

Michigan Department
of Community Health



Jennifer M. Granholm, Governor
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LabLink

Michigan Department of Community Health
Bureau of Laboratories

“Quality Laboratory Science for Healthier People and Communities”

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BOL Preparing for Fall Flu Season

Patricia Somsel, Dr. P.H.
Division of Infectious Diseases

The Michigan Department of Community Health (MDCH), Bureau of Laboratories (BOL) is actively engaged in discussions with partners in clinical and state public health laboratories, local public health and the MDCH Bureau of Epidemiology to construct a plan for fall influenza viral testing. Planning is complicated by the assumption that up to four viruses may be circulating: seasonal human Influenza A (probably an H1N1 and an H3N2 strain), Influenza B (probably B/Malaysia), all of which are targeted by the 2009/2010 seasonal flu vaccine and novel influenza A H1N1 2009 (swine-origin). [The latter has been given the official nomenclature of “pandemic Influenza A (H1N1) 2009” by the World Health Organization (WHO)].

The experience of clinical and public health laboratories in May and June of this year was sometimes painful with the introduction of 2009 Novel Influenza A H1N1 to Michigan. The rapid spread of this agent from counties in California and Texas to nearly every county in Michigan was unprecedented in modern times providing many challenges and opportunities to improve laboratory service. BOL plans will address gaps identified by a recent survey of clinical laboratory partners.

Guidance from the Centers for Disease Control and Prevention (CDC) on case definitions, who to test, what specimens to collect and safe practices changed almost daily this spring making it a challenge to communicate the most current information. The BOL was challenged by the frequent changing of the name of the agent and were unable to keep pace with the nomenclature changes in result reporting. The Michigan Health Alert Network (MIHAN) was the vehicle for DCH updates, but many providers have not registered to receive MIHAN alerts. See textbox on page 2 for instructions. The BOL website was also utilized for updates, but the clinical laboratory survey suggests it needs to be a more user-friendly environment. To do so, a Laboratory Novel H1N1 (Swine) Influenza page link has been added on the main BOL web page (www.michigan.gov/mdchlab) where all updates will be posted. Maintaining an adequate supply of specimen collection materials in the field was a problem at times. The BOL intends to pre-deploy stocks in each local health department, and urge clinical laboratories to assess their supplies, including outdates of kit components, before the fall.

Keeping every level of public health, from local to state agencies, on the same page so there was only one message for physicians and the

medical community required enormous effort and the process needs to be improved. If the fall influenza season is severe, there will be a strong demand for vaccine. It is anticipated that local health agencies would be heavily engaged in this activity and have limited time to be involved in testing decisions, so the MDCH guidance on testing must be explicit. Making the clear distinction between diagnostic testing, needed to direct patient care, and surveillance testing, needed to establish the penetration of a particular strain in Michigan, will allow clinical partners to perform their jobs without having to be gatekeepers for public health.

**Please note the MDCH 2009-2010
Guidelines for Clinicians on Influenza
Testing starting on page 10**



**System Administrator Contacts
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Users should supply name, e-mail address, job title and work phone in order to establish an account. For more information on MIHAN, please visit www.michigan.gov/mihan

**Update on Novel Influenza A H1N1 2009
(Swine-origin)**

William Crafts, B.S. MT (ASCP)
Bacterial & Parasitic Serology Unit

Since testing began in April 2009, MDCH has reported novel influenza A H1N1 2009 (swine-origin) cases in most of the 83 Michigan counties. As of September 26, 5915 cases of flu-like illness and confirmed/probable cases of seasonal and novel influenza, including ten fatalities, were reported in Michigan. In the past few weeks, surveillance data indicate decreasing influenza activity throughout the state and approximately 99% of identified viruses are novel influenza A H1N1 2009. A recent morbidity mortality weekly report (MMWR, July 10, 2009/58) article discussed ten severely ill hospitalized Michigan patients in which underlying risk factors, such as obesity, may have contributed to the severity of illness.

A confirmed case of novel influenza A H1N1 2009 infection is currently defined as a person with influenza-like illness who tests positive for novel influenza A H1N1 2009 by RT-PCR performed by the Bureau of Laboratories (BOL) or BOL verified test. A probable case is defined as a person with influenza-like illness who tests positive with either a commercial pandemic influenza A H1 PCR test that has not been validated by MDCH BOL or who tests positive for influenza A, but negative for seasonal influenza H1 and H3 by RT-PCR.

Testing is limited to patients with unusually severe respiratory disease or presentation and/or death. The reason for testing field must be completed on the test request form or the specimen will not be processed. The following specimens are acceptable for RT-PCR testing; NP swab or nasal swab submitted in viral transport media or phosphate-buffered saline, nasal aspirates and viral isolates.

MDCH continues to monitor influenza activity throughout Michigan and on a weekly basis and submits respiratory specimens CDC for subtyping, genetic analysis and antiviral resistance. For the most current information, please continue to reference the State of Michigan's novel influenza A H1N1 2009 website at www.michigan.gov/swineflu.

FUN FUNGI.....

Trichophyton soudanense and *Trichophyton violaceum*

Sandy Arduin MT (ASCP) and Bruce Palma MT (ASCP) - Mycobacteriology/Mycology Unit

Last Issues Picture Quiz Answer:



T. soudanense reflexive hyphae

Trichophyton soudanense is an anthropophilic (grows preferentially on humans), dermatophyte found primarily in central, east-central and western Africa. Cases have occasionally been isolated from patients in South America, Europe and the United States; primarily from people who have emigrated from Africa. *T. soudanense* predominantly causes tinea capitis but may also cause tinea corporis in "shower sites" (anywhere inoculum has washed down from the scalp).

Colonies of *T. soudanense* are moderately slow growing and have a glabrous to velvety, flat to folded, suede-like appearance. Colony color ranges from yellow to apricot orange; occasionally suffused with pink to red colors. The reverse is sulfur yellow to apricot orange or orange-brown. Colonies often have a broad fringe of submerged growth giving the colony a star-like appearance. Use of BHI agar may enhance this appearance. Colonies have a brownish-black appearance on LJ slants.



T. soudanense on BHI and LJ slants



T. soudanense on SAB plate

Most isolates of *T. soudanense* produce few or no microconidia. When present, microconidia are clavate to pear shaped and form directly on the sides of the hyphae. The key identifying characteristic of *T. soudanense* is its production of reflexive branching (side branches of hyphae growing both forwards and backwards at an acute angle in respect to the main direction of hyphal growth). Reflexive branching is most easily found in the star-like margins of growth on BHI agar or BCP-milk solids-glucose agar.

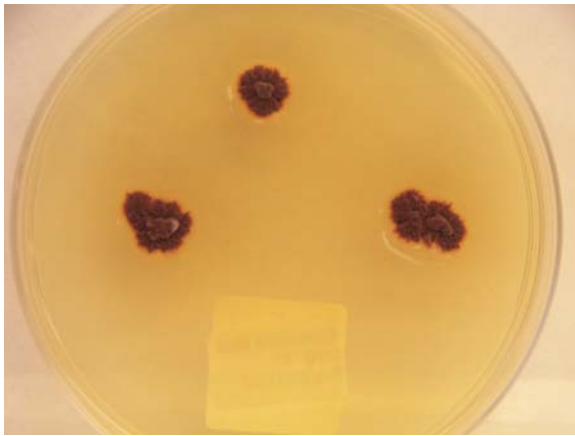
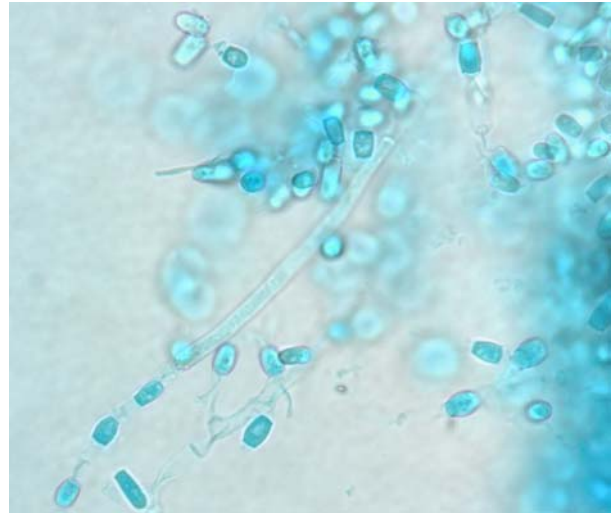
Although *T. soudanense* is rarely seen in the United States, MDCH has received several isolates in the last three years. Not only has MDCH seen an increase in isolates of *T. soudanense*, but there has been an increase in isolates of *Trichophyton violaceum* as well. This increase in cases of both species has occurred elsewhere in the United States. Of major note is the study triggered by an increased incidence of both *T. soudanense* and *T. violaceum* in Baltimore, Maryland from 2000-2006. There has been some discussion in the literature of *T. soudanense* and *T. violaceum* being conspecific (of the same species), but most sources still list them as separate species.

T. violaceum is also an anthropophilic dermatophyte. Its distribution is worldwide, but it is more frequently found in Eastern Europe, North Africa and the Near East. *T. violaceum* primarily causes tinea capitis, but may also cause tinea

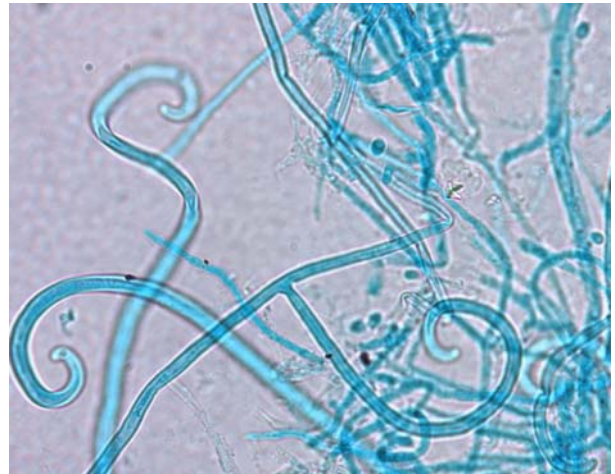
corporis in “shower sites.” *T. violaceum* has occasionally been recovered from feet and nails.

Colonies of *T. violaceum* grow slowly and have a glabrous to waxy, wrinkled to heaped appearance. Colonies have a distinctive deep purple-red appearance but may develop a white waxy to downy fringe with time. The colony reverse is deep purple. Subcultures become downier and may lose the ability to form the deep purple pigmentation. *T. violaceum* has a partial requirement for thiamine. Most isolates of *T. violaceum* will grow better on Trichophyton agar #4. Primary cultures often lack microconidia. Clavate to pyriform microconidia may form on enriched media. Chains of asymmetric chlamydospores often form at 37°C. *T. violaceum* forms deep purple colonies on both BHI and LJ agar.

Picture Quiz: What mould is this?



T. violaceum on SAB plate



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Formalin Waste Reduction

Carlton Evans, B.S. and
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Bacterial and Parasitic Serology Unit

The MDCH Bureau of Laboratories (BOL) is incorporating the concept of green chemistry by decreasing production of formalin waste. Formalin is a corrosive, toxic and carcinogenic compound that is disposed of as a hazardous waste product. A significant reduction in formalin waste disposal has been accomplished with a slight modification of the Legionella antigen processing procedure. In the early 1980's, BOL Bacterial and Parasitic Unit (B&P Unit) developed a unique hemagglutination test for the detection of Legionella antibodies. The B&P Unit produces all the reagents needed for this test. The B&P Unit cultures and processes 37 different serotypes of Legionella and chemically binds the resulting protein antigens with turkey red blood cells to form a hemagglutination reagent. Patient sera are added to microtiter wells containing these antigens. If antibodies are present in the patient sera, it will bind with the specific Legionella antigen resulting in a visible antigen-antibody reaction.

In the previous procedure, Legionella cultures were inactivated by adding 12 ml of 1% formalin to each culture bottle and then the inactivated bacteria were pooled. Currently, collection and pooling the Legionella from all the culture bottles is done before inactivating with formalin. This allows determination of how much formalin is added to the final concentration and reduces the formalin waste by approximately 432 ml per run. MDCH performs two Legionella runs every six weeks, growing and processing about 17 different Legionella serotypes in one year. This new process resulted in an annual reduction of 7.34 liters of formalin liquid waste and 16 bags of formalin contaminated supplies. The annual savings is approximately \$1205, which does not include the ancillary costs associated with

formalin waste collection, transport and disposal.

NOTE:

MDCH is the only state public health laboratory in the United States capable of detecting antibodies against all 37 Legionella species. Because of this rare test method, MDCH is requesting that serum be submitted on all Legionella cultures positive patients, as well as on those suspected of having community acquired Legionella pneumonia. MDCH will use the sera for quality control checks on reagents and for in-house proficiency testing. Any serum provided would be appreciated. Please contact William Crafts at 517-335-8100 or at craftsw@michigan.gov with any questions regarding submission.

Newborn Screening Joins MCIR

MCIR began as the Michigan Childhood Immunization Registry, but as its scope has broadened far beyond hosting only immunization records, its name has changed to reflect its expansion. It is now known as the Michigan Care Improvement Registry.

MCIR has been a resource to health care providers for several years of children's health information. This has proven to be a great convenience and time-saver for health care providers and their patients.

This spring, the Newborn Screening Program joined the list of MDCH programs providing health data to MCIR. Health care providers no longer need to search for paper reports to find Newborn Screening test results. They are now able to log on to the MCIR to see an electronic version.

Bureau of Laboratories Is Using a New Laboratory Information System

William Schneider RM(AAM)
Enteric/STD/Chromatography Unit

The MDCH Bureau of Laboratories has used the EPIC laboratory information system (LIS) since 1993. It has been an excellent system but is text based and is unable to handle many of the laboratory needs for advancing technology. The BOL is currently implementing a new LIS, called StarLIMS.

MDCH employees, in collaboration with Department of Information Technology personnel, have been working diligently to put the new LIS into place for proper work flow, test result recording and reporting of results. All of the functionality currently used by EPIC will be performed by StarLIMS. That includes reportable disease reporting to the appropriate county when known, reportable disease reporting to MDCH Epidemiology and to the Michigan Disease Surveillance System (MDSS). Laboratory results are still available by fax. The tests for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* non-culture (RNA amplification) went live in StarLIMS on August 3, 2009. Other testing will be move to this new platform as functionality has been completed, tested and accepted.

Specimen submitters should not notice any difference with this change except the reports will look slightly different. This change was necessary so the Bureau of Laboratories can continue to meet national information technology standards. The transition to StarLIMS will allow more efficient and accurate electronic information transmission and more robust reporting options.

Change in After Hour Access to State Laboratory Building 44

Beginning August 10, after hours guard service, security for the State Laboratory Building 44 was limited to only routine business hours, Monday through Friday, 7:00 AM to 5:00 PM.

Instructions regarding specimen storage for delivery personnel are posted in Room 100. Non-routine specimen delivery after hours should be pre-arranged. Persons making routine specimen deliveries should pre-register with the Department of Management and Budget.

http://www.michigan.gov/documents/dmb/Security_Clearance_Form_DMB_453_revised_112508_258763_7.pdf

Bureau of Laboratories Vision

The Bureau of Laboratories is a stronger, more diverse team within an integrated public health system. We utilize advanced technology and innovative leadership to provide comprehensive public health services in our dynamic global community.

Bureau of Laboratories Mission

We are dedicated to continuing leadership in providing quality laboratory science for healthier people and communities through partnerships, communication and technical innovation.

Patty Clark Chosen to Lead New Bureau Section

The Bureau of Laboratories (BOL) administration has chosen Patty Clark to head the newly established Laboratory Systems Section. The establishment of this section acknowledges the importance to public health laboratory practice today of reaching beyond the physical walls of the lab.

Ms. Clark will oversee the work of laboratory staff involved in training and laboratory information activities to assure maintaining quality internal and external channels of communications. Ms. Clark, who has presided as WebMaster for several years, will continue to work to improve the Internet presence of the BOL, will assume the duties of the State Training Coordinator for the National Laboratory Training Network (NLTN), and support the newly organized Laboratory Advisory Group.

The requirement to train clinical laboratory professionals to prepare for terrorism specimen collection and processing and the increase in multiple drug resistant bacteria with significant public health impact (e.g., VRSA) has made communication and integration with clinical laboratories essential to public health. The responsibilities of these staff cut across divisions within the Bureau, suggesting the need for central management and direction to facilitate external client input, adjustment of services, progress reports and response to grant opportunities.

Ms. Clark, who has most recently headed the Viral Serology/Viral Isolation/Viral Molecular Unit in the Virology Section, completed a bachelor's degree in microbiology at Michigan State University and a Masters in Public Health at the University of Michigan. She has been a member of the Bureau of Laboratories staff since 1978. You may contact Ms. Clark at clarkp@michigan.gov.

New LabLink Editor

After 14 years of service as the LabLink Editor, this is Susan Shifflet's final edition. With her commitment to laboratory science and public health that she established the LabLink as a state and national resource for public health laboratory information. We sincerely thank Susan for her efforts and wish her the best of luck. Patricia Clark, Manager of the Laboratory Systems Section will take over responsibility for coordinating and editing the quarterly publication.

LabLink is published quarterly by the Michigan Department of Community Health, Bureau of Laboratories, to provide laboratory information to Michigan health professionals and the public health community.

Director, Bureau of Laboratories
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DCH-0096

Newborn Screening Laboratory Implements an Improved Test for Congenital Adrenal Hyperplasia (CAH)

Harry Hawkins, B.S.
Newborn Screening Laboratory

Newborn screening identifies and ensures follow-up treatment of babies with serious conditions, often before clinical symptoms appear. Some disorders can cause death or mental impairment if not treated. The MDCH Newborn Screening Laboratory has been screening for congenital adrenal hyperplasia (CAH) since 1993. CAH refers to a group of inherited disorders of the adrenal glands, which are located on top of the kidneys. Babies with CAH lack an enzyme needed by the adrenal gland to make the hormones cortisol and aldosterone. The most common form is 21-hydroxylase deficiency that can be inherited in severe or mild form.

The two classic forms are the simple virilizing and salt-loss types. Simple virilizing 21-hydroxylase deficiency causes a buildup of potent androgens that leads to the masculinization (development of male characteristics) of external genitalia in females at birth. Salt-wasting 21-hydroxylase deficiency results from an almost complete loss of enzyme activity. This deficiency results in very little aldosterone production and as a result the kidneys do not reabsorb sodium.

Both classic forms of CAH can be detected by newborn screening in dried blood spots on filter paper. The salt-wasting severe form can be life threatening if not treated in a timely manner. The laboratory measures 17 α -hydroxyprogesterone (17-OHP) which can accumulate from a defect in 21-hydroxylation cortisol production. In 2008, the CAH detection rate in Michigan was 1:19,298. One case of salt-wasting CAH and two cases of non-salt-wasting CAH were detected.

In a nonclassic form of 21-hydroxylase deficiency, levels of functional 21-hydroxylase enzyme are reduced. Both sexes with the nonclassic type can display signs and symptoms of androgen excess after birth.

One goal of newborn screening testing is to reduce the number of false positive results without missing any true cases. Low birth weight babies in neonatal intensive care units often have stressed-related 17-OHP test levels. High 17-OHP can also be due to cross reactivity with other steroids. A new PerkinElmer AutoDELFLIA[®] Neonatal 17 α -OH-progesterone kit for CAH has been adopted after validation and cutoff ranges. This kit has improved specificity with a new formulation of antisera and, thus, less cross reactivity with other steroids. In August the laboratory switched to this kit and early indications are that the number of false positives will be reduced by more than half.

With this reagent change, the reference ranges for 17-OHP have also changed substantially (See Table 1). For questions or comments, contact Harry Hawkins (517) 335-8095 or at HawkinsH@michigan.gov.

Table 1. Comparison of Reference Ranges in the Neonatal 17-OHP Assay

For newborns \geq 2,500 gms, > 12 hrs old

Current Cutoff	New Cutoff	Result
< 90	< 65	Normal
90 – 109	65 - 89	Borderline Positive
> 109	> 89	Strong Positive

For newborns < 2500 gms and/or \leq 12 hrs old

Current Cutoff	New Cutoff	Result
< 150	< 100	Normal
150 – 209	100 – 149	Borderline Positive
> 209	> 149	Strong Positive

All units are ng/mL



Beyond Newborn Screening, Michigan BioTrust for Health

Janice Bach, M.S.
Bureau of Epidemiology,
Genomics and Genetic Disorders Section

As technology advances, interest in using stored human tissue samples, such as newborn screening dried blood spots (DBS), for biomedical research continues to increase. In response to this interest, MDCH recently announced plans for a new initiative called the Michigan BioTrust for Health. The BioTrust will improve storage conditions for dried blood spot samples left over after newborn screening is done, and let researchers know de-identified dried blood spots can be used for medical and public health research approved by the MDCH scientific review panel and IRB (Institutional Review Board).

Based on advice from the state Attorney General's office in the 1980's, over three million DBS dating back to 1984 have been retained in storage after completion of newborn screening tests. In 2000, the Michigan Legislature amended the public health code to allow use of these residual DBS samples for medical research, as long as confidentiality is maintained.

Over the past few years, MDCH has worked with the state's major research universities and Van Andel Institute as partners to develop a model state-based DBS repository. Once screening is completed, one full blood spot from every baby is retained at the state laboratory in case it is ever needed for use by the child or family. The remaining blood spot sample is stripped of all identifying information and will be stored indefinitely in a temperature-controlled facility at the Michigan Neonatal Biobank, a non-profit charitable organization located in Wayne State University's Biobanking Center of Excellence.

We encourage you to learn more about the BioTrust and will keep you informed as new developments occur. All are also invited to participate in our on-line survey. Please visit www.michigan.gov/newbornscreening and click on the Michigan BioTrust for Health link. The survey takes only a few minutes to complete, and is intended for any Michigan resident (18 years or older) who wants to provide feedback. This survey will be on-line through November 30, 2009.

For more information, please contact Carrie Langbo, BioTrust Community Outreach Coordinator at langboc@michigan.gov.



www.mnbb.org

MDCH 2009–2010 Guidelines for Clinicians on Influenza Testing

**Michigan Department of Community Health
August 14, 2009**

Intended audience: Physicians, infection control providers, laboratorians, local health departments

Purpose: To communicate to clinicians the MDCH Bureau of Laboratories (BOL) 2009–2010 guidelines on pandemic (formerly known as swine or novel) influenza A H1N1 testing for targeted groups

1. Case Investigation Influenza Testing at MDCH BOL

Due to capacity limitations, MDCH BOL will not be conducting influenza testing (RT-PCR) for every suspect pandemic H1N1 case within Michigan. Similar to traditional influenza seasons, influenza testing at BOL during 2009–2010 will focus on outbreak investigations and public health-directed case investigations (see next paragraph). Testing of these groups provides information on the severity of circulating influenza viruses and vaccine efficacy. Test results are expected to take 1–2 days once the specimen is received at BOL. Clinicians should note that test results should not be the only criteria used for determination of clinical therapy. Due to unavoidable lag time involved in transport and processing, results will not be available in the time frame needed to make therapeutic decisions.

Case investigation influenza testing at MDCH BOL will be limited to the following groups:

- Hospitalized patients with severe influenza-like illness (i.e., ICU patients)
- Patients with an influenza-like illness of an unusual presentation (e.g., encephalopathy, cardiac complications)
- Pregnant women with severe influenza-like illness
- Outbreaks or clusters of influenza-like illness in congregate settings (e.g., schools, camps, long-term care facilities, daycares, etc), as requested by local or state public health
- Influenza-related deaths of individuals of any age

Note: Sentinel Network Providers will receive separate instructions on specimens to be submitted.

2. Pre-Approval Process for Specimen Testing

Depending on the volume of specimens received at BOL for influenza testing, **a pre-approval process may be instituted. Please visit www.michigan.gov/flu for the current status of any approval processes in effect.** Regardless of the approval process status, an MDCH BOL test request form must accompany each specimen. Test request forms and specimen collection guidance can be found online at www.michigan.gov/mdchlab by clicking on “Test Request Forms” and “Microbiology/Virology DCH-0583” for test request forms and “Specimen Submission” for specimen collection guidance. Notification of an approval process requirement

will occur via the MIHAN, MI FluFocus listserv and on www.michigan.gov/flu. Further details can be found on the accompanying testing algorithm.

Clinicians needing diagnostic testing are encouraged to use private or hospital labs offering influenza testing. The BOL is working with several Michigan clinical laboratories interested in developing pandemic flu specific PCR assays to assure their assays are sufficiently sensitive and specific to be useful in diagnostic testing.

3. Role of Rapid Flu Testing

FDA-approved rapid diagnostic tests for influenza are increasingly available to clinicians. The results obtained from such tests should be used with caution. A recent report issued by the CDC (MMWR 58(30):826–829, 2009) confirms earlier reports that these devices have a wide range of test sensitivities (40–83%) for detecting either the seasonal or novel influenza A subtypes when compared with PCR or viral culture. Therefore, a negative test result by itself does not rule out influenza infection. A positive rapid test result coupled with appropriate clinical signs and symptoms and knowledge of currently circulating influenza strains may be useful for making clinical diagnosis.

4. Influenza Surveillance Testing

Since this influenza pandemic began in April 2009, the virus has spread throughout all areas of the state of Michigan, as demonstrated by influenza surveillance methods. Therefore, the focus of MDCH surveillance for this virus has shifted from individual case confirmations to surveillance for overall influenza activity. MDCH has preexisting sentinel healthcare provider and laboratory networks that provide both epidemiologic and laboratory data on influenza virus circulation in Michigan.

5. Reporting of Cases

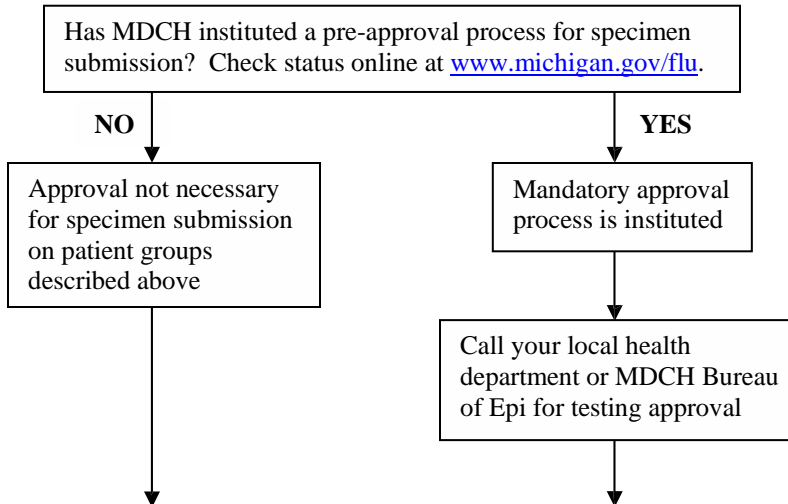
At this time, aggregate counts of influenza, influenza outbreaks in congregate settings, and individual case reports for severely ill persons or fatal cases of influenza (as listed in Section 1 above) are reportable to your local health department. **Influenza reporting may change in the future depending on the epidemiology of the virus; please refer to your local health department for current influenza reporting requirements.** Local health directories can be found online at <http://www.malph.org/page.cfm/18/>.

Any questions regarding this guidance or influenza activity can be directed to the MDCH Division of Communicable Disease at 517-335-8165. Laboratory-specific questions can be directed to Dr. Anthony Muyombwe at the MDCH Bureau of Laboratories at 517-335-8067.

Influenza Testing Algorithm for Cases and Outbreaks – Fall 2009 Michigan Department of Community Health

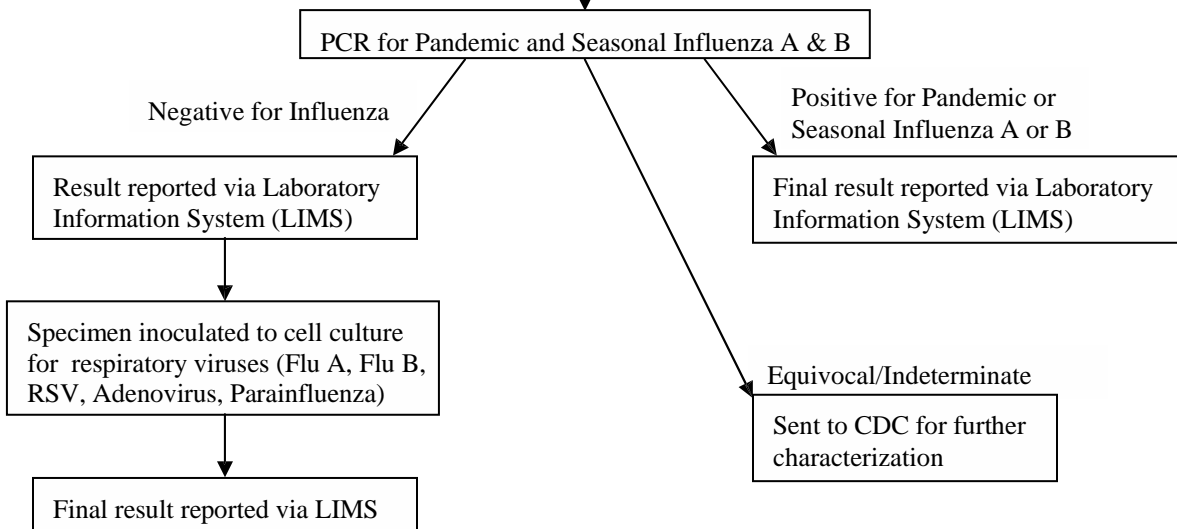
Questions regarding case and outbreak influenza testing should be directed to the MDCH Bureau of Epidemiology at 517-335-8165 during normal business hours or 517-335-9030 after hours.

MDCH influenza testing will only be conducted for public health case investigations (⁺ICU hospitalizations, severely ill pregnant women, patients with unusual and severe presentations, and deaths) and for **congregate setting outbreak/cluster investigations**. See “MDCH 2009-2010 Guidelines for Clinicians on Influenza Testing,” available on the MIHAN and at www.michigan.gov/flu, for more information and for reporting requirements.



Collect acceptable specimen*# and ship to MDCH on frozen cold packs, along with MDCH lab test request form (go to www.michigan.gov/mdchlab and click on “Test Request Forms” and “Microbiology/Virology DCH-0583”).

On test request form, (1) under “Specimen Information” enter “Novel Influenza A PCR” in the “Other-Specify Test code/Name” field. (2) Under the “Indicate Test Reason Below” subsection, enter reason for testing⁺ (see top box above) in the “Other-Specify” field. If approval process is instituted, also write the name of person giving approval in the space marked “MDCH Prior Approval Given By.” Testing will be delayed if this information is not provided.

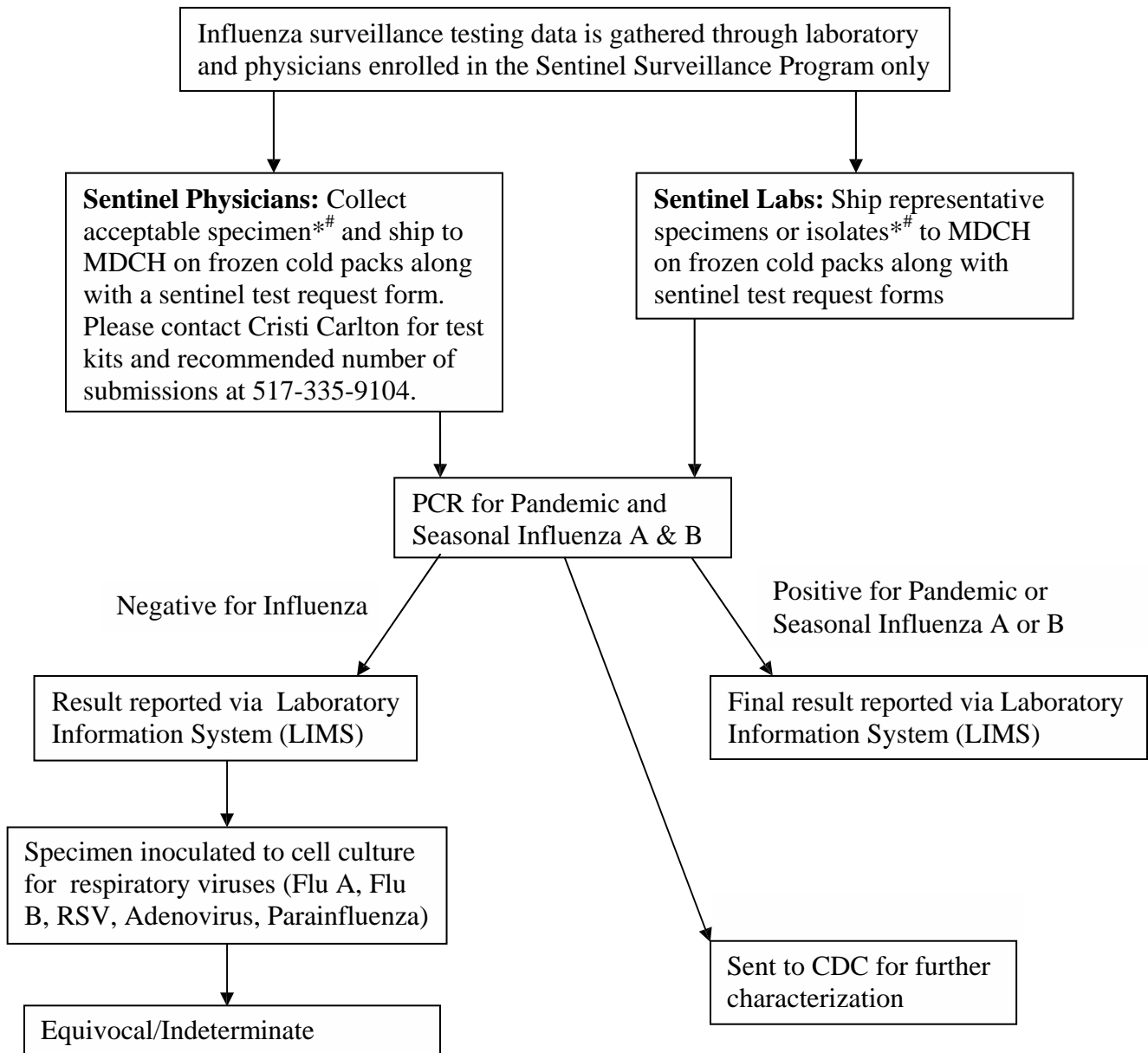


* Acceptable specimens: NP swab in viral transport medium (VTM) or saline (PBS); Nasal swab in VTM or PBS; Dual NP/OP swabs in VTM or PBS; Nasal aspirates; Viral isolates. **DO NOT SUBMIT MULTIPLE SAMPLES ON THE SAME PATIENT.**
 # Swabs used in influenza rapid diagnostic tests **cannot** be reused for MDCH testing. Consider collecting two swabs so that one may be reserved for MDCH confirmatory testing if needed. Alternatively, an aliquot of the original specimen may be submitted

Surveillance Testing Algorithm for Influenza – Fall 2009
Michigan Department of Community Health

NOTE: Surveillance samples should only be submitted by physicians and laboratories enrolled in the statewide Sentinel Surveillance Program. If you are unsure whether you are enrolled or if you would like to enroll in this program, please consult your local health department or MDCH (517-335-9104 for physicians; 517-335-8165 for labs).

Surveillance Testing



* Acceptable specimens: NP swab in viral transport medium (VTM) or saline (PBS); Nasal swab in VTM or PBS; Dual NP/OP swabs in VTM or PBS; Nasal aspirates; Viral isolates. **DO NOT SUBMIT MULTIPLE SAMPLES ON THE SAME PATIENT.**
Swabs used in influenza rapid diagnostic tests **cannot** be reused for MDCH testing. Consider collecting two swabs so that one may be reserved for MDCH confirmatory testing if needed. Alternatively, an aliquot of the original specimen may be submitted.