

Infection Prevention And Control

Varicella (Chickenpox - *Varicella Zoster* and Shingles - *Herpes Zoster*) Policy

This is a controlled document designed primarily for electronic use. It should be noted that printed copies may no longer be valid.

Please visit the NHS Lothian Infection Prevention & Control website to ensure any printed documents, forms or leaflets are up to date.

Unique ID:	NHSL.	Category/Level/Type:	Guidance
Version:	1.0	Status:	Approved
Date of Authorisation:	21.10.16	Authorised by:	Infection Control Committee
Date of Publication:	18 November 2016	Review Date:	October 2018

Consultation and Distribution Record	
Contributing Author(s):	Infection Prevention and Control Nurse
Consultation Stakeholders:	Consultant Clinical Scientist
Distribution:	NHS Lothian intranet NHS Lothian internet

Document History			
Date	Author	Change	Version No.
24/03/16	IPC Nurse	Combination of existing policies for Chicken pox and Shingles into a single policy.	0.1-0.3
21/10/16		Approved with amendments by the NHS Lothian Infection Control Committee.	1.0

Contents

CONSULTATION AND DISTRIBUTION RECORD	2
DOCUMENT HISTORY	2
1. INTRODUCTION	4
2. AIM OF THE GUIDANCE	4
3. KEY OBJECTIVES	4
4. GUIDANCE SCOPE	4
5. IDENTIFICATION, CARE AND MANAGEMENT OF A PATIENT WITH CHICKENPOX (VARICELLA/VZV) & SHINGLES (HZV)	4
5.1 Overview - Chickenpox	4
5.1.1 Case Definitions – Chickenpox.....	6
5.2 Overview - Shingles/Herpes Zoster (HZV)	6
5.2.1 Case Definitions - Shingles.....	7
5.3 Risk Assessment & Diagnosis	8
5.3.1 Isolation	8
5.3.2 Patient Transfer	8
5.3.3 Management of individuals following significant exposure.....	8
5.4 Pregnancy, Neonates & Infant	9
5.5 VZIG management in immunosuppressed patients	10
5.6 Decision making aid for prescribing ZVIG Prophylaxis	11
QUICK REFERENCE GUIDE: CHICKENPOX	12
QUICK REFERENCE GUIDE: SHINGLES	13
REFERENCES & FURTHER READING	14

1. Introduction

This policy aims to provide information for the safe management of patients within hospital settings and long term continuing care establishments covered by NHS Lothian of clinically suspected and/or laboratory confirmed cases of Varicella- Zoster/Herpes Zoster.

This policy should be read in conjunction with Health Protection Scotland National Infection Prevention and Control Manual

2. Aim of the guidance

To ensure Healthcare Workers (HCWs) are aware of the actions and precautions necessary to minimise the risk of cross infection, protecting patients as well as staff.

To emphasise the importance of diagnosing patients' clinical conditions promptly and manage the patients, staff, visitors appropriately

Action should not be delayed until the results of laboratory testing are available.

3. Key objectives

- To ensure consistency across NHS Lothian
- Minimise the risk of cross infection
- To describe best practice
- To ensure safety
- To minimise adverse events

4. Guidance scope

This policy is designed to safeguard patients and staff working within NHS Lothian from the risk of Influenza.

This policy applies to all staff employed by NHS Lothian, locum staff on fixed term contracts and volunteer staff.

5. Identification, Care and Management of a Patient with chickenpox (Varicella/VZV) & Shingles (HZV)

5.1 Overview - Chickenpox

Chickenpox is an acute, infectious disease caused by the varicella-zoster virus (VZV) and is most commonly seen in children under 10 years old. This virus can also cause [shingles \(herpes zoster\)](#) which tends to be more common in adults. The disease can be more serious in adults, particularly pregnant women.

Table 1: Summary Overview

Causative Organism	Chickenpox/varicella-zoster virus (VZV)
Clinical Manifestation	<p>May initially begin with cold-like symptoms</p> <ul style="list-style-type: none"> • Raised temperature • Intensely itchy vesicular rash. Clusters of vesicular (blisters) spots appear over 3-5 days, which start on the face and scalp, spread to the trunk, abdomen and limbs. • It is possible to be infected but show no symptoms. • Diagnosis can usually be reliably made on physical examination; swabs/specimens are not usually required.
Incubation Period	10 – 21 days
Period of Infectivity	Chickenpox is infectious from 1–2 days before the rash appears until the vesicles (blisters) are dry or have crusted over, usually 5–6 days after the onset of the illness. This may be prolonged in immunosuppressed patients
Mode of Transmission	<ul style="list-style-type: none"> • Direct contact with an infected person, • Droplet or aerosol spread from vesicular fluid from skin lesions. • Secretions from the respiratory tract (the virus enters the individual through the upper respiratory tract). • Indirectly via contaminated articles e.g. clothing / bedding.
Reservoirs	Human
Population at Risk	<ul style="list-style-type: none"> • Varicella is very infectious; up to 90% of susceptible contacts develop the disease. • Adolescents and adults, In healthy children the illness is usually mild with no complications. • Non immune pregnant women and their baby • Neonates whose mothers who develop chickenpox in the period 7 days before and 7 days after birth • Neonates born to non immune mothers who have been exposed to chickenpox or shingles in the first month of the baby's life. • Immunocompromised patients with leukaemia, cancer patients, transplant patients, immunosuppressed patients and pregnant women may suffer severe, prolonged or even fatal chickenpox.
Vaccine Preventable	Yes – vaccination not offered as part of childhood vaccination programme
Notifiable Disease	No

5.1.1 Case Definitions – Chickenpox

Table 2: Case definitions Chickenpox

Confirmed case	<p>Most cases, the diagnosis can be made clinically from the characteristic chickenpox rash. If there is doubt, a history of recent exposure to varicella (or herpes zoster), or cases occurring in close contacts, may help confirm the diagnosis.</p> <p>Investigations:</p> <p>Laboratory tests can be used for confirmation but are rarely required. If confirmation is needed in pregnant women, varicella can be detected by virus, antigen, or DNA detection in vesicle fluid.</p>
Probable case	<p>Contact with chickenpox</p> <p>Significant exposure shall be deemed to have occurred in the following circumstances, if within 2 days pre or 5 days post rash/vesicle appearance:</p> <ul style="list-style-type: none"> • Maternal/neonatal and continuous home contact. • Contact in the same room (e.g. a classroom or 4 bed hospital bay) for a 15 minutes or more. • Direct face-to-face contact (e.g. a conversation). • Open ward exposure (airborne transmission at a distance has occasionally been reported) high-risk contacts, especially children should be considered for prophylaxis.

5.2 Overview - Shingles/Herpes Zoster (HZV)

Previous infection with chickenpox is necessary before a person can develop Shingles/Herpes Zoster (HZV). It appears following reactivation of chickenpox virus which lies dormant in dorsal root ganglia (spinal nerve tissue) – often for decades. Diagnosis can usually be reliably made on physical examination; swabs/specimens are not usually required.

Table 3: Summary Overview – Shingles/Herpes Zoster

Causative Organism	Shingles/Herpes Zoster (HZV)
Clinical Manifestation	Pain in the area of the affected nerve is often the first symptom followed by a dermatomal (one sided) rash of fluid filled vesicles (blisters).
Period of Infectivity	Until all the lesions have dried/crusted.

Mode of Transmission	Direct contact with the fluid from the vesicles.
Groups susceptible to shingles	Individuals who have had chickenpox previously may develop shingles at any time in their lives although it does seem to be associated with older age and conditions which suppress the immune system.
Definition of a significant exposure to shingles	Direct contact with fluid from the rash blisters is required to infect a person who is not immune to chickenpox (see mode of transmission)
Management of patients exposed to shingles	<p>Patients who have had significant contact with a person who has shingles should be assessed by a clinician to determine the risk they may have of contracting chickenpox.</p> <ul style="list-style-type: none"> • Varicella vaccine may be appropriate. Information on prophylaxis can be found in The Green Book: chapter28a • Advice may be sought from a Consultant Microbiologist if required. • If cross infection occurs, the Infection Control team should be informed as soon as possible.
Vaccine Preventable	Yes. In 2013 a vaccination programme for those of 70 years of age began, in conjunction with a catch up programme.
Treatment	<p>Shingles can be effectively treated with oral antiviral drugs; systemic antiviral treatment can reduce the severity and duration of pain, reduce complications, and reduce viral shedding.</p> <ul style="list-style-type: none"> • Treatment should be started within 72 hours of the onset of rash and is usually continued for 7–10 days, see The Green Book: chapter28a • Immunocompromised patients at high risk of disseminated or severe infection should be treated with a parenteral antiviral drug. See sections 7 & 8 for guidance regarding prophylaxis with Varicella Zoster immunoglobulin (VZIG) and antivirals in asymptomatic individuals at higher risk of developing severe disease
Notifiable disease	No

5.2.1 Case Definitions - Shingles

Table 4: Case definition Shingles/Herpes Zoster (HZV)

Confirmed Case	Previous history of Chickenpox. Dermatomal rash of fluid filled vesicle, confirmed laboratory result.
Probable Case	Presentation of the rash

5.3 Risk Assessment & Diagnosis

5.3.1 Isolation

- Patients with Chickenpox/Shingles must be nursed in a side room with appropriate transmission based precautions in place until all spots/vesicles have dried and crusted, and no new crops have appeared for patients with Chickenpox. A risk assessment must be undertaken by the Nurse in Charge of the ward to establish clinical priority for allocation of a side room.
- Patients who are immunocompromised may require a longer period of isolation.
- Patients can be discharged to their own homes if medically fit. They should be advised to avoid contact with non-immune people until their lesions are dried and crusted.
- Patients with shingles can be discharged home if medically fit, they may not necessarily be required to stay off work e.g. if the rash can be covered with dressings or clothing, and they can comply with strict hand hygiene advice and are not working with people at high risk of contracting chickenpox.
- Clinical staff diagnosed with symptoms of shingles or chickenpox must contact Occupational Health for advice on continuing to work.

5.3.2 Patient Transfer

- Patients diagnosed with Shingles or Chicken Pox should not be identified as an outlier to other clinical areas. If they require transfer due to their clinical condition the receiving area must be informed of their infection status and they must be transferred into a side room.

5.3.3 Management of individuals following significant exposure

Patients identified as high risk of developing serious complications from Chickenpox or shingles need to be risk assessed as they may need antiviral drugs and or prophylactic immunoglobulin (VZIG), this should be done in liaison with the Consultant Virologist/Microbiologist. This may prevent the patient developing severe illness. Patients in this group include:

- Immunocompromised patients
- Pregnant woman (pregnant staff members should not care for patients with Chickenpox unless they know their immune status).

VZIG should be considered a treatment within 10 days of exposure therefore this is not a clinical emergency out of hours.

The purpose of post exposure management is to protect the high risk individual from developing severe chickenpox and reduce the risk of transmission to others.

VZIG is a blood product therefore the nature of this preventative treatment **MUST** be discussed with the patient by their Consultant prior to prescription. The patient may then give either verbal consent or refuse, the final decision must be clearly documented by the medical staff in the patient's notes.

Further treatment information is available in the Green Book: Chapter 28a and Chapter 34 and the British National Formulary

5.4 Pregnancy, Neonates & Infant

Management of a pregnant woman exposed to chickenpox or shingles should be discussed with an Obstetrician and/ or midwife, who will contact the Virologist and, if appropriate, arrange for the booking blood to be tested.

The management of neonates or infants should be decided by a Paediatrician, in conjunction with a Virologist.

Varicella–zoster immunoglobulin (VZIG) is recommended for individuals who have been exposed:

- who are at increased risk of severe chickenpox, **and**
- who have no antibodies to varicella–zoster virus (VZV), **and**
- who have had significant exposure to chickenpox or herpes zoster.

However it should be noted that chickenpox can still develop in infants who have received VZIG.

Table 5: Management with VZIG

Patients at increased risk	Management with VZIG
Neonates whose mothers develop chickenpox rash in the period 7 days before to 7 days after delivery.	Prophylactic treatment with VZIG recommended.
Susceptible neonates exposed in the first 7 days of life.	Prophylactic treatment with VZIG recommended.
Neonates born to non immune mothers, exposed within the first month of life.	The maximum benefit of VZIG occurs if given within the first 7 days of life with rapidly decreasing effect thereafter. The release of VZIG requires the approval of a Consultant Microbiologist based on a negative VZV IgG from the mother (VZIG request forms should be obtained from Pharmacy).
Non immune women exposed at any stage of pregnancy	Prophylactic treatment with VZIG recommended.
Babies born to immune mothers but who are being discharged home where a household member has	Consider Prophylactic treatment with VZIG.

chickenpox or shingles.	
Babies born at <28 weeks gestation or <1kg in weight when exposed to chickenpox/shingles	VZIG recommended regardless of maternal immunity / VZV antibody status. If the infant then develops chickenpox infection, antiviral treatment guidance can be found in the British National Formulary
Infants aged less than 1 month with a positive maternal history of varicella and/or positive maternal antibody result	Not required
Infants whose mothers develop shingles before or after delivery.	Not required

Maternal antibody in the baby starts to wane after 2 months of age.

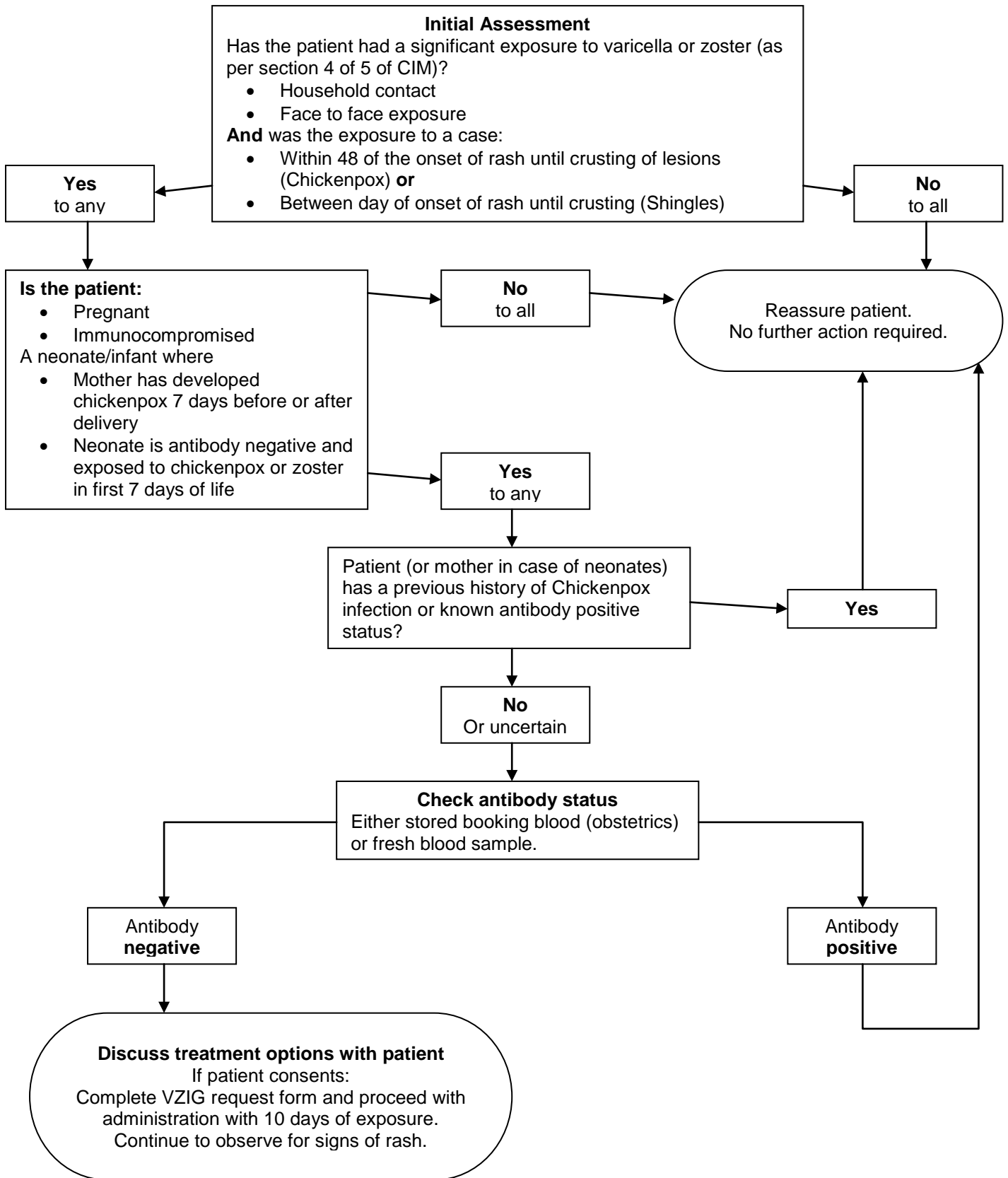
5.5 VZIG management in immunosuppressed patients

Whenever possible, immunosuppressed patients exposed to chickenpox / shingles should be tested irrespective of their history of chickenpox.

However, VZIG administration should not be delayed past seven days after initial contact while an antibody test is done. Under these circumstances, VZIG should be given on the basis of a negative history of chickenpox. If the patient has a positive history of chickenpox, wait for the antibody results. Those with a positive history in whom VZ antibody is not detected by a sensitive assay should be given VZIG.

VZIG is not indicated in immunosuppressed contacts with detectable antibody as the amount of antibody provided by VZIG will not significantly increase VZ antibody titres in those who are already positive.

5.6 Decision making aid for prescribing ZVIG Prophylaxis



Quick Reference Guide: Chickenpox

Table 6: Quick reference Guide

Organism:	Chickenpox/VZV
Signs & symptoms:	<ul style="list-style-type: none"> • Pain in the area of the affected nerve is often the first symptom followed by a dermatomal (one sided) rash of fluid filled vesicles (blisters). • Diagnosis can usually be reliably made on physical examination; swabs/specimens are not usually required.
Transmission (spread):	<ul style="list-style-type: none"> • Direct contact with an infected person, • Droplet or aerosol spread from vesicular fluid from skin lesions. • Secretions from the respiratory tract (the virus enters the individual through the upper respiratory tract).
Person to person spread possible?	Yes
Incubation period:	10 – 21 days
People most at risk:	<ul style="list-style-type: none"> • Adolescents and adults • Non immune pregnant women and their baby • Neonates whose mothers who develop chickenpox in the period 7 days before and 7 days after birth • Neonates born to non immune mothers who have been exposed to chickenpox or shingles in the first month of the baby's life. • Immunocompromised patients
Treatment:	<ul style="list-style-type: none"> • Antiviral treatment started within 24 hours of the onset of rash may reduce the duration and severity of symptoms in otherwise healthy adults and adolescents. • Immunocompromised individuals will also certainly benefit from treatment with IV acyclovir.
Key management & control measures (MUST DO'S):	<ul style="list-style-type: none"> • The patient should be nursed in a single side room (for chickenpox a negative pressure room should be used if available) until all the vesicles have dried. • Patients should only be cared for by staff who are immune to chickenpox. • Linen should be treated as infected. • The patient should be allocated their own equipment which should not be shared with other patients. • Hand hygiene with soap and water or alcohol gel.

Quick reference guide: Shingles

Table 7: Quick reference Guide Shingles/Herpes Zoster

Organism:	Shingles - Herpes Zoster
Signs & symptoms:	<ul style="list-style-type: none"> • Raised temperature • Intensely itchy vesicular rash. Clusters of vesicular (blisters) spots appear over 3-5 days, which start on the face and scalp, spread to the trunk, abdomen and limbs. • It is possible to be infected but show no symptoms. • Diagnosis can usually be reliably made on physical examination
Transmission (spread):	<ul style="list-style-type: none"> • Direct contact with an infected person, • Droplet or aerosol spread from vesicular fluid from skin lesions. • Secretions from the respiratory tract (the virus enters the individual through the upper respiratory tract). • Direct contact with the fluid from the vesicles which is then transferred to the mucous membranes of a non immune individual, usually via the hands
Person to person spread possible?	Yes
People most at risk:	Imunocompromised patients Individuals who have had chickenpox previously may develop shingles at any time in their lives although it does seem to be associated with older age and conditions which suppress the immune system.
Treatment:	<p>Shingles can be effectively treated with oral antiviral drugs; systemic antiviral treatment can reduce the severity and duration of pain, reduce complications, and reduce viral shedding.</p> <ul style="list-style-type: none"> • Treatment should be started within 72 hours of the onset of rash and is usually continued for 7–10 days, see The Green Book: chapter28a • Immunocompromised patients at high risk of disseminated or severe infection should be treated with a parenteral antiviral drug. See sections 7 & 8 for guidance regarding prophylaxis with Varicella Zoster immunoglobulin (VZIG) and antivirals in asymptomatic individuals at higher risk of developing severe disease
Key management & control measures (MUST DO'S):	Patients do not need to be in a single room unless they are being nursed in a 'high-risk' area or paediatric ward. If it is thought the patient cannot comply with basic hygiene measures, isolation may be required. In this case contact the IPCT for assistance

References & Further Reading

British National Formulary (Feb 2016) (available at)

<https://www.evidence.nhs.uk/formulary/bnf/current/14-immunological-products-and-vaccines/145-immunoglobulins/1452-disease-specific-immunoglobulins/varicellazoster>

Centers for Disease Control and Prevention: Chickenpox (available at)

<http://www.cdc.gov/chickenpox/>

Centers for Disease Control and Prevention: Shingles (available at)

<http://www.cdc.gov/shingles/index.html>

Health Protection Agency: Chickenpox (available at)

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ChickenpoxVaricellaZoster/GeneralInformation/>

Health Protection Agency: Shingles (available at)

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Shingles/GeneralInformationShingles/>

Health Protection Scotland (2012) Infection Prevention and Control Manual for Scotland (available at)

<http://www.documents.hps.scot.nhs.uk/hai/infection-control/ic-manual/ipcm-p-v2-3.pdf>

NHS GGC (2009) Chickenpox Policy (available at)

<http://library.nhsggc.org.uk/mediaAssets/Infection%20Control/Chickenpox%20Policy%20-%202011.01.10.pdf>

NHS GGC (2011) Shingles Policy (available at)

<http://library.nhsggc.org.uk/mediaAssets/Infection%20Control/26.07.11%20-%20Shingles%20V3.pdf>

Public Health England (2013) The Green Book Chapter 28 Shingles (available at)

<https://www.gov.uk/government/publications/shingles-herpes-zoster-the-green-book-chapter-28a>

Public Health England (2013) The Green Book Chapter 34 Varicella (available at)

<https://www.gov.uk/government/publications/varicella-the-green-book-chapter-34>