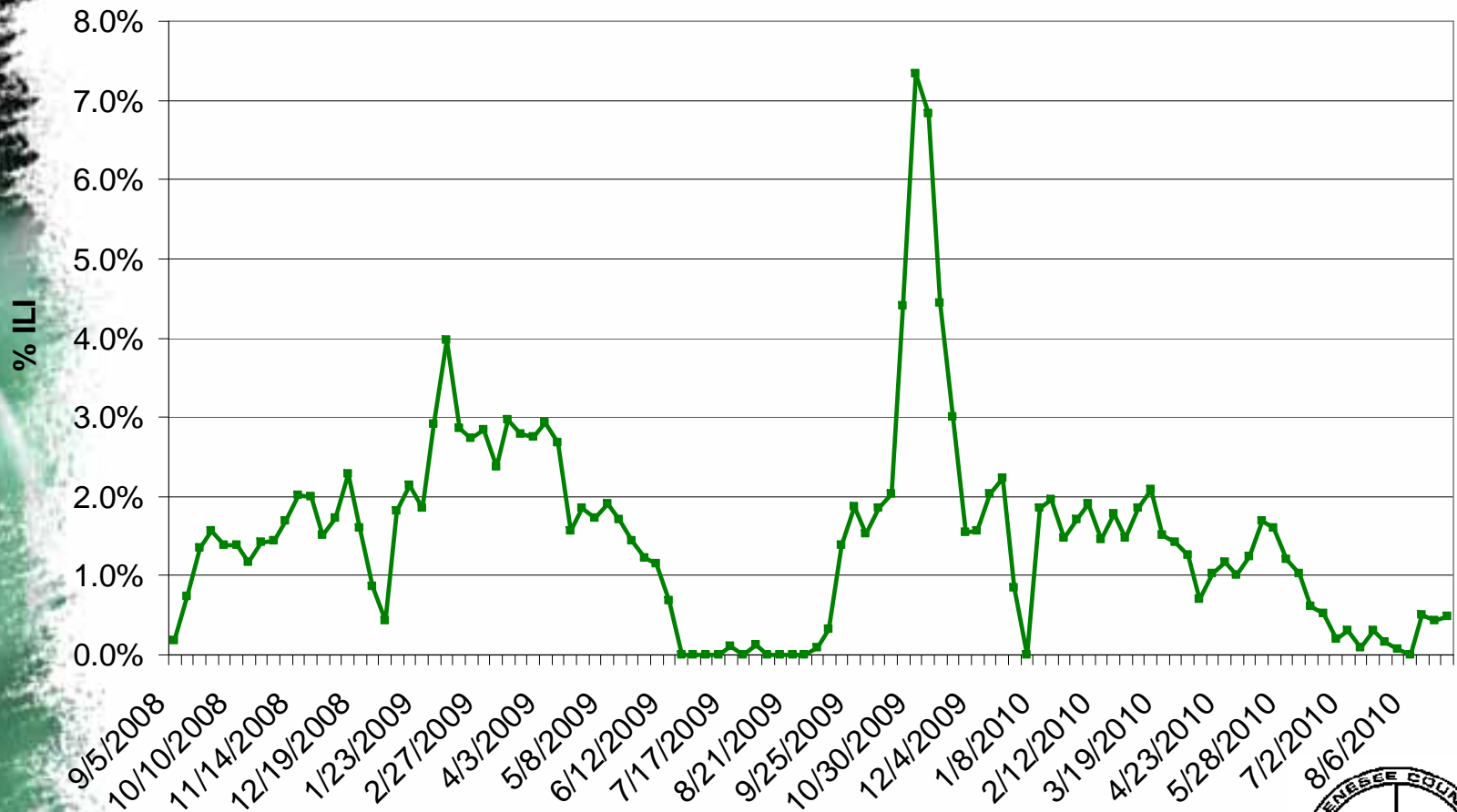
% Facilities that Regularly Report

 0%	 50.1% - 60%
 0.1% - 10%	 60.1% - 70%
 10.1% - 20%	 70.1% - 80%
 20.1% - 30%	 80.1% - 90%
 30.1% - 40%	 90.1% - 100%
 40.1% - 50%	



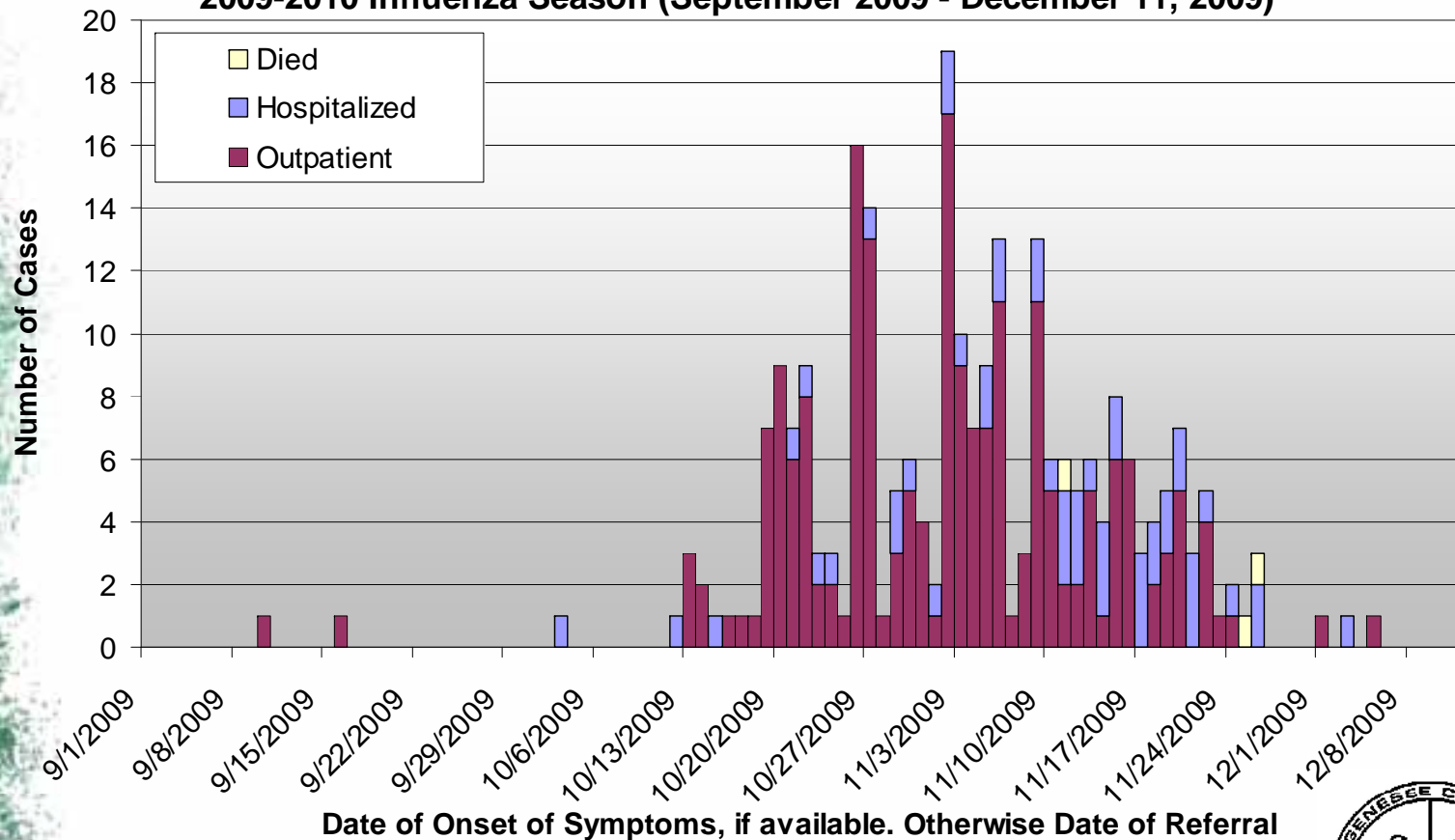
Influenza-Like Illness Reporting

Percent Influenza-Like Illness Reported by Schools & Childcare Facilities
Genesee County, Michigan
September 2008 - August 2010



Epidemiology of 2001 H1N1 Infection in Genesee County

Confirmed 2009 H1N1 Influenza A Cases as Reported to the Genesee County Health Department by Patient Status
2009-2010 Influenza Season (September 2009 - December 11, 2009)



- Note: Testing and reporting recommendations changed throughout the course of the 2nd wave





GIS & the 2009 Pandemic at the GCHD

- Create local weekly flu report
 - *Modeled after the FluView produced by the Centers for Disease Control and Prevention (CDC)*
 - *Dissemination*
 - Internal weekly meetings
 - Meetings with external partners
 - GCHD website
- Pandemic Planning and Response
 - *Guide disease control activities*
 - *Vaccination Clinics*
 - *Monitor for 3rd wave of infection*



Weekly Influenza Surveillance Report

Influenza Surveillance Report – Week Ending November 6th

Genesee County, MI
November 10, 2009

Genesee County Influenza Surveillance

- **Surveillance:** Surveillance in Genesee County indicates influenza activity for the week ending November 13th decreased from the previous two weeks to levels similar to what is observed during the peak of the seasonal influenza season. Visits to emergency departments due to respiratory and constitutional complaints continue to remain high. Respiratory complaints remained similar to what was observed the previous week while constitutional complaints continued to rise.
- **Lab-confirmed cases:** Confirmed cases of influenza among Genesee County residents continued to be reported during the week ending November 6th. Fifty-two (52) cases of confirmed H1N1 influenza were reported in the week ending November 6th bringing the total cases of confirmed H1N1 influenza cases to 100. The age range of these recent confirmed H1N1 cases is 3 to 52 years.
- **Hospitalizations/deaths:** Six hospitalizations with confirmed influenza were reported during the week ending November 6th. No deaths due to the 2009 H1N1 influenza virus have been reported in Genesee County residents to date.
- **Local Colleges and Universities:** Low levels of influenza-like illness and sporadic cases of physician diagnosed influenza have been observed in college students and staff for the week ending November 6th.
- **Genesee County Schools and Childcare Centers:** Rates of influenza-like illness among children in schools and childcare centers stabilized the week ending November 6th. Influenza like illness among schools and childcare centers continue to be at levels 4 times higher than what is normally seen at this time of year. Student absences continue to be high. Twelve school districts (34%) continue to experience increasing influenza like illness. Influenza like illness is stabilizing or slightly decreasing in the other school districts but continue to remain at much higher levels than normally observed during this time of year. One charter school closed for one day due to illnesses and absences during the week ending November 6th and has re-opened.

H1N1 Vaccine Update

- The nasal spray form of 2009 H1N1 Influenza Vaccine and multi-dose vials of injectable 2009 H1N1 vaccine continue to be allotted to Genesee County as more becomes available.
- Until the H1N1 vaccine supply is more plentiful, the Genesee County Health Department continues to prioritize vaccination of groups who are most at risk as stated by ACIP guidelines. These groups are:
 - pregnant women,
 - caregivers/contacts of children under 6 months,
 - children and young adults 6 months through 24 years,
 - adults 25 – 64 years with underlying medical conditions, and
 - EMS and health care workers
- School-based vaccine clinics for priority groups have begun in Genesee County and more are being planned. For details on school-based vaccination clinics including locations and times visit <http://www.gchd.us/HotTopics/H1N1FluClinicLocations.asp>
- The Genesee County Health Department continues to distribute vaccine to many Genesee County providers this week in order to reach our highest risk populations as soon as possible.

Antiviral Distribution

- The Genesee County Health Department is planning to distribute Tamiflu and Relenza from the Strategic National stockpile to pharmacies in Genesee County.
- Diplomat Pharmacy (63320 Beecher Rd Flint, MI 48532, ph: (810) 732-8720) has received a supply of antivirals to dispense to Genesee County residents.
- All doses from the SNS are free of charge to underinsured or uninsured patients. A prescription from a health care provider is required to receive antivirals.

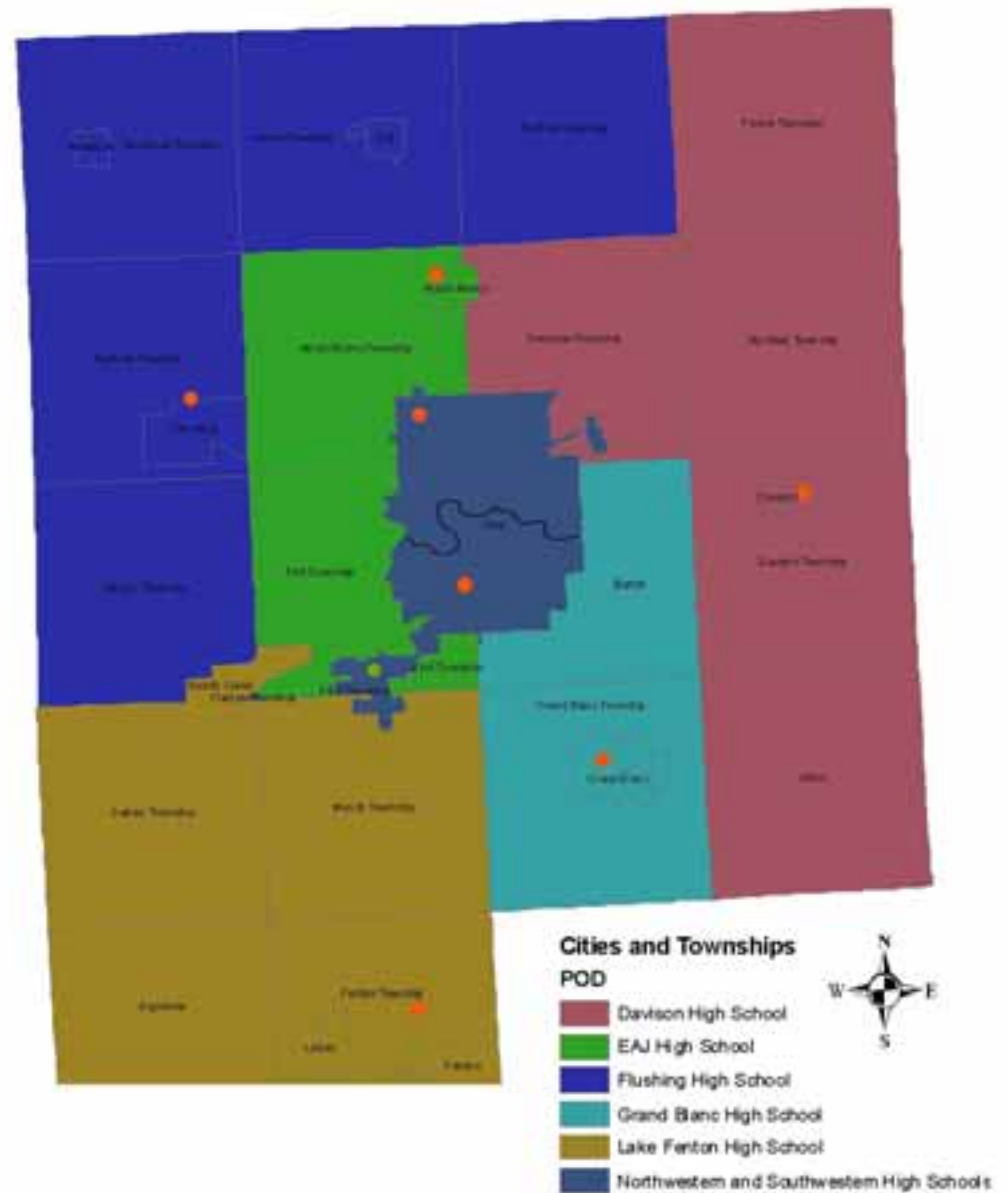
The most recent information about H1N1 Influenza can be found at www.gchd.us

- Syndromic Surveillance
- Confirmed Cases
- Hospitalizations/Deaths
- School & Childcare Data
 - # of districts with increasing activity
 - School closure information
- Vaccine Updates
- Antiviral Distribution

Mass Vaccination Clinics Using Points of Dispensing Sites

- Facilities previously identified and mass dispensing plans exist
- Limited vaccine
- Limited staff

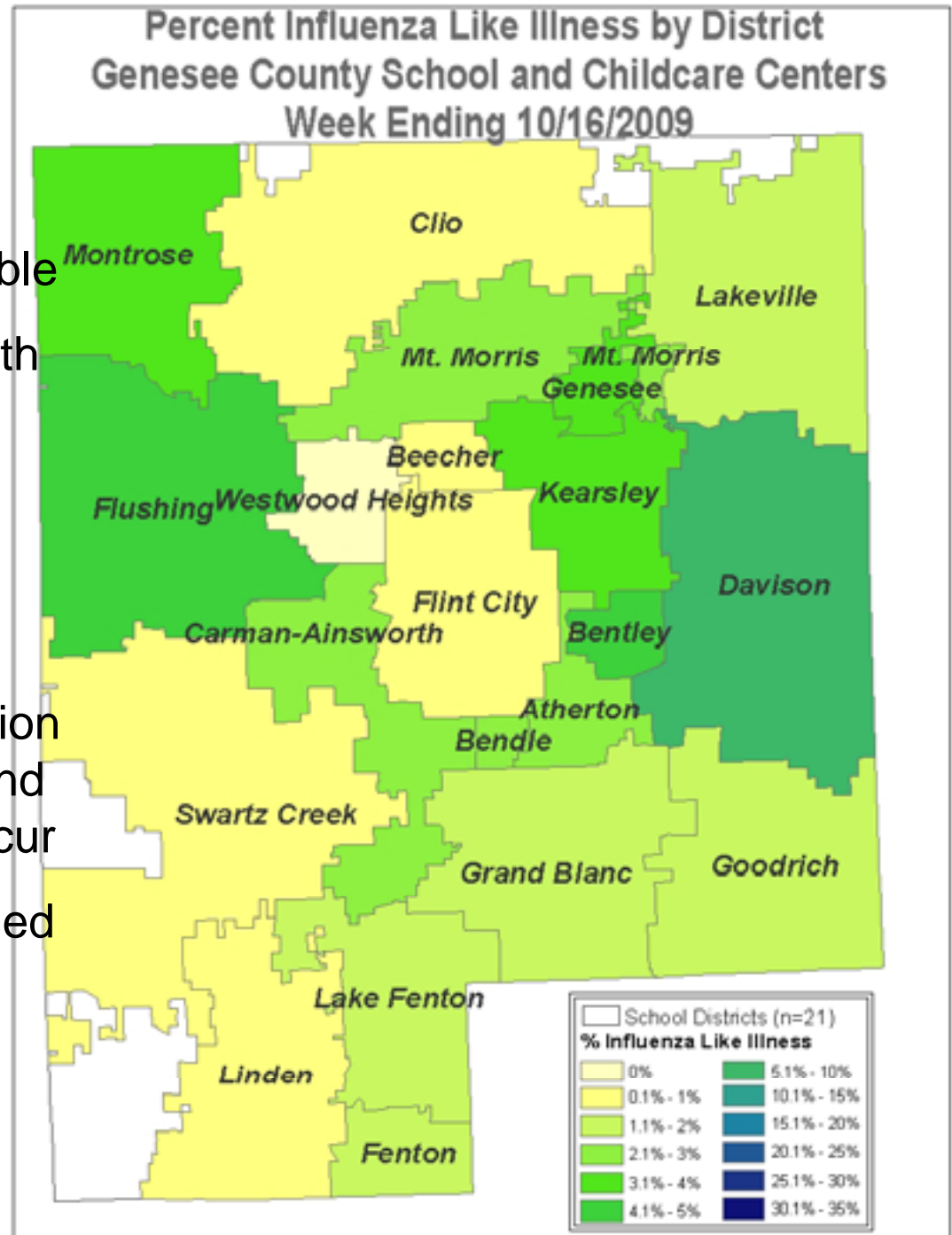
Genesee County Health Department
Distribution Node and Points of Dispensing (PODS)



POD site selection based on 2000 Population Census Data
Each POD estimated to serve approximately 62,898 persons (438,888 Population/7 PODs)

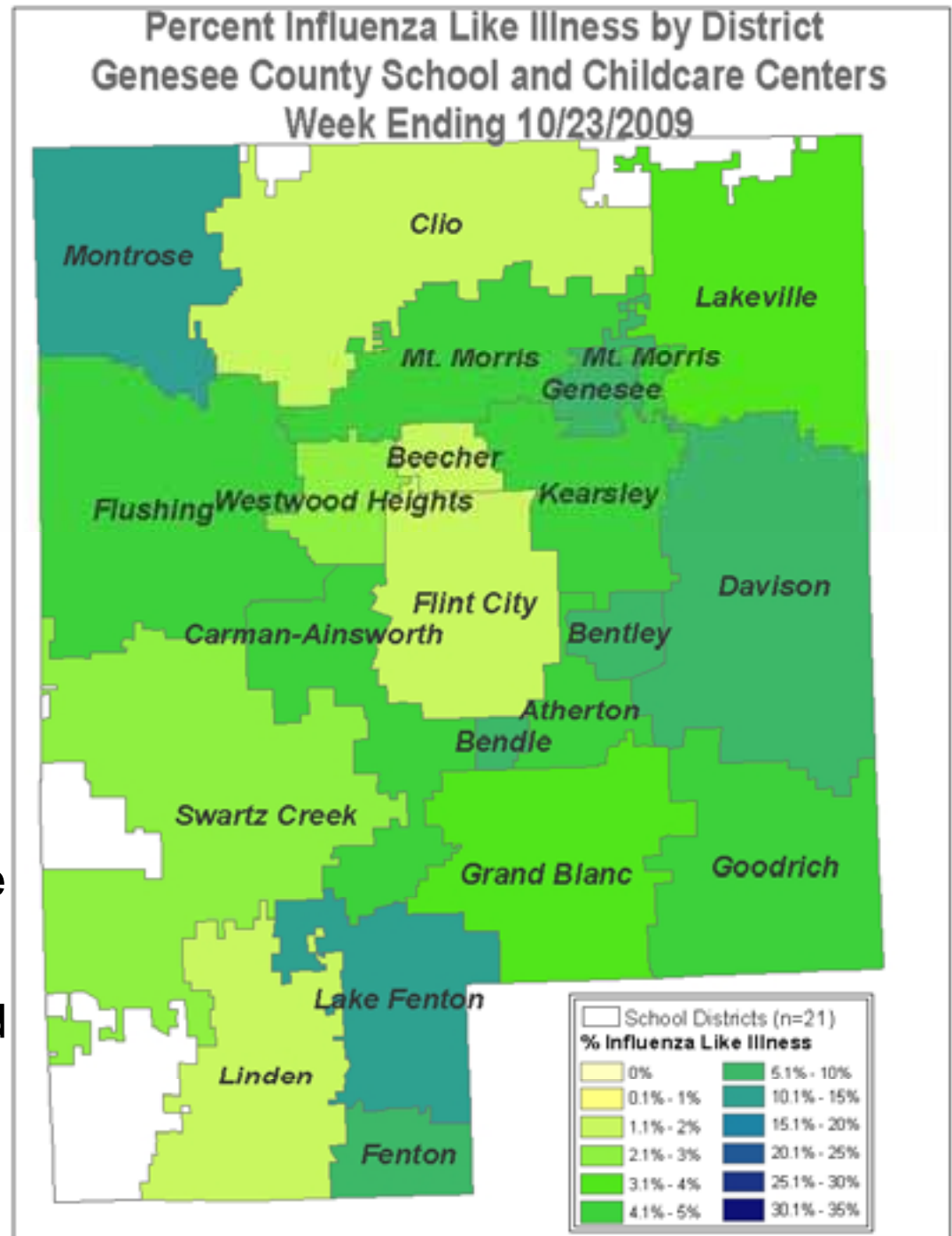
Example: Education

- No vaccine available
- School districts with highest disease burden contacted about increasing influenza like illnesses
- Daily communication between school and epidemiologist occur
- Information provided for dissemination



More Education

- Genesee Intermediate School District contacted regarding increases in ILI county-wide
- Press release issued to announce GCHD Media Conference
- Vaccine becomes available in limited supply



Example: Vaccine Clinic Planning

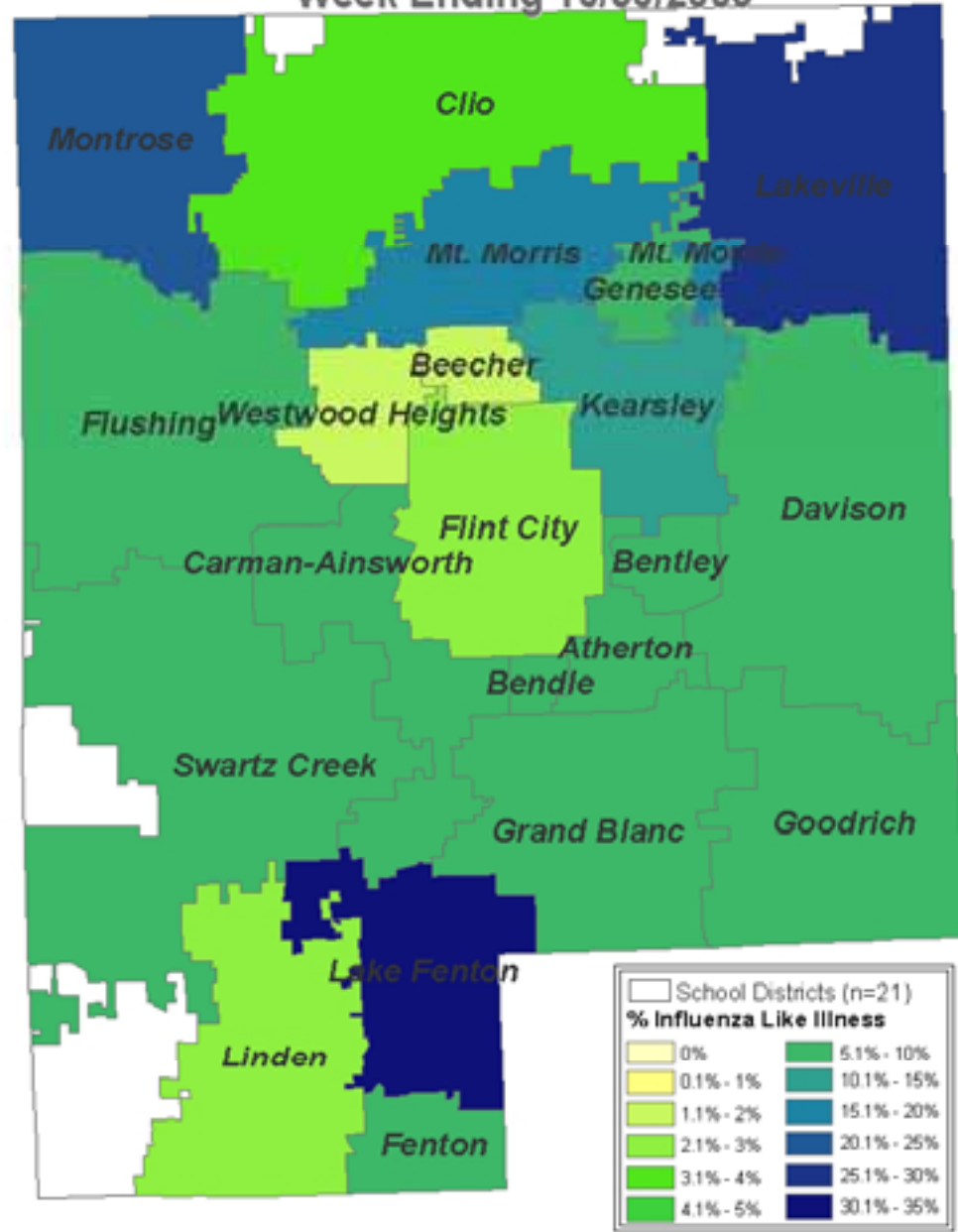
- 1st and 2nd clinics planned
- POD sites identified based on disease burden

Genesee County Health Department
Distribution Node and Points of Dispensing (PODS)



POD site selection based on 2000 Population Census Data
Each POD estimated to serve approximately 62,500 persons (431,688 Population / 7 PODs)

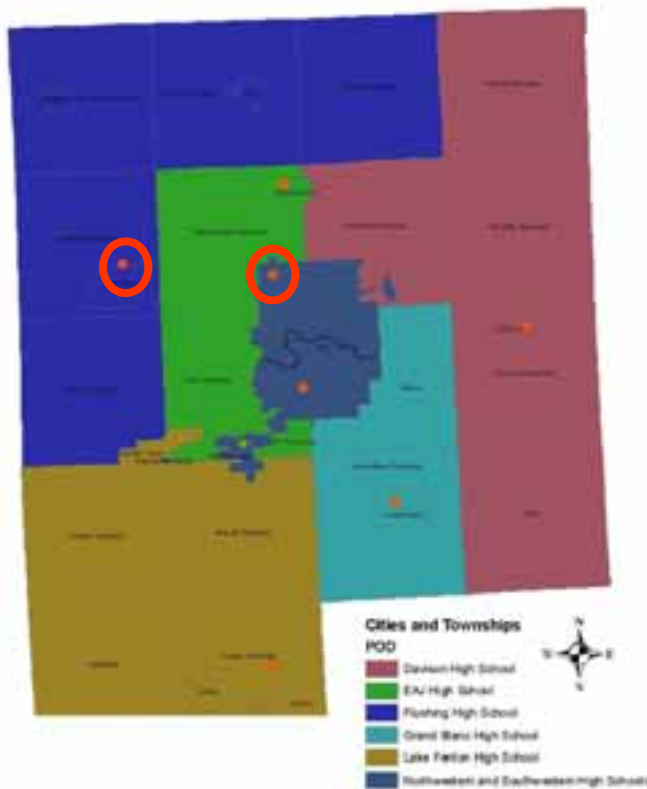
Percent Influenza Like Illness by District
Genesee County School and Childcare Centers
Week Ending 10/30/2009



Further Clinic Planning

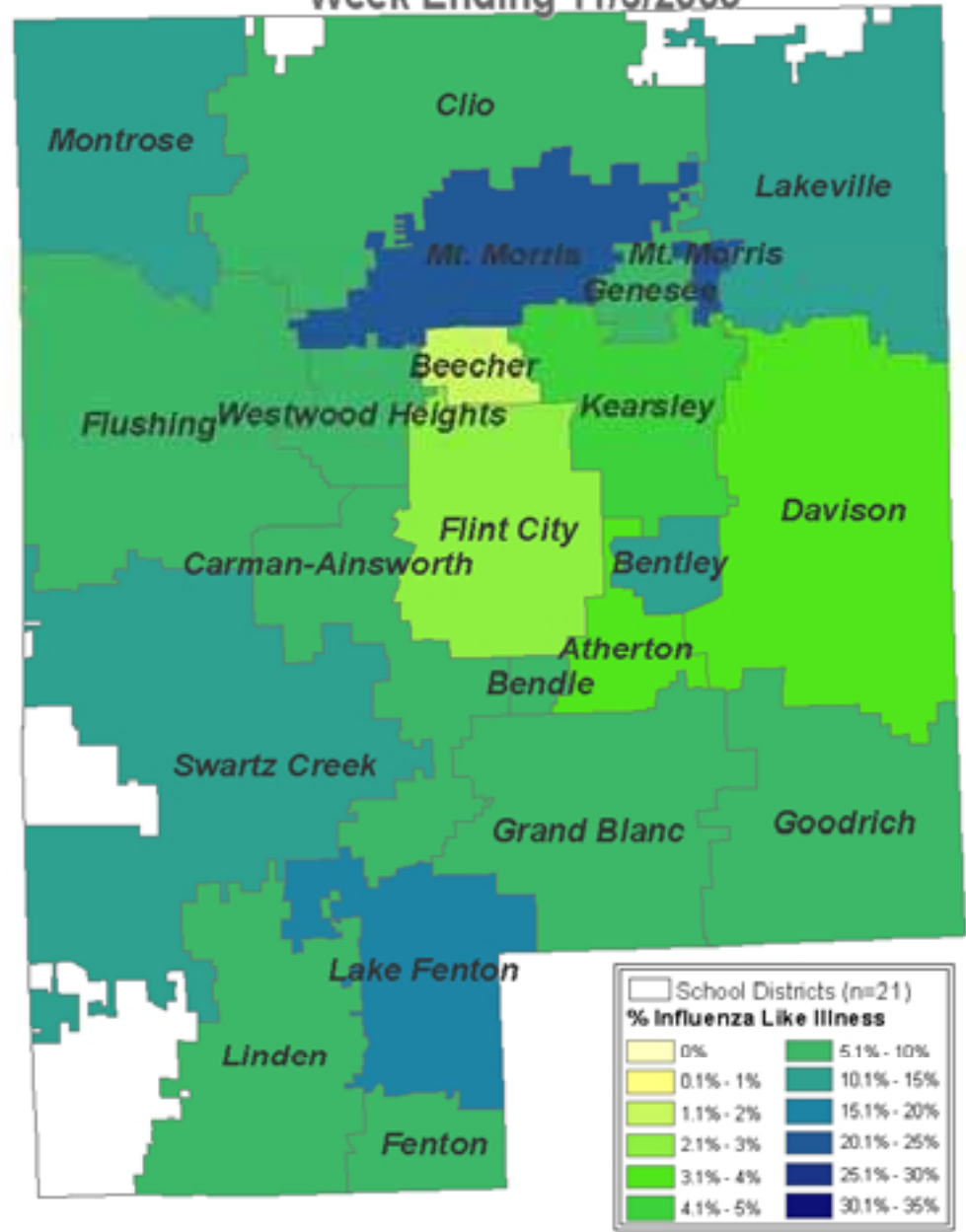
- More clinics planned
- POD sites identified based on disease burden

Genesee County Health Department
Distribution Node and Points of Dispensing (PODS)



POD site selection based on 2000 Population Census Data
Each POD estimated to serve approximately 62,500 persons (434,688 Population / 7 PODs)

Percent Influenza Like Illness by District
Genesee County School and Childcare Centers
Week Ending 11/6/2009



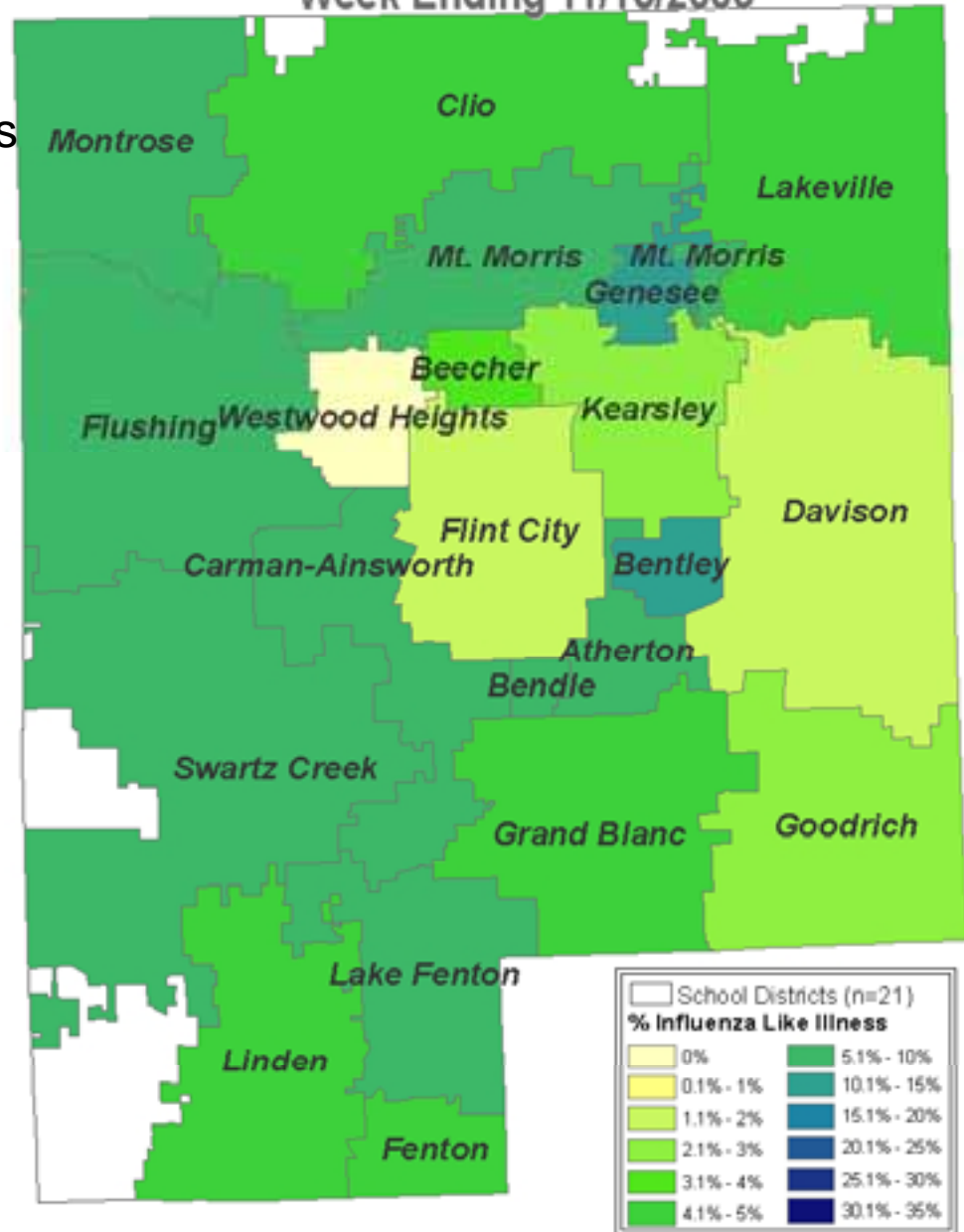
Further Clinic Planning

- GCHD and Community Partners continue clinics
- Vaccine now becomes more widely available

Genesee County Health Department
Distribution Node and Points of Dispensing (PODS)



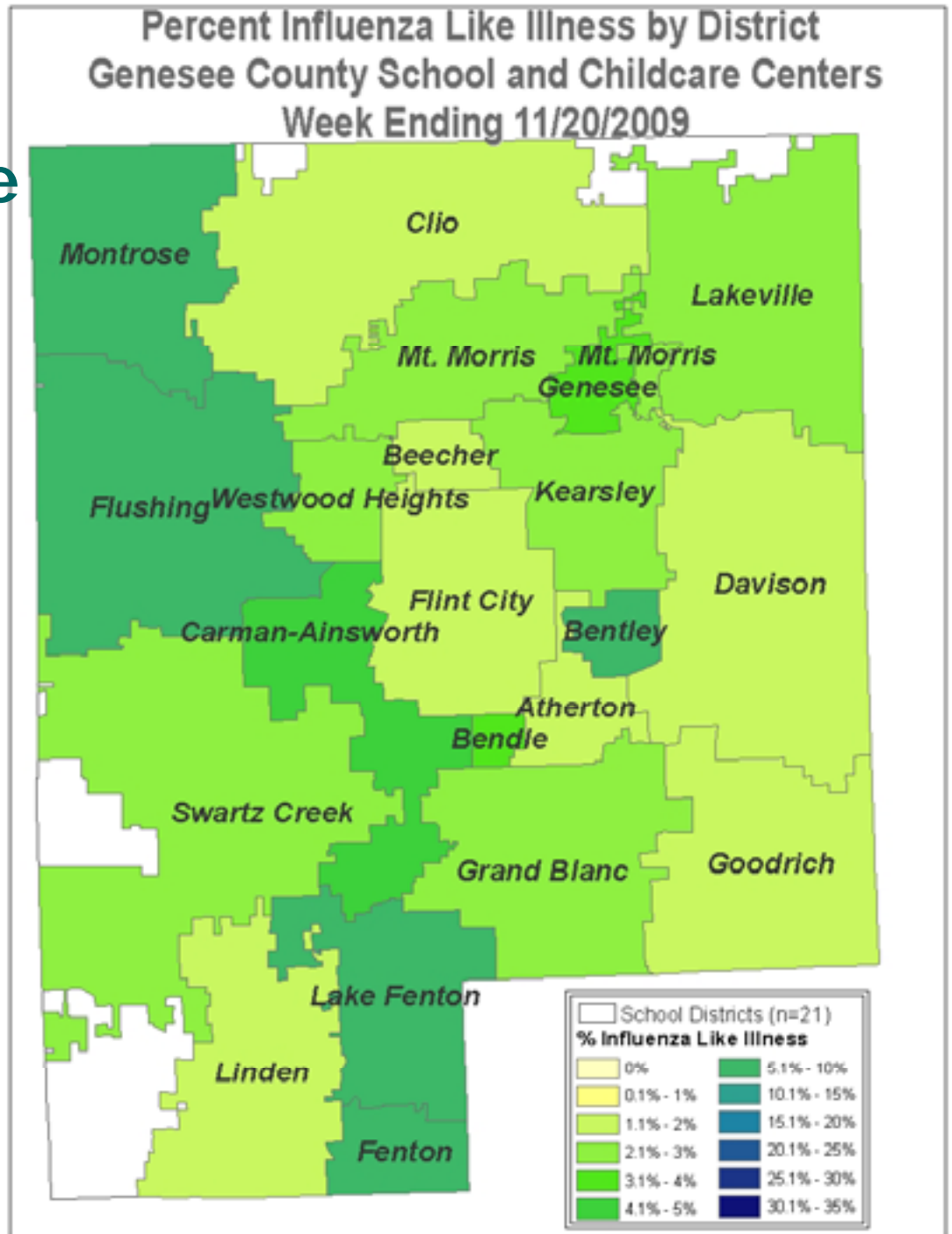
Percent Influenza Like Illness by District
Genesee County School and Childcare Centers
Week Ending 11/13/2009



POD site selection based on 2000 Population Census Data
Each POD estimated to serve approximately 62,500 persons (431,688 Population / 7 PODs)

Continued Surveillance

- Evaluation of vaccine efforts
- Monitor for 3rd wave of illness





Conclusion

- Utilizing GIS to display influenza like illness data is effective in public health practice
 - *Best distribution of resources*
 - *Target interventions to areas of greatest disease burden*
- Limitations
 - *Reporting is not consistent across districts or facilities*
 - *Limitations to weekly aggregate reporting of data*





Thank You!

