Pharmaceutical Care and Humanitarian Aid
My experiences in Haïti 2005-2015

Diane Lamarre, pharmacist, M.Sc.,
Professor of Clinical pharmacy
Faculté de pharmacie, Université de Montréal

Pharmacists Without Borders- Canada and Quebec Board of Pharmacists
Mission Haïti

Pharmacist without borders - Canada
Pharmaciens sans frontières - Canada  
Pharmacist without borders - Canada
- Canadian section founded by Hubert Brault -1995
- President Regis Vaillancourt
- Thrive to provide technical and logistical support
- Work in collaboration with locals
- Implement efficient drug management and distribution system
- Teaching and supporting pharmaceutical care in development and post-war countries.
2005

- Collaboration with a group of American Dermatologists
- Was their third visit, they didn’t expect to go in Haïti anymore
- Want me to develop compoundings for tropical dermatologic problems
Collaboration with the American Academy of Dermatologists and CDC (2005- )

- Leogane – 40Km from Port-au-Prince
- Leger Hospital
- Need for compounding dermatological formulations against tropical diseases
- Pictograms
- Orphanage medical visits
- Teaching
From left to right: Dr Norlund, Sr Ellissainte, Dr Charles, technician assistant et Dr Ertle.
Compound formulations
Tinea capitis in Haïti
Specific compounded formulations selected for tropical country diseases

- Hydrocortisone cream, ointment
- Fluocinonide
- Triamcinolone acetonide
- Clotrimazole cream and lotion
- Gentian violet 1%
- Whitfield ointment
- Potassium permanganate
Compounding and Use of Technology

Diane Lamarre, pharmacist
B.Pharm., M.Sc.,
Associate Professor of Clinical Pharmacy,
Faculty of Pharmacy, University of Montreal
Compounding supplies

- Balance weights to 100 mg to 1 kg (1,300.$US)
  Acculab
- Weighing papers and plastic weighing boats
- Graduate cylinders (10, 25, 50, 100, 250ml)
- Beakers (500ml, 1 liter, 2 liters)
- Hot plate with magnetic stirrer
- Spatulas (various sizes), (V spatula for gentian violet powder)
**Glass Graduated Cylinders**
- Cylinder is graduated in single scale (mL).
- Borosilicate glass.

<table>
<thead>
<tr>
<th>Graduated Cylinders</th>
<th>Product Description</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002</td>
<td>Glass Graduated Cylinder</td>
<td>10 mL</td>
</tr>
<tr>
<td>3009</td>
<td>Glass Graduated Cylinder</td>
<td>25 mL</td>
</tr>
<tr>
<td>3006</td>
<td>Glass Graduated Cylinder</td>
<td>50 mL</td>
</tr>
<tr>
<td>3008</td>
<td>Glass Graduated Cylinder</td>
<td>100 mL</td>
</tr>
<tr>
<td>3014</td>
<td>Glass Graduated Cylinder</td>
<td>250 mL</td>
</tr>
<tr>
<td>3015</td>
<td>Glass Graduated Cylinder</td>
<td>500 mL</td>
</tr>
<tr>
<td>3371</td>
<td>Glass Graduated Cylinder</td>
<td>1000 mL</td>
</tr>
</tbody>
</table>

**Plastic Graduated Cylinders**
- Accurate and easy-to-read graduations.
- Transparent polyethylene cylinders have printed graduations.
- Large round bases for stability.

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</tr>
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<tbody>
<tr>
<td>3040</td>
<td>Clear Plastic Cylinder</td>
<td>10 mL</td>
</tr>
<tr>
<td>3043</td>
<td>Clear Plastic Cylinder</td>
<td>25 mL</td>
</tr>
<tr>
<td>3045</td>
<td>Clear Plastic Cylinder</td>
<td>50 mL</td>
</tr>
<tr>
<td>3046</td>
<td>Clear Plastic Cylinder</td>
<td>100 mL</td>
</tr>
<tr>
<td>3047</td>
<td>Clear Plastic Cylinder</td>
<td>250 mL</td>
</tr>
<tr>
<td>3048</td>
<td>Clear Plastic Cylinder</td>
<td>500 mL</td>
</tr>
<tr>
<td>3436</td>
<td>Clear Plastic Cylinder</td>
<td>1000 mL</td>
</tr>
<tr>
<td>3437</td>
<td>Clear Plastic Cylinder</td>
<td>2000 mL</td>
</tr>
<tr>
<td>3438</td>
<td>Clear Plastic Cylinder</td>
<td>4000 mL</td>
</tr>
</tbody>
</table>

**Plastic Beakers**
- Polypropylene (non-transparent).
- High quality chemically resistant, shatter resistant, autoclavable, and have molded graduations in milliliters.

<table>
<thead>
<tr>
<th>Beaker</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>BK-P50</td>
<td>(50mL)</td>
</tr>
<tr>
<td>BK-P100</td>
<td>(100mL)</td>
</tr>
<tr>
<td>BK-P250</td>
<td>(250mL)</td>
</tr>
<tr>
<td>BK-P600</td>
<td>(600mL)</td>
</tr>
<tr>
<td>BK-P1L</td>
<td>(1000mL)</td>
</tr>
<tr>
<td>BK-P2L</td>
<td>(2000mL)</td>
</tr>
<tr>
<td>BK-P5L</td>
<td>(5000mL)</td>
</tr>
</tbody>
</table>

**Pitcher**
- Polypropylene (non-transparent) plastic which is autoclavable.
- Graduations are molded in milliliters.

<table>
<thead>
<tr>
<th>Pitcher</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIP-500</td>
<td>(500mL)</td>
</tr>
<tr>
<td>PIP-2L</td>
<td>(2000mL)</td>
</tr>
<tr>
<td>40055</td>
<td>(3000mL)</td>
</tr>
</tbody>
</table>

**Clear Plastic Beakers**
- Polyethylene (transparent) plastic which is autoclavable.
- Graduations are molded in milliliters.

<table>
<thead>
<tr>
<th>Clear Beakers</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKTP-50</td>
<td>(50mL)</td>
</tr>
<tr>
<td>BKTP-100</td>
<td>(100mL)</td>
</tr>
<tr>
<td>BKTP-250</td>
<td>(250mL)</td>
</tr>
<tr>
<td>BKTP-600</td>
<td>(600mL)</td>
</tr>
<tr>
<td>BKTP-1L</td>
<td>(1000mL)</td>
</tr>
<tr>
<td>BKTP-2L</td>
<td>(2000mL)</td>
</tr>
</tbody>
</table>
Weighing Paper
- Item#: 3016 (4" square)
- Item#: 68415 (6" square)
- Non-absorbent glassine weighing paper.
- Packaged in 500's.

Filter Paper
- Available in different flow rates.
- 100/pkcs.

Ointment Pads
- Item#: 3088
- 12" square.
- 100 sheets per pad.

Rubber Spatulas
- Item#: 3091 (4"
- Item#: 3093 (6"
- Item#: 3095 (8"
- Hard, non-scorch rubber spatula for compounding.
- Use in place of a metal spatula when mixing compounds that have a chemical reaction with metal.

Stainless Steel Spatulas
- Item#: 3042 (4"
- Item#: 3029 (6"
- Item#: 3043 (8"
- Item#: 3028 (0"
- Item#: 3430 (12"
- Comfortable wood handles.

Glass Ointment Slab
- Item#: 3098
- 12" square, 1/4" thick.

Flint Glass Mortars & Pestles
- Available in sets or individual pieces.

Ceramic Mortars & Pestles
- Item#: 3195
- Item#: 3199
- Item#: 3101
- Item#: 3104
- Item#: 3107
- Ceramic Mortar & Pestle 2 oz (60 ml)
- Ceramic Mortar & Pestle 4 oz (120 ml)
- Ceramic Mortar & Pestle 8 oz (240 ml)
- Ceramic Mortar & Pestle 16 oz (480 ml)
- Ceramic Mortar & Pestle 32 oz (960 ml)

Wedgegood Mortars & Pestles
- Item#: 3053 (2 oz)
- Item#: 3055 (8 oz)
- Very durable, high-quality product.
- Available in sets or individual pieces.
VIOLET DE GENTIANE 1%

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentian violet</td>
<td>1.00 gram</td>
</tr>
<tr>
<td>Alcohol 95%</td>
<td>10.00 milliliters</td>
</tr>
<tr>
<td>Purified water qs ad</td>
<td>100.00 milliliters</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00 milliliters</strong></td>
</tr>
</tbody>
</table>

Preparation

- Dissolve the GENTIAN VIOLET in the alcohol.
- Gradually add the water. Stir well.
- Make up to the final volume.
- Strain if necessary.

Indications

topical antifungal agent for treatment of oral candidosis in newborn.
Limit the product concentration between 0.25 to 0.5%.

Notes

CAUTION - STAINS EASILY - IRRITATING PRODUCT
Concentration higher than 0.5% should not be used on mucosa.

Conservation

undetermined stability

References

Martindale, The extra Pharmacopoeia, 29th.
Pharmaceutical care and documentation

- Compounding dermatologic preparations in developing countries.
Real life (!)

- June 2005
- Explosion at the market Place PAP
- 20 people shot on the airport road
- 20 other people kidnapped
- Compounding products were lost at the airport
- We did training with placebo…
Pictograms program
Making pictogram attracting
Sœur Ellissainte, responsable du dispensaire
Notre programme de pictogrammes!
KETOCONAZOLE 200MG
2 comprimés 1 fois
2/3/2009
Too hot for pictogram printers
Orphanage
120 children 2-12 years old
Diane et Dr Jim Norlund
Teaching and coaching

- Nursing School – 90
- Léogane /Bill Gates Foundation
  - Oral rehydration solutions
  - Antibiotics et antifungals
  - Typhoid fever
  - Drug interactions
    - AIDS- tuberculosis- malaria- leprosys
- Joint Medicine and Pharmacy Faculty
- Port-au-Prince 100/60
Teaching Pharmaceutical Care and AIDS interactions at the Faculty of Pharmacy and Medicine
Port au Prince
Diane, vice-dean of the Faculté de Pharmacie et Charles Milliard
AIDS treatments
Drugs non available
Filariosis
Pharmacy Library at the Faculty of medicine and pharmacy Port-au-Prince -2007
Nursing students very dedicated despite very hot and humid weather.
Teaching to nursing students.
Safety issues (!)
INTERNATIONAL

Coopérante pour Médecins du Monde
Une étudiante québécoise enlevée en Haïti

Première publication 22 mai 2008 à 10h46
Earthquake
January 12th 2010

- 25% of students and teachers died
- Leogane Hospital was completely destroyed
Collaboration with Canadian international development Agency (CIDA)
PSF- Canada

- Help the management of drugs donations received after the earthquake
- Support of the Ministry pharmacy department
  - Training
  - Help in multiple tasks
    - Drug clearance
    - Inspection
    - Essential drugs program
Partenariat avec Ministère de la santé publique et de la population

Partnership with the Public Health departement, relocalized in tents paid by Canadian government
Danielle Viens and JeanFrançois Patenaude

- Help the management of drugs donations received after the earthquake
- Support of the Ministry pharmacy department
  - Training
  - Help in multiple tasks
    - Drugs clearance
    - Inspection
    - Essential drugs program
Other system of drug distribution
Drugs sold on the street!
Anything we want
Cholera epidemic

- Emergency during our stay
- Threats of cholera
- Sending drugs to counter the epidemic
  - Rehydration solutions
  - Antibiotics
  - Disinfectants, diapers etc.
2012
Development mission at Leogane Léger Hospital is now the Haïti national hospital for the treatment of leprosy

- Valérie Clément, Quebec pharmacist
- Stock management – first in/first out system for the new drug dispensary
- Leprosy littérature review. Prevention-treatment and proper medication use.
- Lectures to nurse students – 8 hours.
Leprosy - Hansen’s disease
Mycobacterium leprae
Leger hospital reports his satisfaction to CIDA

- Contribution to stock control - less shortages of drugs
- Contribution to education of nurse students
- Compounding formulations are still used and sold at low price for Haïtian patients / micro-économie.
Infected by leprosy by age of 8
2013 -

- New mission: La Brousse (5 hours PAP)
- Collaboration UPA (Quebec support to develop micro economy in agriculture)
- Many dispensaries in the mountain.
- Education and Standardization of Technician program
- Certificate
Haïti, Caribean pearl!
(!)

- Inappropriate Donations
- pads for dressing
- blanket
- calcium supplement
Basell statements (FIP)

Optimization of Medicines Procurement

Optimizing the Influences on Prescribing

Preparation and Delivery of Medicines

Administration of Medicines

Monitoring of Medicines

Monitoring of Medicines

Human Resources and Training
Humanitarian Aid must apply the same principles and the same steps, to reach outcomes on a populational basis and not only on a patient basis. Develop real partnership not only donation, aid or even collaboration
Leger Hospital Inauguration
January 2012
Follow-up Student Humanitarian Aid Program

- PSF-Canada education program has been used to develop a specific course at the University of Montreal PHM-6513
- « Le pharmaciën humanitaire »
- 45 hours – 3 credits
- 30 students each year
Canadian pharmacy students get their adhesion free.
You are welcome!
Thank you for them.

www.pharmacistscanada.org