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All formulary changes and policy/procedure updates have been approved by the Drugs and Therapeutics Committee (D&T) and Medical & Academic Advisory Council (MAAC)

Changes to Formulary

Additions

1. Simvastatin 10mg, 20mg tabs (Zocor®)

- HMG-CoA reductase inhibitor ("statin") indicated as a cholesterol lowering agent
- refer to page 2 for interchange policy re conversion of all statins to simvastatin

2. Epoprostenol 0.5 mg, 1.5 mg injection (Flolan®)

- restricted to prescribing by Dr. R. Levy and Dr. D. Ostrow for the management of primary pulmonary hypertension

Deletions

1. Lovastatin 20mg tablet (Mevacor®)

- alternative: simvastatin 10mg tablet
- refer to page 2 for interchange policy re conversion of all statins to simvastatin

Updated Policies/Procedures

1. Revised Automatic Stop Order Policy

The current stop order policy has been modified to eliminate the 28-day (or longer) component of the policy. Table 1 lists the remaining drugs that are still subject to automatic stop orders.

Table 1. VHHSC Automatic Stops

Class of Medication	Automatic Stop
Anti-infectives (topical and systemic)	7 days
Narcotic and Controlled Drugs (except phenobarb)	7 days
Anticoagulants - oral	7 days
Inhalation Solution by Nebulizer	7 days
Total Parenteral Nutrition (TPN)	7 days
Ophthalmic preps except for glaucoma/lubrication	7 days
Restricted Antimicrobial Drugs (RAD - ciprofloxacin IV, ceftriaxone, ceftazidime, imipenem)	3 days

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2. HMG-CoA Reductase Inhibitor ("Statin") Interchange to Simvastatin

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Why lower blood cholesterol?

Lipid lowering therapy with statins has been shown to decrease mortality in patients with and without coronary artery disease (CAD). Specifically, simvastatin 20-40mg daily significantly reduced mortality in a secondary prevention trial (8.2% vs 11.5% placebo).¹ Pravastatin 40mg daily has significantly reduced mortality when used for secondary prevention (11.0% vs 14.1% placebo)² and primary prevention (3.2% vs 4.1% placebo)³.

What are the goals for cholesterol lowering?

The Canadian Working Group on High Cholesterol has published guidelines for the treatment of elevated cholesterol levels based on an individual's risk factors for CAD.⁴ Table 2 illustrates the treatment goals based on the number of risk factors and LDL concentration.

# Risk Factors†	Target LDL (mmol/L)
One or less	< 5.0
Two	< 4.0
Three	< 3.5
Four or more or CAD	< 2.5

† Risk factors: age (male \geq 45 y, female \geq 55 y or post-menopausal not on hormone replacement therapy), diabetes, family history of premature CAD (male \leq 55 y, female \leq 65 y), smoking, hypertension, left ventricular hypertrophy

Choice of Formulary Statin

Lovastatin is the current formulary statin at VHHSC. Table 3 illustrates the approximate equivalent dose and cost of the 6 statin agents available in Canada. All statins cause a similar reduction in LDL levels at comparable doses. The only trials published to date that have shown reductions in overall mortality have been conducted with simvastatin and pravastatin. While atorvastatin has been purported to cause the greatest reduction in triglyceride lev-

els (19-37% vs 10-15% with other statins)⁵, a recent head-head trial showed no difference between atorvastatin, simvastatin, pravastatin, fluvastatin, or lovastatin on triglyceride lowering effects at usual doses⁶.

Simvastatin has been chosen as the statin drug for the VHHSC formulary based on the following: a) scientific evidence for survival benefit, and b) similar or lower cost (at higher doses) compared to lovastatin.

Table 3. Comparison of statin drugs

Drug	Approximate Equivalent Dose†	Cost/30 days‡
Lovastatin (Mevacor®)	20mg	\$52.00
Pravastatin (Pravachol®)	20mg	\$54.00
Simvastatin (Zocor®)	10mg	\$53.00
Atorvastatin (Lipitor®)	10mg	\$48.00
Fluvastatin (Lescol®)	40mg	\$32.00
Cerivastatin (Baycol®)	0.2mg	\$36.00

† Dose equivalence based on a 25-30% reduction in LDL cholesterol
‡ Costs based on VHHSC acquisition costs

Therapeutic Interchange of Statins to Simvastatin

Due to the number of alternative statin drugs, a therapeutic interchange policy will be implemented on January 11, 1999. Thereafter, all inpatient prescriptions for statin drugs will be converted to simvastatin at the equivalent dosage as listed in table 3. "Do not substitute" may be written for an individual statin prescription if the patient has brought their own supply into the hospital.

References

- 1 4S Study Group. Lancet 1994;344:1383-9.
- 2 LIPID Study Group. N Engl J Med 1998;339:1349-57.
- 3 WOSCOP Study Group. N Engl J Med 1995;333:1301-7.
- 4 Working Group on Hypercholesterolemia. Can J Cardiol 1998;14 (Suppl A):17A-21A.

3. Expansion of TPN Prescribing Privileges

A. Staff TPN Physicians:

- TPN prescribing privileges for General Surgery have been extended to include Dr. R. Simons and Dr. A. Kirkpatrick, in addition to Dr. D.B. Allardyce.

B. Medical residents in General Surgery:

- Initial TPN prescriptions written by a general surgery resident must be counter-signed by a staff TPN physician before processing by pharmacy.
- Surgical residents are, however, permitted to adjust and discontinue TPN orders without a counter-signature.
- It is expected that surgical residents will solicit input from the staff TPN physician as needed and that staff TPN physicians will review the TPN regimen at least once every 7 days.

4. Medication Administration by Respiratory Therapists

Respiratory therapists are approved to administer morphine, hydromorphone and furosemide by nebulizer for the management of terminal dyspnea. Preservative-free formulations should be administered. Dosages are listed in Table 4.

Table 4. Nebulized Medication for Terminal Dyspnea

Nebulized agent (preservative-free)	Dose (qs to 5mL with preservative-free normal saline)
Furosemide ^{1,2}	20-40mg q24h prn
Morphine† ^{3,4}	5-10 mg (up to 40mg) q4h prn
Hydromorphone ^{3,4}	1-2mg (up to 8 mg) q4h prn

†Use epidural morphine which is the preservative-free formulation

References:

1. Stone P, Kurowska A. Palliative Med 1994;8:258.
2. Editorial. Lancet 1990;335:944-5.
3. Sauder C. VHHSC Pain Management Newsletter. 1995;1(8):6-7.
4. Farncombe M, Chater S. Support Care Cancer 1994;2:184-7.

5. Modification of Drug Status

- **Risperidone** is no longer restricted to psychiatry and can now be prescribed by all physicians.
- **Gabapentin, lamotrigine and vigabatrin** are no longer restricted to neurology and can be prescribed by all physicians.
- The current restrictions for **remifentanyl** are expanded to include the main Operating Rooms, Surgical Day Care Centre and Lithotripsy area.

6. Revised Drug Administration Policies

- Nurses in **critical care areas** may administer **metoprolol and propranolol direct IV for initial and subsequent doses**. For non-critical care areas, the physician must administer the initial dose and be present for the first 15 minutes.
- **Extravasation guidelines** for cytotoxic drugs have been **updated** to concur with the recently published guidelines by the BC Cancer Agency. The major changes are:
 - ⇒ Amsacrine and melphalan are now classified as vesicants; dacarbazine and mitoxantrone are non-vesicants.
 - ⇒ Dimethylsulfoxide (DMSO) will be used for the management of extravasations from daunorubicin, doxorubicin, epirubicin and mitomycin C. DMSO replaces the previous protocol of instilling sodium bicarbonate/dexamethasone into the site.
 - ⇒ All peripheral administration of vesicants are to be administered via syringe into a free-running IV using the side-arm technique. All infusions/minibags of vesicants are to be administered via central route only.
 - ⇒ Extravasation kits have been updated to include DMSO and the revised extravasation protocols. For peripheral administration of vesicants, an order to initiate the extravasation protocol, as

Pharmacy Award

Lara Campbell, B.Sc. (Pharm) won the Canadian Society of Hospital Pharmacy, BC Branch award for the 1997/8 Hospital Residency Project:

"Outpatient self-management of warfarin therapy: a pilot study." R Sunderji, L Campbell, K Shalansky, A Fung, C Carter, K Gin

Pharmacy Research Grant

The following research project was awarded a grant by the Vancouver Hospital Interdisciplinary Research Grant competition:

"A randomized trial of outpatient self-adjusted versus physician-managed oral anticoagulation." R Sunderji, A Fung, K Shalansky, L Campbell, S Alladina, C Davies, L Schwartz, C Carter, K Gin

Infusion Program Updates

Did You Know That:

- Since January 1998, the Infusion Program Educators have created and maintained a workload database. Over 1850 activity episodes have been recorded over the past 11 months and preliminary analysis reveals that:
 - ⇒ 46% of activities involved Business Unit 2, 35% involved BU-3 and 3% involved BU-1. The remaining activities were hospital-wide (e.g. hosting continuing education events) or involved external groups (e.g. community nursing support);
 - ⇒ 37% of activities were related to Home IV Program patient care;
 - ⇒ 18% of activities involved management of CVC lines.
- The IV Resource Nurses also maintain a workload database and record an average of 950 completed consults every 28-day period. In rank order, the top consumers of this service are CP 8th floor (22% of consults), CP 10th floor (16%) and HP B floor (13%).

Infusion Device Facts and Tips:

- Each black marking on a PICC represents 10cm of catheter in situ (e.g. a "3-dot

marking" means that the distal end of the PICC is 30cm into the vein from the insertion point).

- Alcohol should be permitted to dry for 30 seconds before opening a CVC/IV connection to allow for a full bactericidal effect.
- Chlorhexidine 0.5% in 70 % alcohol is considered to be the bactericidal solution of choice for all CVC dressings.
- Implanted venous access devices (e.g. port-a-caths) must only be accessed with a Huber point needle to avoid damage to the device.

How to Streamline IV Resource Nurse Consultations:

Many of the almost 1000 monthly requests for IV Resource Nurse support are initiated by your calls to our answering machine at #63855. To improve our ability to provide you with support, here are some tips when leaving a request for assistance:

- Speak clearly, keep your message brief and precise, and provide pertinent facts regarding: the purpose of the consultation, the urgency of the consultation, and whether the consultation is related to a scheduled OR procedure.
- If blood products are to be administered, identify a) whether or not the patient has been crossmatched and b) the status of blood products on the ward. The patient should have a #20 or larger Insite®.
- Ensure the patient has been informed that they will be receiving blood products before the IV Resource Nurse arrives.
- If a saline lock for parenteral medications is required, state when the related medications are due for administration.
- Ensure the patient is on the ward when you request a "STAT" or "ASAP" consultation. A "STAT" request is appropriate for patients in shock, convulsing or bleeding. Expect to be contacted by the IV Resource Nurse to clarify the urgency of these requests.
- Patients who are likely to be difficult IV starts (or who are very anxious) are best positioned in bed before the procedure.
- Please cancel the IV Resource Nurse consult if you are successful starting the