

Last Time Saved: 2/15/12 11:19 AM  
Document Name: QEN-2970v3.indd

PMS Black

#### Phlebitis

Inflammation at the injection site has been reported.

#### Miscellaneous

In frequently, patients have been reported to have had anaphylaxis, drug fever, nausea, chills, eosinophilia, rashes (including exfoliative dermatitis), linear IgA bullous dermatosis, Stevens-Johnson syndrome, toxic epidermal necrolysis, and vasculitis in association with the administration of vancomycin.

Chemical peritonitis has been reported following intraperitoneal administration of vancomycin (see **PRECAUTIONS**).

#### Post Marketing Reports

The following adverse reactions have been identified during post-approval use of vancomycin. Because these reactions are reported voluntarily from a population of uncertain size, it is not possible to reliably estimate their frequency or establish a causal relationship to the drug exposure.

#### Skin and Subcutaneous Tissue Disorders

Drug Rash with Eosinophilia and Eosinophilic Symptoms (DRESS)

To report SUSPECTED ADVERSE EVENTS, contact FDA at 1-800-FDA-1088 or [www.fda.gov](http://www.fda.gov).

#### OVERDOSAGE

Supportive care is advised, with maintenance of glomerular filtration. Vancomycin is poorly removed by dialysis. Hemofiltration and hemoperfusion with polyurethane resin have been reported to result in increased vancomycin clearance. The median lethal intravenous dose is 319 mg/kg in rats and 400 mg/kg in mice.

To obtain up-to-date information about the treatment of overdose, a good resource is your certified Regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference* (PDR). In managing overdose, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

#### DOSAGE AND ADMINISTRATION

An infusion rate of 10 mg/min or less is associated with fewer infusion-related events (see **ADVERSE REACTIONS**). Infusion-related events are related to both concentration and rate of administration of vancomycin. Concentrations of no more than 5 mg/mL and rates of no more than 10 mg/min are recommended in adults (see also age-specific recommendations).

In selected patients in need of fluid restriction, a concentration up to 10 mg/mL may be used; use of such higher concentrations may increase the risk of infusion-related events. Infusion-related events may occur, however, at any rate or concentration.

The use of ADD-Vantage vials of vancomycin hydrochloride is indicated only when doses of 500 mg, 750 mg or 1 g are appropriate. Patient factors, such as renal function and age, are critical in calculating correct dosage regimens (see below). If doses of 500 mg, 750 mg or 1 g are determined to be appropriate, conventional vials of vancomycin hydrochloride should be used. ADD-VANTAGE VIALS OF VANCOMYCIN HYDROCHLORIDE SHOULD NOT BE USED IN NEONATES, INFANTS, OR PEDIATRIC PATIENTS WHO REQUIRE DOSES OF LESS THAN 500 MG.

#### Patients with Normal Renal Function

##### Adults

The usual daily intravenous dose is 2 g divided either as 500 mg every six hours or 1 g every 12 hours. Each dose should be administered at no more than 10 mg/min, or over a period of at least 60 minutes, whichever is longer. Other patient factors, such as age or obesity, may call for modification of the usual daily dose.

##### Pediatric Patients

The usual intravenous dosage of vancomycin hydrochloride is 10 mg/kg per dose given every six hours. Each dose should be administered over a period of at least 60 minutes. Close monitoring of serum concentrations of vancomycin is recommended in these patients.

##### Neonates

In pediatric patients up to the age of 1 month, the total daily intravenous dosage may be lower. In neonates, an initial dose of 15 mg/kg is suggested, followed by 10 mg/kg every 12 hours for neonates in the first week of life and every eight hours thereafter up to the age of one month. Each dose should be administered over 60 minutes. In premature infants, vancomycin clearance decreases as postconceptional age decreases. Therefore, longer dosing intervals may be necessary in premature infants. Close monitoring of serum concentrations of vancomycin is recommended in these patients.

#### Patients with Impaired Renal Function and Elderly Patients

Dosage adjustment must be made in patients with impaired renal function. In premature infants and in the elderly, greater dosage reductions than expected may be necessary because of decreased renal function. Measurement of vancomycin serum concentrations can be helpful in optimizing therapy, especially in seriously ill patients with changing renal function. Vancomycin serum concentrations can be determined by use of microbiologic assay, radioimmunoassay, fluorescence polarization immunoassay, fluorescence immunoassay, or high-pressure liquid chromatography.

If creatinine clearance can be measured or estimated accurately, the dosage for most patients with renal impairment can be calculated using the following table. The dosage of vancomycin hydrochloride per day in mg is 15 times the glomerular filtration rate in mL/min:

DOSAGE TABLE FOR VANCOMYCIN IN PATIENTS WITH IMPAIRED RENAL FUNCTION  
(Adapted from Moellering et al<sup>1</sup>)

| Creatinine Clearance<br>mL/min | Vancomycin Dose<br>mg/24 h |
|--------------------------------|----------------------------|
| 100                            | 1,545                      |
| 90                             | 1,390                      |
| 80                             | 1,235                      |
| 70                             | 1,080                      |
| 60                             | 925                        |
| 50                             | 770                        |
| 40                             | 620                        |
| 30                             | 465                        |
| 20                             | 310                        |
| 10                             | 155                        |

The initial dose should be no less than 15 mg/kg, even in patients with mild to moderate renal insufficiency.

The table is not valid for functionally anephric patients. For such patients, an initial dose of 15 mg/kg of body weight should be given to achieve prompt therapeutic serum concentrations. The dose required to maintain stable concentrations is 1.5 mg/kg/24 h. In patients with marked renal impairment, it may be more convenient to give maintenance doses of 250 to 1000 mg once every several days rather than administering the drug on a daily basis. In anuria, a dose of 1000 mg every 7 to 10 days has been recommended.

When only serum creatinine concentration is known, the following formula (based on sex, weight, and age of the patient) may be used to calculate creatinine clearance. Calculated creatinine clearances (mL/min) are only estimates. The creatinine clearance should be measured promptly.

Men:  $\text{Weight (kg)} \times (140 - \text{age in years})$   
72 x serum creatinine concentration (mg/dL)

Women: 0.85 x above value

The serum creatinine must represent a steady state of renal function. Otherwise, the estimated value for creatinine clearance is not valid. Such a calculated clearance is an overestimate of actual clearance in patients with conditions: (1) characterized by decreasing renal function, such as shock, severe heart failure, or oliguria; (2) in which a normal relationship between muscle mass and total body weight is not present, such as in obese patients or those with liver disease, edema, or ascites; and (3) accompanied by debilitation, malnutrition, or inactivity.

The safety and efficacy of vancomycin administration by the intrathecal (intralumbar or intraventricular) route have not been assessed.

Intermittent infusion is the recommended method of administration.

#### PREPARATION AND STABILITY

Vancomycin Hydrochloride ADD-Vantage vials should be used only with approved diluents (5% dextrose injection or 0.9% sodium chloride injection) (see **INSTRUCTIONS FOR USE**).

##### Chemical Stability

It has been shown that after reconstitution, the admixture solution prepared in either dextrose injection or sodium chloride injection may be stored for 24 hours at room temperature or in a refrigerator for 14 days without significant loss of potency. However, this information is not intended to suggest that it is acceptable practice to administer such an admixture well after the time of preparation. Admixtures should be prepared as close to the time of administration as is reasonable.

Intermittent infusion is the recommended method of administration.

The 500 mg ADD-Vantage vial should be joined with at least a 100 mL ADD-Vantage flexible diluent container, the 750 mg and the 1 g ADD-Vantage vial should be joined only to a 250 mL ADD-Vantage flexible diluent container. The desired dose diluted in this manner should be administered by intravenous infusion over a period of at least 60 minutes.

Vancomycin solution has a low pH and may cause physical instability of other compounds.

Mixtures of solutions of vancomycin and beta-lactam antibiotics have been shown to be physically incompatible. The likelihood of precipitation increases with higher concentrations of vancomycin. It is recommended to adequately flush the intravenous lines between the administration of these antibiotics. It is also recommended to dilute solutions of vancomycin to 5 mg/mL or less. Although intrathecal injection is not an approved route of administration for vancomycin, precipitation has been reported after intrathecal injection of vancomycin and cefazidime for endophthalmitis using different syringes and needles. The precipitates dissolved gradually, with complete clearing of the vitreous cavity over two months and with improvement of visual acuity.

Prior to administration, parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution or container permits.

##### For Oral Administration

**NOTE:** For information only, ADD-Vantage Vials cannot be used to supply vancomycin for this purpose.

Oral vancomycin is used in treating antibiotic-associated pseudomembranous colitis caused by *C. difficile* and for staphylococcal enterocolitis. Vancomycin is not effective by the oral route for other types of infections. The usual adult total daily dosage is 500 mg to 2 g given in 3 or 4 divided doses for 7 to 10 days. The total daily dosage in pediatric patients is 40 mg/kg of body weight in 3 or 4 divided doses for 7 to 10 days. The total daily dosage should not exceed 2 g. The appropriate dose may be diluted in 1 oz of water and given to the patient to drink. Common flavoring syrups may be added to the solution to improve the taste for oral administration. The diluted material may be administered via nasogastric tube.

#### INSTRUCTIONS FOR USE

##### To Use Vial in ADD-Vantage Flexible Diluent Container

###### To Open:

Peel overwrap at corner and remove solution container. Some opacity of the plastic due to moisture absorption during the sterilization process may be observed. This is normal and does not affect the solution quality or safety. The opacity will diminish gradually.

##### (Use Aseptic Technique)

1. Remove the protective covers from the top of the vial and the vial port on the diluent container as follows:

- Remove the breakaway vial cap, swing the pull ring over the top of the vial and pull down far enough to start the opening (See Figure 1), then pull straight up to remove the cap. (See Figure 2) **NOTE:** Do not access vial with syringe.

Fig. 1



Fig. 2



- Remove the vial port cover, grasp the tab on the pull ring, pull up to break the tie membrane, then pull back to remove the cover. (See Figure 3).

- Screw the vial into the vial port until it will go no further. The VIAL MUST BE SCREWED IN TIGHTLY TO ASSURE A SEAL. This occurs approximately 1/2 turn (180°) after the first audible click. (See Figure 4) The clicking sound does not assure a seal; the vial must be turned as far as it will go. **NOTE:** Once vial is sealed, do not attempt to remove. (See Figure 4).
- Recheck the vial to assure that it is tight by trying to turn it further in the direction of assembly.
- Add appropriately.

Fig. 3



Fig. 4



##### To Reconstitute the Drug:

- Squeeze the bottom of the diluent container gently to inflate the portion of the container surrounding the end of the drug vial.
- With the other hand, push the drug vial down into the container telescoping the walls of the container. Grasp the inner cap of the vial through the walls of the container. (See Figure 5)
- Pull the inner cap from the drug vial. (See Figure 6) Verify that the rubber stopper has been pulled out, allowing the drug and diluent to mix.
- Mix container contents thoroughly and use within the specified time.

Fig. 5

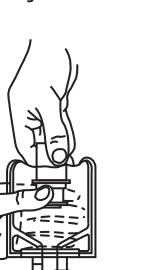


Fig. 6



##### Preparation for Administration:

###### (Use Aseptic Technique)

- Confirm the activation and admixture of vial contents.
- Check for leaks by squeezing container firmly. If leaks are found, discard unit as sterility may be impaired.
- Close flow control clamp of administration set.
- Remove cover from outlet port at bottom of container.
- Insert piercing pin of administration set into port with a twisting motion until the pin is firmly seated. **NOTE:** See full directions on administration set carton.
- Lift the free end of the hanger loop on the bottom of the vial, breaking the two tie strings. Bend the loop outward to lock it in the upright position, then suspend container from hanger.
- Squeeze and release drip chamber to establish proper fluid level in chamber.
- Open flow control clamp and clear air from set. Close clamp.
- Attach set to venipuncture device. If device is not indwelling, prime and make venipuncture.
- Regulate rate of administration with flow control clamp.

##### **WARNING: Do not use flexible containers in series connections.**

#### HOW SUPPLIED

Vancomycin Hydrochloride for Injection, USP is supplied as a sterile powder in single-dose ADD-Vantage vials that contain either 500 mg, 750 mg or 1 g.

| NDC Number   | Fill   | Units per Carton      |
|--------------|--------|-----------------------|
| 0409-6534-01 | 500 mg | 10 ADD-Vantage™ Vials |
| 0409-6531-01 | 750 mg | 10 ADD-Vantage™ Vials |
| 0409-6535-01 | 1 g    | 10 ADD-Vantage™ Vials |

Store at 20° to 25°C (68° to 77°F). [See USP Controlled Room Temperature.]

#### ANIMAL PHARMACOLOGY

In animal studies, hypotension and bradycardia occurred in dogs receiving an intravenous infusion of vancomycin, 25 mg/kg, at a concentration of 25 mg/mL and an infusion rate of 13.3 mL/min.

#### REFERENCES

- Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically: Approved Standard – 8th ed. CLSI document M07-A8. Clinical and Laboratory Standards Institute, Wayne, PA, January, 2009.
- Performance Standards for Antimicrobial Susceptibility Testing: 21st Informational Supplement, CLSI document M100-S21. Clinical and Laboratory Standards Institute, Wayne, PA, January, 2011.
- Performance Standards for Antimicrobial Disk Susceptibility Tests: Approved Standard – 10th ed., CLSI document M02-A10. Clinical and Laboratory Standards Institute, Wayne, PA, January, 2009.
- Moellering RC, Krogstad DJ, Greenblatt DJ: Vancomycin therapy in patients with impaired renal function: A nomogram for dosage. *Ann Intern Med* 1981;94:343.

Revised: 01/2012

## Vancomycin Hydrochloride for Injection, USP

ADD-Vantage™ Vials

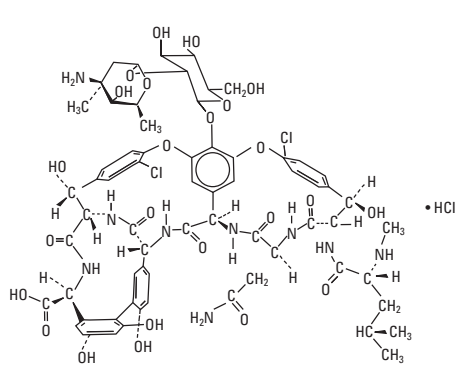
Rx only



To reduce the development of drug-resistant bacteria and maintain the effectiveness of vancomycin and other antibacterial drugs, vancomycin should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

#### DESCRIPTION

Vancomycin Hydrochloride for Injection, USP, intravenous, is a chromatographically purified tricyclic glycopeptide antibiotic derived from *Amphotropis orientalis* (formerly *Nocardia orientalis*) and has the molecular formula  $C_{42}H_{71}ClN_9O_{24} \cdot HCl$ . The molecular weight is 1485.74; 500 mg of the base is equivalent to 0.34 mmol, 750 mg of the base is equivalent to 0.51 mmol, and 1 g of the base is equivalent to 0.67 mmol. Vancomycin Hydrochloride has the following structural formula:



The ADD-Vantage™ vials contain sterile vancomycin hydrochloride equivalent to either 500 mg, 750 mg, or 1 g vancomycin activity for reconstitution in the ADD-Vantage flexible diluent container containing 5% dextrose injection or 0.9% sodium chloride injection. Vancomycin Hydrochloride is a white to tan lyophilized powder. May contain hydrochloric acid and/or sodium hydroxide for pH adjustment. When reconstituted in water, it forms a clear, light to dark tan solution with a pH of 4.0 (2.5 to 4.5). This product is oxygen sensitive.

The solutions contain no bacteriostat, antimicrobial agent (except vancomycin) or buffer and are intended for use only as a single-dose injection only with the ADD-Vantage Flexible Diluent Container.

#### FURTHER DILUTION IS REQUIRED BEFORE USE (see **DOSAGE AND ADMINISTRATION**).

#### CLINICAL PHARMACOLOGY

Vancomycin is poorly absorbed after oral administration; it is given intravenously for therapy of systemic infections. Intramuscular injection is painful.

Vancomycin Hydrochloride for Injection, USP is administered intravenously for therapy of systemic infections.

In subjects with normal kidney function, multiple intravenous dosing of 1 g of vancomycin (15 mg/kg) infused over 60 minutes produces mean plasma concentrations of approximately 31 mcg/mL two hours after the completion of infusion, mean plasma concentrations of approximately 23 mcg/mL two hours after infusion, and mean plasma concentrations of approximately 8 mcg/mL eleven hours after the end of the infusion. Multiple dosing of 500 mg infused over 30 minutes produces mean plasma concentrations of about 49 mcg/mL at the completion of infusion, mean plasma concentrations of about 19 mcg/mL two hours after infusion, and mean plasma concentrations of about 10 mcg/mL six hours after infusion. The plasma concentrations during multiple dosing are similar to those after a single dose.

The mean elimination half-life of vancomycin from plasma is 4 to 6 hours in subjects with normal renal function. In the first 24 hours, about 75% of an administered dose of vancomycin is excreted in urine by glomerular filtration. Mean plasma clearance is about 0.058 L/kg/hr, and mean renal clearance is about 0.048 L/kg/hr. Renal dysfunction slows excretion of vancomycin. In anephric patients, the average half-life of elimination is 7.5 days. The distribution coefficient is from 0.3 to 0.43 L/kg. There is no apparent metabolism of the drug. About 60% of an intraperitoneal dose of vancomycin administered during peritoneal dialysis is absorbed systemically in six hours. Serum concentrations of about 10 mcg/mL are achieved by intraperitoneal injection of 30 mg/kg of vancomycin.

However, the safety and efficacy of the intraperitoneal use of vancomycin has not been established in adequate and well-controlled trials (see **PRECAUTIONS**).

Total systemic and renal clearance of vancomycin may be reduced in the elderly.

Vancomycin is approximately 90% bound to plasma proteins as measured by ultrafiltration. The binding of vancomycin to plasma proteins is not affected by the administration of vancomycin hydrochloride, inhibitory concentrations are present in pleural, pericardial, ascitic, and synovial fluids; in urine; in peritoneal dialysis fluid; and in atrial appendage tissue. Vancomycin hydrochloride does not readily diffuse across normal meninges into the spinal fluid, but, when the meninges are inflamed, penetration into the spinal fluid occurs.

#### Microbiology

The bactericidal action of vancomycin results primarily from inhibition of cell-wall biosynthesis. In addition, vancomycin alters bacterial cell-membrane permeability and RNA synthesis. There is no cross-resistance between vancomycin and other antibiotics. Vancomycin is not active *in vitro* against gram-negative bacilli, mycobacteria, or fungi.

#### Synergy

The combination of vancomycin and an aminoglycoside acts synergistically *in vitro* against many strains of *Staphylococcus aureus*, *Streptococcus* spp., enterococci, and the viridans group streptococci.

Vancomycin has been shown to be active against most strains of the following microorganisms, both *in vitro* and in clinical infections as described in the **INDICATIONS AND USAGE** section.

##### Gram-positive bacteria

Diphtheroids

Enterococci (e.g., *Enterococcus faecalis*)

Staphylococci, including *Staphylococcus aureus* and *Staphylococcus epidermidis* (including heterogeneous methicillin-resistant strains) in adequate and well-controlled clinical trials.

##### Gram-positive bacteria

*Listeria monocytogenes*

*Streptococcus pyogenes*

*Streptococcus pneumoniae* (including penicillin-resistant strains)

*Streptococcus agalactiae*

##### Anaerobic Gram-positive bacteria

*Actinomyces* species

*Lactobacillus* species

#### Susceptibility Test Methods

When available, the clinical microbiology laboratory should provide the results of *in vitro* susceptibility test results for antimicrobial drugs used in local hospitals and practice areas to the physician as periodic reports that describe the susceptibility profile of nosocomial and community-acquired pathogens. These reports should aid the physician in selecting the most effective antimicrobial.

#### Dilution Techniques

Quantitative methods are used to determine antimicrobial minimum inhibitory concentrations (MIC's). These MIC's provide estimates of the susceptibility of bacteria to antimicrobial compounds. The MIC's should be determined using a standardized procedure. Standardized procedures are based on dilution method<sup>1,2</sup> (broth, agar or microdilution) or equivalent with the **oral route for other types of infection**.

The MIC values should be interpreted according to the criteria in Table 1.

#### Diffusion Techniques

Quantitative methods that require measurement of zone diameters also provide reproducible estimates of the susceptibility of bacteria to antimicrobial compounds. One such standardized procedure<sup>3</sup> requires the use of standardized inoculum concentrations. This procedure uses paper disks impregnated with 30 mcg of vancomycin to test the susceptibility of microorganisms to vancomycin. Interpretation involves correlation of the diameter obtained in the disk test with the MIC for vancomycin.

Reports from the laboratory providing results of the standard single-disk susceptibility test with a 30-mcg vancomycin disk should be interpreted according to the following criteria in Table 1.

Table 1. Susceptibility Test Interpretive Criteria for Vancomycin

| Pathogen                                     | Minimum Inhibitory Concentrations (mcg/mL) |                  |               | Disk Diffusion Diameters (mm) |                      |                  |
|--|--|------------------|---------------|-------------------------------|----------------------|------------------|
|  | Susceptible (S)                            | Intermediate (I) | Resistant (R) | Susceptible (S)               | Intermediate (I)     | Resistant (R)    |
| <i>Enterococcus</i> <sup>a</sup>             | ≤4   | 8 – 16           | ≥32           | ≥17 <sup>b</sup>              | 15 – 16 <sup>b</sup> | ≤14 <sup>b</sup> |
| <i>Staphylococcus aureus</i>                 | ≤2   | 4 – 8            | ≥16           | —                             | —                    | —                |
| <i>Coagulase-negative staphylococci</i>      | ≤4   | 8 – 16           | ≥32           | —                             | —                    | —                |
| <i>Streptococci other than S. pneumoniae</i> | ≤1 <sup>c,d</sup>                          | —                | —             | ≥17 <sup>c</sup>              | —                    | —                |

<sup>a</sup> A 6-bactam test using an inoculum of 10<sup>6</sup> CFU/mL or direct colony growth and a microtiter-based endpoint should be performed to detect either ampicillin or penicillin resistance due to β-lactamase production.

<sup>b</sup> Plates should be held for 48 hours and examined using transmitted light. The presence of a haze or any growth within the zone of inhibition indicates resistance. These reference counts with intermediate zones of inhibition should be tested by a standardized procedure based on a dilution method<sup>2</sup> (broth or agar) or equivalent.

<sup>c</sup> The current absence of resistant isolates precludes defining results other than "Susceptible." Isolates yielding results suggestive of "Non-susceptible" should be submitted to a reference laboratory for further testing.

<sup>d</sup> Interpretative criteria applicable only to tests performed by broth microdilution method using cation-adjusted Mueller-Hinton broth with 2 to 3% lysed horse blood.

<sup>e</sup> Interpretative criteria applicable only to tests performed by disk diffusion method using Mueller-Hinton agar with 5% defibrinated sheep blood and incubated in 5% CO<sub>2</sub>. A report of "Susceptible" indicates that the pathogen is likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable. A report of "Intermediate" indicates that the result should be considered equivocal, and, if the microorganism is not fully susceptible to alternative, clinically feasible drugs, the test should be repeated. This category implies possible clinical applicability in body sites where the drug is physiologically concentrated or in situations where high dosage of drug can be used. This category also provides a buffer zone which prevents small uncontrolled technical factors from causing major discrepancies in interpretation. A report of "Resistant" indicates that the pathogen is not likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable; other therapy should be selected.

#### Quality Control

Standardized susceptibility test procedures require the use of laboratory control microorganisms to monitor and ensure the accuracy and precision of the supplies and reagents used in the assay and the techniques of the individuals performing the test. Standardized vancomycin powder should provide MIC values provided below. For the diffusion technique, the 30 mcg vancomycin disk should provide the following zone diameters with the quality control strains:

Table 2. In Vitro Susceptibility Test Quality Control Ranges for Vancomycin

| Organism (ATCC #)                                    | MIC range (mcg/mL) | Disk diffusion range (mm) |
|--|--------------------|---------------------------|
| <i>Enterococcus faecalis</i> (29212)                 | 1 – 4              | Not applicable            |
| <i>Staphylococcus aureus</i> (29213)                 | 0.5 – 2            | Not applicable            |
| <i>Staphylococcus aureus</i> (29232)                 | Not applicable     | 17 – 21                   |
| <i>Streptococcus pneumoniae</i> (49619) <sup>a</sup> | 0.12 – 0.5         | 20 – 27                   |

<sup>a</sup> Interpretative criteria applicable only to tests performed using cation-adjusted Mueller-Hinton broth with 2 to 5% lysed horse blood.<sup>2</sup> Disk diffusion interpretative criteria applicable only to tests performed using Mueller-Hinton agar with 5% defibrinated sheep blood and incubated in 5% CO<sub>2</sub>.

#### INDICATIONS AND USAGE

Vancomycin hydrochloride is indicated for the treatment of serious or severe infections caused by susceptible strains of methicillin-resistant (beta-lactam-resistant) staphylococci. It is indicated for penicillin-allergic patients, for patients who cannot receive or who have failed to respond to other drugs, including the penicillins or cephalosporins, and for infections caused by vancomycin-susceptible organisms that are resistant to other antimicrobial drugs. Vancomycin hydrochloride is indicated for initial therapy when methicillin-resistant staphylococci are suspected, but after susceptibility data are available, therapy should be adjusted accordingly.

Vancomycin hydrochloride is effective in the treatment of staphylococcal endocarditis. It's effectiveness has been documented in other infections due to staphylococci, including abscesses, bone infections, lower respiratory tract infections, skin and skin-structure infections. When staphylococcal infections are localized and purulent, antibiotics are used as adjuncts to appropriate surgical measures.

Vancomycin hydrochloride has been reported to be effective alone or in combination with an aminoglycoside for endocarditis caused by *Streptococcus viridans* or *S. bovis*. For endocarditis caused by enterococci (e.g., *E. faecalis*), vancomycin hydrochloride has been reported to be effective only in combination with an aminoglycoside.

Vancomycin hydrochloride has been reported to be effective for the treatment of diphtheroid endocarditis. Vancomycin hydrochloride has been used successfully in combination with either rifampin, an aminoglycoside, or both in early

---

**This is a representation of an electronic record that was signed electronically and this page is the manifestation of the electronic signature.**

---

/s/

---

JACQUELINE D COUNCIL  
06/12/2012

LILLIE D GOLSON  
06/12/2012  
for Wm. Peter Rickman