



VARICELLA ZOSTER (VZV)

1. Chickenpox (Varicella) Protocol in WRHA Community Health Services Clients and Staff

Preamble:

These algorithms and guidelines were developed to assist Community Health Care personnel in managing Varicella in the community. A single case of Varicella can be managed with the assistance of these resources and these algorithms contain a suggested strategy in determining the process and individuals involved in case management. Varicella does not have to be reported to Public Health; however an outbreak of Varicella is reportable under the Public Health Act. Public Health is available for consultation in both instances.

The following are algorithms to follow for case management of Varicella as well as guidelines for individual points in the algorithms.

Definitions:

<i>Case Coordination in community</i>	Professional that provides coordination of care, i.e. Home Care Case Coordinator, Community Mental Health Coordinator.
<i>Client</i>	Individual receiving care in a community setting.
<i>Health Care Worker (HCW)</i>	An individual who provides direct care to clients and who may have the potential to acquire or transmit an infectious agent during the course of his or her work in the health care workplace, i.e. nurses, home care attendants, home support workers, family first home visitors, mental health proctors, rehab assistants and emergency responders.
<i>INM</i>	An Injury/Near Miss intake process.
<i>Non-occupational exposure</i>	Varicella acquired from own personal contact, i.e. child.
<i>Occupational exposure</i>	Varicella acquired from duties of work. Determination of this contact shall be done in consultation with OESH.
<i>OESH</i>	Occupational and Environmental Safety & Health



Varicella

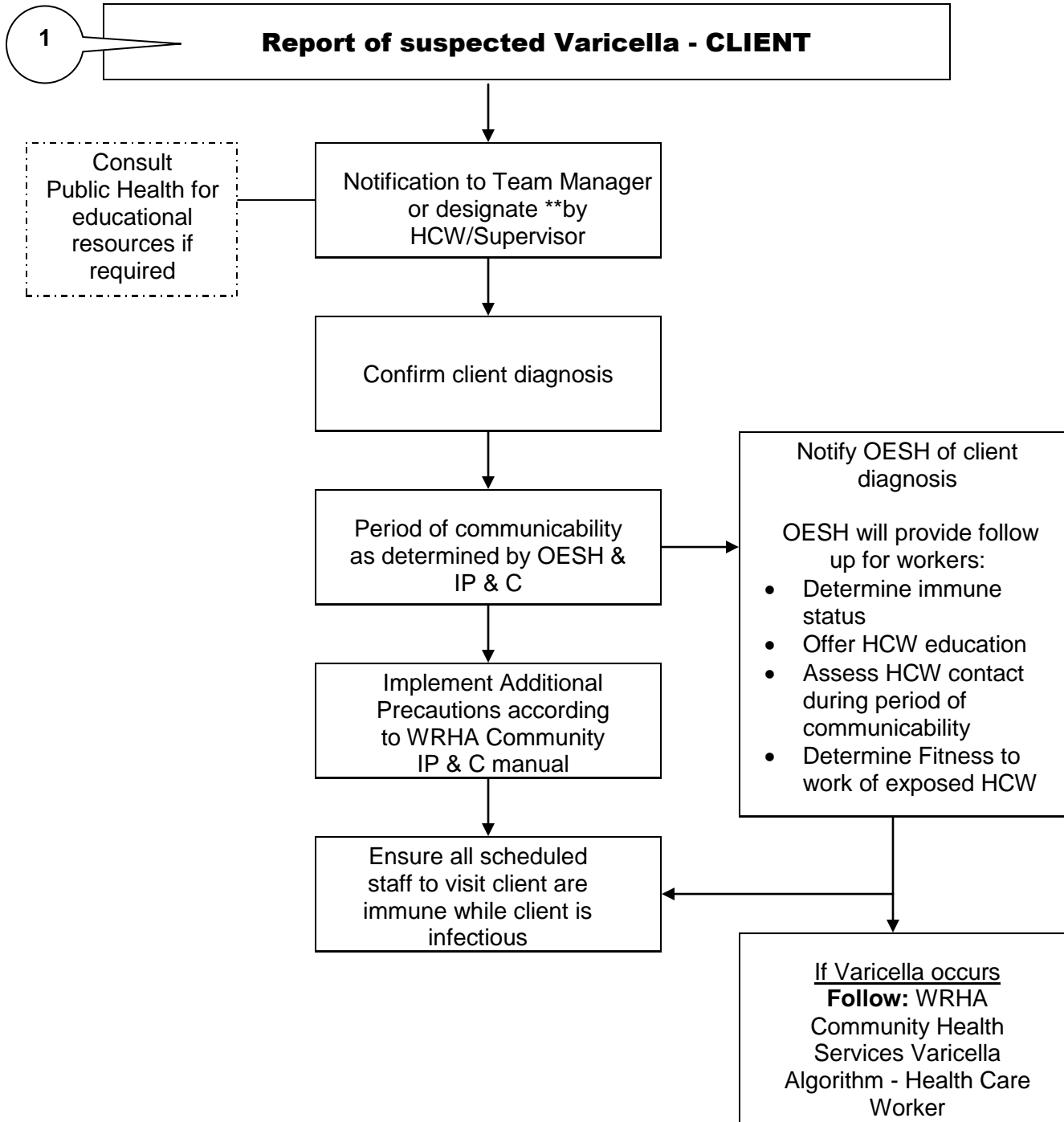
Primary infection with Varicella-Zoster Virus (VZV) results in Chickenpox infection. The virus then remains latent and persists in the sensory ganglia.

Varicella outbreak

Two cases of Varicella with evidence of transmission to other individuals.



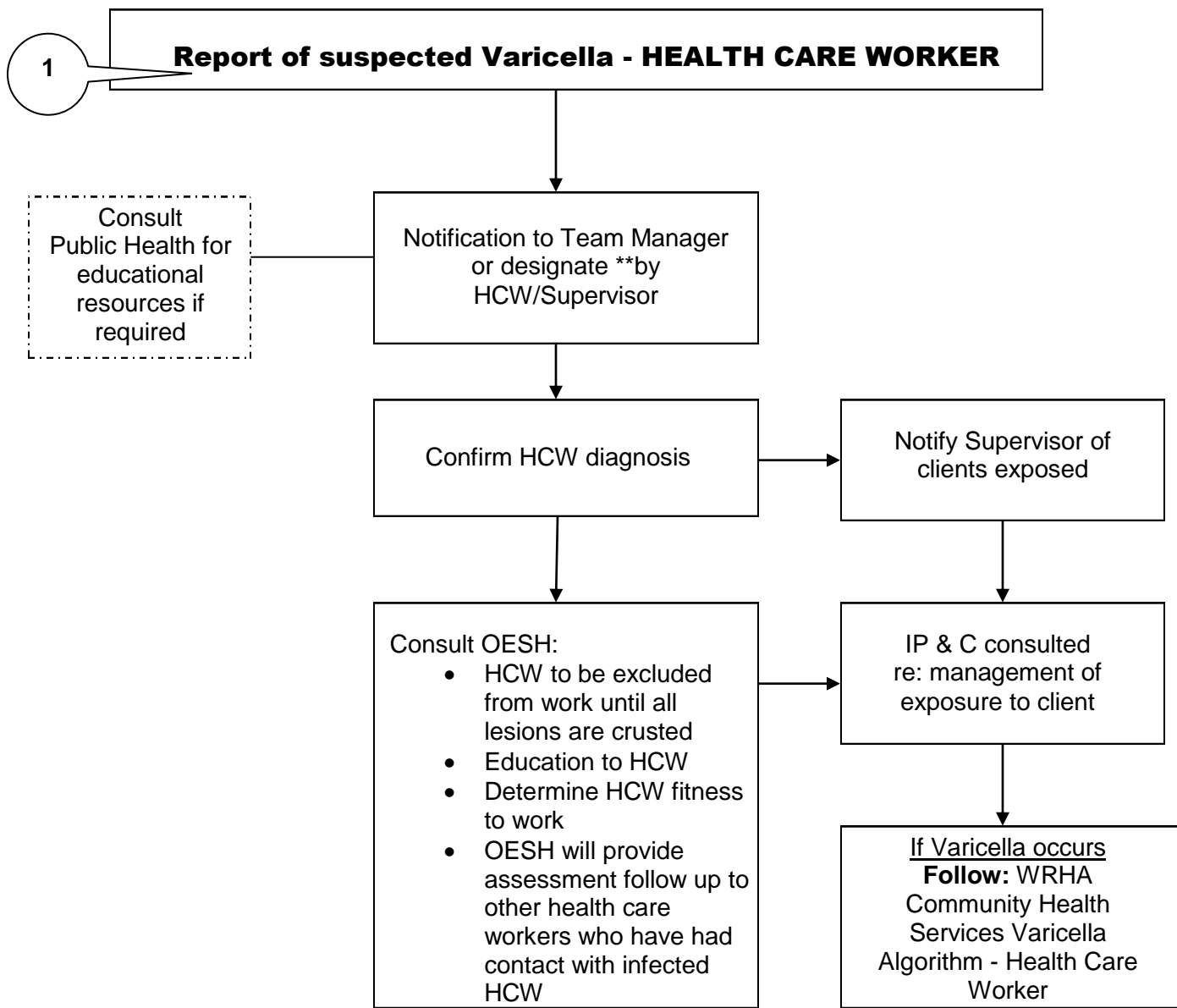
WRHA Community Health Services VARICELLA ALGORITHM - CLIENT



**Team Manager or designate may wish to contact WRHA Community Infection Prevention & Control Professional for resource on management of a case in a client and the Occupational & Environmental Safety & Health (OESH) for resource on management of a case in a health care



WRHA Community Health Services VARICELLA ALGORITHM – HEALTH CARE WORKER



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Facts about Varicella:

SIGNS & SYMPTOMS:

- A mild prodrome may precede the onset of rash.
- Adults may have 1-2 days of fever and malaise prior to rash onset.
- In children the rash often appears as the first sign of the disease.
- The rash usually appears as a single lesion first on the head, neck or shoulders
- The rash appears on the trunk and then the extremities as the infection progresses.
- The rash is generalized, vesicular and itchy and develops in “crops” of lesions.
- Lesions heal progressively from eruption, to development of a vesicle, to a draining vesicle and then a crusted lesion which may heal without scarring.
- Lesions can also occur on mucous membranes of the oropharynx, respiratory tract, vagina, anus, conjunctiva, and the cornea.
- Adults may have more severe disease and a higher incidence of complications.

TRANSMISSION:

- Varicella is highly contagious.
- The mode of transmission is by direct contact, droplet or airborne spread from vesicle fluid (Chicken Pox or Zoster vesicles) or secretions from the respiratory tract of infected people.
- Indirect contact can occur through articles freshly soiled by discharges from vesicles and mucous membranes of infected people.
- Scabs from Varicella lesions are not infective.

INCUBATION PERIOD:

- The incubation period is usually 14 -16 days, with a range of 10 - 21 days after last exposure.
- The incubation period may be prolonged in immunocompromised patients due to the delayed hypersensitivity of cell mediated immunity.
- Additionally, it may be prolonged up to 28 days for those who have received post-exposure treatment with Varicella-Zoster Immune Globulin (VariZIG).
- Varicella infection can develop between 1 and 16 days of life in infants born to mothers with active Varicella; the usual interval from onset of rash in a mother to onset in her neonate is 9 to 15 days.

COMMUNICABILITY PERIOD:

- The period of communicability extends from 1 to 2 days before the onset of rash until all lesions have crusted and no new lesions are forming.



Overall Management of Exposure

- Prophylaxis with Varicella Zoster Immune Globulin (VariZIG) is indicated for susceptible **exposed** individuals whose immune systems are either too young or weak to fight the disease. When indicated, VariZIG should be given within 96 hours of exposure. VariZIG does not always prevent the disease from occurring in susceptible exposed contacts.
- In workplace exposures, it is unlikely that VariZIG would be indicated for healthy susceptible exposed workers. In situations where VariZIG is being considered for workers who are immunocompromised, consultation with the individual's primary care provider is recommended.
- A susceptible contact is someone who has not had previous Varicella disease or Varicella vaccination. This can be confirmed by:
 - a. Previous primary care provider confirmed Varicella.
 - b. Previous lab confirmed Varicella (culture, PCR, immune serology).
 - c. Clear history of Varicella illness from the child's parents, or from the adolescent/adult, including any possible evidence of identifiable chickenpox lesion scars.
 - d. Documentation of two doses of Varicella vaccine given at least one month apart.

Management of Exposure

- See WRHA Community Health Services Varicella Algorithm - Client

Management of Exposure of a Health Care Worker

- See WRHA Community Health Services Varicella Algorithm - Health Care Worker

A HEALTH CARE WORKER EXPOSED TO CHICKEN POX:

- Determine Health Care Workers' immune status.
- Consider immune if...
 - History of Varicella or Herpes Zoster, or
 - Primary care provider/parent diagnosed illness, or
 - Documentation of two doses of Varicella vaccine given one month apart, or
 - Varicella immune titer.
- Exposed susceptible Health Care Workers shall contact OESH for clinical management which will include assessment, counseling and a plan of action such as quarantine/exclusion from work and possibly from the workplace, from day 8 after first exposure to day 21 after last exposure.
- Susceptible pregnant or immunocompromised Health Care Workers shall be referred by OESH to a family primary care provider, specialist or walk-in clinic for clinical management.
- Exposed susceptible Health Care Workers shall be excluded from work and possibly from the workplace from day 8 after first exposure or until the development and resolution of post-exposure Chickenpox infection in the worker.

A HEALTH CARE WORKER SYMPTOMATIC OR INFECTED WITH CHICKENPOX:

- Must have a primary care provider confirm diagnosis and be seen by primary care provider for any treatment necessary which may include antiviral medication depending on the time since onset of infection, related medical history and tolerance of therapy.
- Call OESH as soon as possible so OESH can inform Infection Prevention & Control if individual has a confirmed case of Chickenpox and had contact with community clients.



- Health Care Workers shall be referred to OESH for assessment, counseling and a plan of action even if they were initially seen by a private primary care provider. If OESH offices are closed, the worker should call OESH at the earliest opportunity to initiate follow-up and receive counseling and instruction regarding quarantine and return-to-work issues/dates.
- Health Care Workers shall be excluded from work where clients are present until all lesions are dry and crusted and no new lesions are forming.

POST VARICELLA IMMUNIZATION RASH:

- If a post Varicella immunization rash or lesions develop, OESH must assess Health Care Workers regarding their infectivity to determine possible exclusion from work.
- Assessment must include the appearance of the rash/lesions, location i.e. under clothes, distribution, symptoms of illness etc.
- Individuals working with immunocompromised clients, as defined in IP & C Manual are to be restricted from working with these clients until lesions are dry and crusted and no new lesions are forming and must be evaluated by an OHN prior to returning to work in these areas.
- An employee with post Varicella vaccine rash/lesions that appear localized at the site of immunization can in most cases remain at work, with the lesions well covered with an occlusive dressing and clothing. This worker's case can be managed in the same manner as a case of localized Herpes Zoster.

Treatment:

- Treatment must be prescribed by a primary care provider.

Infection Prevention and Control Practices:

Chickenpox Active Infection

- Implement Airborne and Contact Precautions for a client with Chickenpox.
- Refer to the Clinical Presentation/Microorganism/Infectious Disease Table in the WRHA Infection Prevention & Control Manual for specific disease/microorganism information.
- Refer to Airborne/Contact Precautions in the Additional Precautions section. Implement Airborne Precautions from 8 days after first contact until 21 days after last contact with rash (28 days if given VariZIG) for a susceptible person who has had contact to Chickenpox.
- Refer to the Clinical Presentation/ Microorganism/Infectious Disease Table in the WRHA Infection Prevention & Control Manual for specific disease/microorganisms information.
- Refer to Airborne Precautions in the Additional Precautions section.

Communication

- Communication with and education of clients, family, caregivers is essential to reduce anxiety and stop the spread of Varicella.



EDUCATION RESOURCE MATERIALS:

References

Center for Disease Control, *Pink book*, 10th edn, (updated March 2008), @
<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/varicella.pdf>

Cadham Provincial Laboratory, *Guide to Services* (2005) revised 2008, found @
<http://www.gov.mb.ca/health/publichealth/cpl/manual2005.pdf>

Manitoba Health – Communicable Disease Management Protocol/ Varicella/Herpes Zoster
<http://www.gov.mb.ca/health/publichealth/cdc/protocol/varicella.pdf>

American Academy of Pediatrics, *Redbook*, 27th edn. (2006)

WRHA Hospital Infection Prevention & Control Manual (2006)

Canadian Immunization Guide, (2006) 7th edn. Public Health Agency of Canada, pp327-342.

CCDR, *Infection Control Guidelines, Prevention and Control of Occupational Infections in Health Care*, Health Canada, (March 2002) Vol. 28S1.

Heymann, David L., *Control of Communicable Diseases Manual* 18th Edition, 2008

MHHL Protocol



2. Zoster (Shingles) Protocol in WRHA Community Health Services Clients & Staff

Preamble:

These algorithms and guidelines were developed to assist Community Health Care personnel in managing Zoster (Shingles) in the community. A single case of Zoster (Shingles) can be managed with the assistance of these resources and these algorithms contain a suggested strategy in determining the process and individuals involved in case management. Zoster (Shingles) does not have to be reported to Public Health; however an outbreak of Zoster (Shingles) is reportable under the Public Health Act. Public Health is available for consultation in both instances.

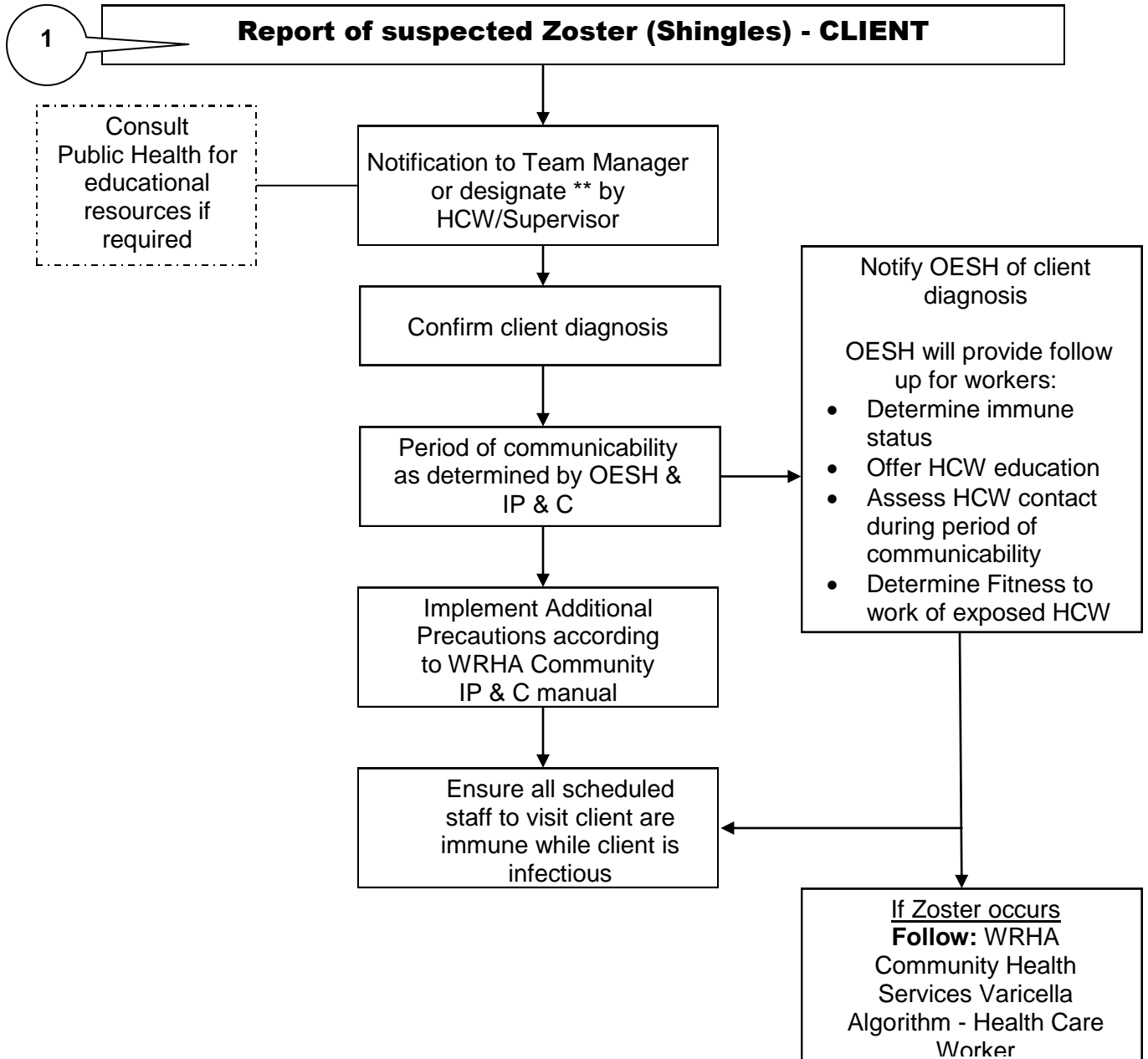
The following are algorithms to follow for case management of Zoster (Shingles) as well as guidelines for individual points in the algorithms.

Definitions:

<i>Case Coordination in community</i>	Professional that provides coordination of care, i.e. Home Care Case Coordinator, Community Mental Health Coordinator.
<i>Client</i>	The individual receiving care in a community setting.
<i>Health Care Worker (HCW)</i>	An individual who provides direct care to clients and who may have the potential to acquire or transmit an infectious agent during the course of his or her work in the health care workplace, i.e. nurses, home care attendants, home support workers, family first home visitors, mental health proctors, rehab assistants and emergency responders.
<i>INM</i>	Injury/Near Miss intake process
<i>Non-occupational exposure</i>	Acquired from own personal contact, i.e. child
<i>Occupational exposure</i>	Acquired from duties of work. Determination of this contact shall be done in consultation with OESH
<i>OESH</i>	Occupational and Environmental Safety & Health
<i>Zoster</i>	A reactivation of the original Varicella (Chickenpox) infection results in Zoster (Shingles). A second episode of Varicella (Chickenpox) rarely occurs
<i>Outbreak</i>	Two cases of Varicella with evidence of transmission to other individuals.



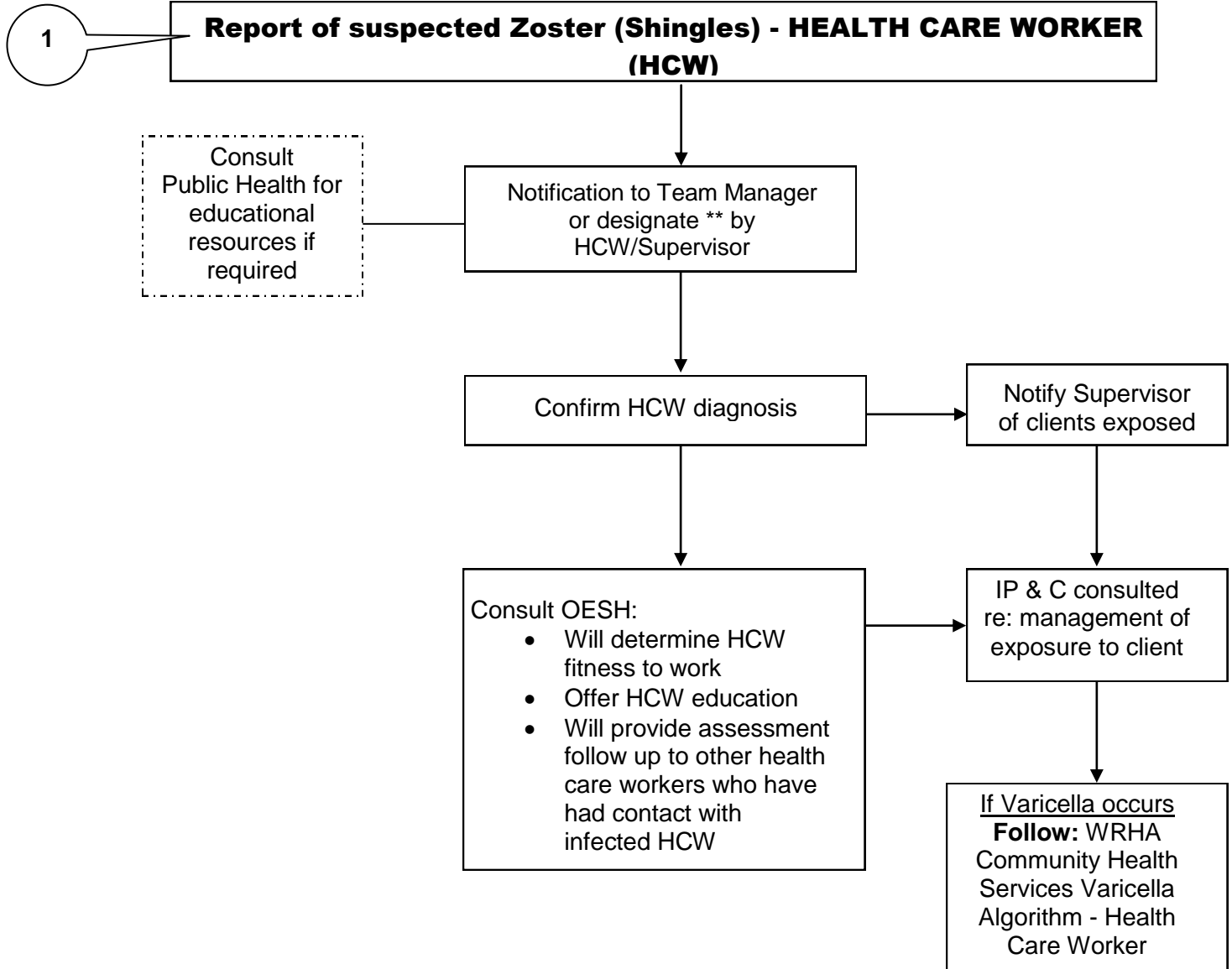
WRHA Community Health Services ZOSTER (SHINGLES) ALGORITHM - CLIENT



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WRHA Community Health Services ZOSTER (SHINGLES) ALGORITHM – HEALTH CARE WORKER



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Facts about Zoster (Shingles):

SIGNS & SYMPTOMS:

- Localized Zoster:
 - Vesicles appearing along a single or associated group of nerve roots.
 - The lesions appear in crops in a cluster or in an irregular fashion along the path of the nerve root.
- Disseminated Zoster:
 - Vesicles appearing along more than one nerve root with lesions appearing outside the primary nerve root.
 - The rash is generally more severe and prolonged and is thought to usually involve development of lesions on the mucous membranes such as throat, lungs, etc.
 - Immunocompromised patients may have an increased frequency of episodes of disseminated Zoster.

TRANSMISSION:

- Non-immune persons, or those who have never had primary Varicella Zoster (Chickenpox), may develop primary infection (chickenpox) from contact with Localized Zoster (Shingles). In immunocompromised patients with Localized or Disseminated Zoster and any patient with Disseminated Zoster, transmission occurs by airborne spread and from direct or indirect contact with draining Zoster lesions.

INCUBATION PERIOD:

- There is no incubation period for Herpes Zoster (Shingles).
- Some studies suggest that the development of Shingles may appear earlier in life for those individuals who experienced their chickenpox infection early in life.
- The incubation period for an individual who is susceptible to chickenpox to possibly develop chickenpox following contact with Herpes Zoster infection is 10 – 21 days following exposure.

COMMUNICABILITY PERIOD:

- The period of communicability extends from 1 to 2 days before the onset of rash until all lesions have crusted and no lesions are forming.

Management of Exposure of a Health Care Worker

- See WRHA Community Health Services Zoster (Shingles) Algorithm – Health Care Worker

A HEALTH CARE WORKER SYMPTOMATIC OR INFECTED WITH ZOSTER (SHINGLES):

- Must have a primary care provider confirmed diagnosis.
- Call OESH as soon as possible so OESH can inform Infection Prevention & Control if individual has a confirmed case of Zoster (Shingles) and if they had contact with clients.
- If OESH offices are closed, the worker should call OESH at the earliest opportunity to initiate follow-up.
- Health Care Workers shall be referred to OESH, even if they were initially seen by a private physician for clinical management (including documentation of type of Zoster (Shingles), counseling regarding eligibility to remain at work, Routine Practices



education, need for dressing Localized Zoster lesions located under clothing with occlusive dressings, instruction regarding avoiding touching, rubbing or scratching the area and ensuring lesions are dry and crusted before discontinuing the use of impervious dressing under the clothing.

- Health Care Workers shall be excluded from work if unable to cover localized lesions with occlusive dressing and clothing.
- If Disseminated Zoster, Health Care Workers shall be excluded from work and possibly from the workplace until all lesions have dried and crusted and no new lesions are forming. Consider the occupational health management of an individual with Disseminated Zoster the same as for an individual with chickenpox infection.

Management of Exposure to Client:

- See WRHA Community Health Services Zoster (Shingles) Algorithm – Client

Treatment of Zoster (Shingles):

- Treatment must be prescribed by a primary care provider.

Infection Prevention and Control Practices:

Disseminated Implement

- Airborne and Contact Precautions for a patient with disseminated Shingles.
- Refer to the Clinical Presentation/Microorganism/Infectious Disease Table for specific disease/microorganism information.
- Refer to Airborne/Contact Precautions in the Additional Precautions section

Localized in the Immunocompromised Host Implement

- Airborne and Contact Precautions for a patient with Shingles localized in the immunocompromised host.
- Refer to the Clinical Presentation/ Microorganism/Infectious Disease Table for specific disease/microorganism information.
- Refer to Airborne/Contact Precautions in the Additional Precautions section

Communication:

- Communication with and education of clients, family, caregivers is essential to reduce anxiety and stop the spread of Zoster (Shingles).

EDUCATION RESOURCE MATERIALS:

References

Center for Disease Control, *Pink book*, 10th edn, (updated March 2008), @ <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/varicella.pdf>

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MHHL Protocol