Extemporaneous FORMULATION

Pharmaceutical Services Division
Ministry of Health Malaysia
Extemporaneous FORMULATION

Pharmaceutical Services Division
Ministry of Health Malaysia
Lot 36, Jalan Universiti,
46350 Petaling Jaya, Selangor.
Tel: 03-78413200  Fax: 03-79682222/79682268
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Pharmaceutical Services Division,
Ministry of Health Malaysia
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Perpustakaan Negara Malaysia
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Nik Nuradlina binti Nik Adnan - Institut Kanser Negara
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Gurvinderjit Kaur - Hospital Kuala Lumpur
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INTRODUCTION

Compounding of pharmaceutical formulations remain as the core skill of pharmacists and this manual is produced to include well referenced recipes that are easy to prepare, use readily available ingredients, have the longest expiry date possible and when necessary, provide more than one strength of formulation to accommodate the unique needs of different groups of patients.

Efforts have been made to search for substantiated references in producing this manual of extemporaneous preparations. However, the lists of compounded items in this manual are not exhaustive. Preparations included in the manual are for ingredients available commercially but not in the required dosage form for therapy and thus, necessitate extemporaneous preparations.

The committee has made all reasonable efforts to confirm the accuracy of the information contained in the manual and to present the best practices as identified at the time of its completion. Formulations are only included where there is existence of published formulations and associated stability data.

The use of this manual requires knowledge based interpretation by healthcare professionals and is intended solely for use by pharmacists in healthcare facilities. All information contained in the manual has been provided with the sole intention that it be readily accessible for pharmacist’s information and as a guide for preparing extemporaneous preparations that may be prescribed.

OBJECTIVE

To standardise formulations of extemporaneous preparations and practice in healthcare facilities.
POLICY

1. Always consider the use of commercially available products as far as possible.
2. If no suitable commercial product exists, consider a therapeutic alternative that is available in a suitable dosage form. This must be discussed with the physician.
3. Extemporaneous preparations should be done based on evidence-based references.
4. Always check for the suitability of the product/brand for extemporaneous preparations.
5. Preparations listed in this manual should be done according to what is stated as far as possible unless stated otherwise in the product leaflet.
6. When no information is available, compound an oral medication by dispensing a tablet and/or capsule and directing the caregiver to mix just prior to administration.
7. Stability stated in this manual is applicable for shelf storage in the pharmacy without opening. Once opened, the stability of the preparation should be no longer than 30 days. Maximum quantity of the extemporaneous preparations to be dispensed should not exceed one month.
8. Refrain assumptions on the therapeutic equivalence in the case of suggesting alternative agents as the possibilities and supporting data may be limited.
9. Techniques in compounding preparations and manipulations should always be in line with the standard Good Preparation Practice as delivering an accurate dose is paramount.
10. Staff and facilities are challenged to undertake intermittent competency assessments in order to achieve the standards requirement.
11. Documentation after each preparation should include details on the materials used, processes involved and the responsible personnel in charge.
CONSIDERATIONS FOR PREPARING EXTEMPORANEOUS COMPOUNDS

1. Pharmacy personnel are reminded not to empirically change flavourings or suspending agents because they can affect the pH and stability of the product and result in an unstable product.

2. Please consider ingredients in the formulations that require special precautions in neonates.

3. Mixing of a compounded formulation should always be in line with the following principles:
   a. Ensure that all ingredients used are within the expiry date.
   b. Ensure that all utensils are clean; including mortar and pestle, graduates, pill cutters and stirring rods.
   c. Product should be labelled clearly and stored as recommended within the formula.
   d. For solution or suspension products, emphasise on the importance of thorough shaking before administration.

4. If compounding a preparation using contents from an ampoule, remember to withdraw the solution (medication) from the ampoule using a filter needle to ensure no glass particles are incorporated into the compound.

5. Place tablet(s) within mortar and pestle to grind tablets to a fine powder. For film-coated tablets, it may be necessary to add a small amount of diluents such as water, to soften the coating prior to grinding the tablets. This will ensure that the compound will not have an eggshell appearance from the film coating floating throughout the suspension. If you are using capsules, open the capsule and empty the powder into the mortar and discard the capsule shell.

6. Solutions will have a clearer appearance versus a compounded suspension.
7. Manipulations of the available dosage forms in order to fulfil the unusual practitioner’s request may impose risks such as preparation and administration errors as well as unpredictable bioavailability, compatibility and stability profile.

8. Understand the roles of excipients in certain formulations and consider their risks over benefits limitation.

9. If distilled water is not available, water for injection can be used as a substitution, and vice versa.
WORK FLOW CHART 1:
SOURCING THE COMPOUNDING FORMULARY LIST OF
EXTEMPORANEOUS PREPARATION MEDICINES

1. Identify list of extemporaneous medicines currently being used
   - Do not proceed
   - Check appropriateness of medicine
     - Get company/manufacturer to register/produce
     - Check registration status
       - Apply to get in into the FUKKM list if used extensively
         - Determine FUKKM status
           - Check commercial availability
             - Check cost of commercial product versus cost of preparing medicine
               - Propose hospital to purchase
               - Prepare and dispense extemporaneous medicine
               - Prepare and dispense extemporaneous medicine
# CHECKLIST 1:
SOURCING THE COMPOUNDING FORMULARY LIST OF EXTEMPORANEOUS PREPARATION MEDICINES

<table>
<thead>
<tr>
<th>NO</th>
<th>ACTION</th>
<th>TICK (√)</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identify list of extemporaneous medicines currently being used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Check appropriateness of medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Check registration status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Determine FUKKM status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Check commercial availability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Check cost of commercial product versus cost of preparing medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Propose hospital to purchase</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WORK FLOW CHART 2:
HANDLING OF PRESCRIPTIONS WITH EXTEMPORANEOUS PREPARATION MEDICINES IN THE PHARMACY

Receive prescription

- Dispense

  - Check availability of medicine in pharmacy

  - YES → Dispense alternative medicine

  - NO → Discuss with medical practitioner on alternative medicine

- NO → Obtain and dispense within 24 hours

  - YES → Check commercially available status at pharmacy retail outlet

  - NO → Search for evidence-based reference / product leaflet to prepare extemporaneous medicine

- NO → Prepare and dispense extemporaneous medicine

  - YES → Instruct patient on how to prepare prior to administration, if need to prepare stat each time

  - NO → Dispense tablet / capsule and counsel patient accordingly
STANDARD LABEL DESIGN & WORKSHEET REQUIREMENTS FOR EXTEMPORANEOUS PREPARATIONS

The proposed label for extemporaneous preparations must have the information as shown below:

**HOSPITAL/KLINIK KESIHATAN**  
Jalan Alamat 1, Poskod 12345 Daerah, Negeri  
Tel: 03-9876 5432

<table>
<thead>
<tr>
<th>Details of Hospital/Klinik Kesihatan</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Details of Patient</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Administration Instructions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Drug’s Name with Strength</th>
</tr>
</thead>
</table>

The worksheet of the product should contain the following details:

- Patient’s name
- ID number
- Prescription number
- Date of preparation
- Name of drug
- Dose
- Volume of diluent/vehicle
- Batch number of preparations & starting materials
- Name and signature of preparing personnel
- Name and signature of checking personnel
## CHECKLIST 2: HANDLING OF PRESCRIPTIONS WITH EXTEMPORANEOUS PREPARATION MEDICINES IN THE PHARMACY

<table>
<thead>
<tr>
<th>NO</th>
<th>ACTION</th>
<th>TICK (√)</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Receive prescription</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Check availability of medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Discuss with medical practitioner on alternative medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Check commercially available status at retail pharmacy outlet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Search for evidence-based reference to prepare extemporaneous medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Instruct patient/caregiver on how to prepare prior to administration of medicine, if needed to prepare stat each time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Dispense medicine and counsel patient/caregiver accordingly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. **ACETAZOLAMIDE SUSPENSION 25MG/ML**

**Generic Name**: Acetazolamide  
**Indication**: Reduction of intra-ocular pressure in open-angle glaucoma, secondary glaucoma and peri-operatively in angle-closure glaucoma  
**Dosage Form**: Suspension  
**Strength**: 25mg/mL  
**Stability**: 60 days  
**Storage**: Refrigerate (preferable) or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetazolamide</td>
<td>250mg</td>
<td>12 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**  
- Ora-Sweet® : Ora-Plus® (1:1) or  
- Ora-Sweet SF® : Ora-Plus® (1:1) or  
- Ora-Blend SF® or  
- Cherry syrup or  
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

**PROCEDURE:**  
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with small amount of vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**

**REFERENCES:**  
2. **ALLOPURINOL SUSPENSION 20MG/ML**

Generic Name: Allopurinol  
Indication: Gout or uric acid and calcium oxalate renal stones  
Dosage Form: Suspension  
Strength: 20mg/mL  
Stability: 60 days  
Storage: Refrigerate (preferable) or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allopurinol</td>
<td>300mg</td>
<td>8 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- Ora-Sweet®: Ora-Plus® (1:1) or
- Ora-Sweet SF®: Ora-Plus®(1:1) or
- Ora-Blend® or
- Ora-Blend SF® or
- Cherry syrup or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)
- Methylcellulose 1%: Simple Syrup (1:1)

**PROCEDURE:**
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with small amount of vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**

**REFERENCES:**
3. ALPRAZOLAM SUSPENSION 1MG/ML

Generic Name: Alprazolam
Indication: Anxiety disorders
Dosage Form: Suspension
Strength: 1mg/mL
Stability: 60 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam</td>
<td>1mg</td>
<td>60 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>60mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
• X-Temp® Oral Suspension System

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:

REFERENCES:
4. **AMIODARONE SUSPENSION 40MG/ML**

- **Generic Name**: Amiodarone
- **Indication**: Arrhythmias
- **Dosage Form**: Suspension
- **Strength**: 40mg/mL
- **Stability**: 28 days
- **Storage**: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiodarone</td>
<td>200mg</td>
<td>20 tablets</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>-</td>
<td>~10mL</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- X-Temp® Oral Suspension System

**PROCEDURE:**
1. Measure out the vehicle and adjust the pH to pH 6-7 using Sodium Bicarbonate 5% solution.
2. Grind the tablets to fine powder in a mortar and levigate the powder using a small amount of vehicle (pH adjusted) to form smooth paste.
3. Gradually add the vehicle (pH adjusted) in small amounts to the paste, mix well until liquid is formed and transfer into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and add to the container.
5. Make up the final volume using more vehicle (pH adjusted) and stir well.
6. Shake well and label.

**NOTES:**
1. Shake the bottle before consume.

**REFERENCES:**
5. **AMLODIPINE SUSPENSION 1MG/ML**

Generic Name : Amlodipine  
Indication : Hypertension  
Dosage Form : Suspension  
Strength : 1mg/mL  
Stability : 30 days  
Storage : Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amlodipine</td>
<td>10mg</td>
<td>6 tablets</td>
</tr>
<tr>
<td>Distilled water</td>
<td>-</td>
<td>3-4mL</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>60mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- X-Temp® Oral Suspension System

**PROCEDURE:**
1. Crush tablets in a mortar to fine powder.
2. Add 3-4mL of distilled water to disintegrate the tablets.
3. Levigate the powder with small amount of vehicle until smooth paste is formed.
4. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
5. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
6. Make up to final volume with vehicle.
7. Shake well and label.

**NOTES:**

**REFERENCES:**
6. **ATENOLOL SUSPENSION 2MG/ML**

**Generic Name**: Atenolol  
**Indication**: Hypertension, angina pectoris, myocardial infarction and arrhythmias  
**Dosage Form**: Suspension  
**Strength**: 2mg/mL  
**Stability**: 14 days or 90 days  
**Storage**: Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atenolol</td>
<td>100mg</td>
<td>1 tablet</td>
</tr>
<tr>
<td>Glycerin</td>
<td>-</td>
<td>2mL</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>50mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**  
- Simple Syrup (stability 14 days) or  
- Ora-Sweet® (stability 14 days) or  
- Ora-Sweet SF® (stability 90 days)

**PROCEDURE:**  
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with glycerin until smooth paste is formed.  
3. Add vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**  
1. Ora-Sweet SF® should not be used in neonates ≤28 days corrected age.

**REFERENCES:**  
7. **BACLOFEN SUSPENSION 5MG/ML**

**Generic Name**: Baclofen  
**Indication**: Spasticity of the skeletal muscle  
**Dosage Form**: Suspension  
**Strength**: 5mg/mL  
**Stability**: 35 days  
**Storage**: Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baclofen</td>
<td>10mg</td>
<td>30 tablets</td>
</tr>
<tr>
<td>Glycerine</td>
<td>-</td>
<td>3mL</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>60mL</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Grind tablets in a mortar to fine powder.  
2. Add glycerin to make fine paste.  
3. Add about 15ml of simple syrup to the paste, triturate well and transfer the contents into a graduated cylinder.  
4. Rinse the mortar with about 15ml of simple syrup and transfer the contents into the graduated cylinder.  
5. Repeat the last step as necessary to bring the final volume to 60ml.

**NOTES:**
1. Keep in an amber glass bottle.

**REFERENCES:**
8. **BACLOFEN SUSPENSION 10MG/ML**

Generic Name : Baclofen  
Indication : Spasticity of the skeletal muscle  
Dosage Form : Suspension  
Strength : 10mg/mL  
Stability : 60 days  
Storage : Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baclofen</td>
<td>10mg</td>
<td>120 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- Ora-Sweet® : Ora-Plus® (1:1) or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)  
- X-Temp® Oral Suspension System

**PROCEDURE:**
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**

**REFERENCES:**
9. **CAFFEINE CITRATE SOLUTION 10MG/ML**

Generic Name : Caffeine Citrate  
Indication : Apnoea of prematurity  
Dosage Form : Solution  
Strength : 10mg/mL  
Stability : 30 days  
Storage : Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caffeine Citrate Anhydrous BP</td>
<td>-</td>
<td>1g</td>
</tr>
<tr>
<td>Citric acid anhydrous BP</td>
<td>-</td>
<td>1g</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- Distilled water or water for injection

**PROCEDURE:**
1. Weigh the powders and mix with a small amount of vehicle in a measuring cylinder.
2. Add more vehicle to the mixture and make up to final volume with the vehicle.
3. Make up to final volume with vehicle and transfer into a suitable container.
4. Shake well and label.

**NOTES:**
1. Chemically stable for at least 90 days but the potential for microbial growth was not assessed.
2. Refrigeration recommended to reduce potential for microbial growth. Observe for precipitation.
3. Equivalent to 5mg per mL anhydrous caffeine base.
4. Shake well before consume.

**REFERENCES:**
10. CAPTOPRIL SYRUP 1MG/ML

Generic Name: Captopril
Indication: i) Hypertension ii) Congestive heart failure
            iii) Post-myocardial infarction iv) Diabetic nephropathy
Dosage Form: Syrup
Strength: 1mg/mL
Stability: 30 days
Storage: Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captopril</td>
<td>25mg</td>
<td>4 tablets</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with simple syrup until smooth paste is formed.
3. Add more simple syrup to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber glass bottle.

REFERENCES:
11. CAPTOPRIL SOLUTION 1MG/ML

Generic Name: Captopril
Indication: i) Hypertension  ii) Congestive heart failure
           iii) Post-myocardial infarction  iv) Diabetic nephropathy
Dosage Form: Solution
Strength: 1mg/mL
Stability: 56 days
Storage: Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captopril</td>
<td>25mg</td>
<td>4 tablets</td>
</tr>
<tr>
<td>Ascorbic Acid</td>
<td>500mg</td>
<td>1 tablet</td>
</tr>
<tr>
<td>Distilled Water</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Allow the captopril tablets to dissolve in 50mL of distilled water in a graduated cylinder.
2. Add 500mg of ascorbic acid tablet to the mixture and make to final volume with distilled water.
3. Shake well and label.

NOTES:
1. A sulfur like odour is not indicative of captopril degradation.

REFERENCES:
12. CARBIDOPA/LEVODOPA (SINEMET®) SUSPENSION 1.25MG CARBIDOPA/5MG LEVODOPA/ML

Generic Name : Carbidopa/Levodopa (Sinemet®)
Indication : Parkinson’s disease
Dosage Form : Suspension
Strength : 1.25mg Carbidopa/5mg Levodopa/mL
Stability : 42 days if refrigerated or 28 days at room temperature
Storage : Refrigerate (preferred) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinemet ®</td>
<td>25mg/100mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100 mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Sweet® : Ora-Plus® (1:1) or
- Ora-Blend ® or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Suspension stored at room temperature may change colour to darker yellow.

REFERENCES:
13. CARVEDILOL SUSPENSION 0.5MG/ML

Generic Name: Carvedilol  
Indication: Treatment of stable moderate to severe congestive cardiac failure in addition to ACE inhibitors and diuretics  
Dosage Form: Suspension  
Strength: 0.5 mg/mL  
Stability: 30 days  
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvedilol</td>
<td>12.5mg</td>
<td>4 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Sweet®: Ora-Plus® (1:1) or  
- Ora-Blend® or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with small amount of vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

NOTES:
1. Keep in an amber glass bottle.

REFERENCES:
14. CARVEDILOL SUSPENSION 1MG/ML

Generic Name: Carvedilol
Indication: Treatment of stable moderate to severe congestive cardiac failure in addition to ACE inhibitors and diuretics
Dosage Form: Suspension
Strength: 1mg/mL
Stability: 84 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvedilol</td>
<td>12.5mg</td>
<td>8 tablets</td>
</tr>
<tr>
<td>Sterile water for injection</td>
<td>-</td>
<td>10mL</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**
- Ora-Sweet® : Ora-Plus®(1:1) or
- Ora-Blend® or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

**PROCEDURE:**
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with 10mL of sterile water for injection until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

**NOTES:**
1. Keep in an amber glass bottle.

**REFERENCES:**
15. CHLOROQUINE SUSPENSION 15MG/ML

Generic Name  : Chloroquine
Indication    : Treatment of malaria - acute attack
Dosage Form   : Suspension
Strength      : 15mg/mL
Stability     : 60 days
Storage       : Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroquine</td>
<td>250mg</td>
<td>6 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**

- Ora-Sweet®: Ora-Plus® (1:1) or
- Ora-Sweet SF®: Ora-Plus® (1:1) or
- Ora-Blend® or
- Ora-Blend SF® or
- Cherry syrup or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

**PROCEDURE:**

1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

**NOTES:**

1. Provides 9mg/mL of chloroquine base.
2. Keep in an amber plastic bottle.
3. Ora-Sweet SF® and Ora-Blend SF® should not be used in neonates ≤28 days corrected age.

**REFERENCES:**

16. CITRIC ACID 25%

Generic Name : Citric Acid
Dosage Form : Solution
Strength : 25% (0.25g/mL)
Stability : 60 days
Storage : Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid powder, monohydrate</td>
<td>-</td>
<td>12.5g</td>
</tr>
<tr>
<td>Distilled water</td>
<td>qs</td>
<td>50mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Weigh the citric acid.
2. Add approximately 30mL of distilled water and stir well.
3. Make up to final volume of 50mL.

NOTES:
1. Bottle or container must not have rubber cap liners.

REFERENCES:
17. CLONAZEPAM SUSPENSION 0.1MG/ML

Generic Name: Clonazepam
Indication: i) Epilepsy ii) Non-epileptic myoclonus
Dosage Form: Suspension
Strength: 0.1mg/mL
Stability: 60 days
Storage: Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonazepam</td>
<td>2mg</td>
<td>6 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Blend® or Ora-Blend SF® or
- Ora-Plus®: Ora-Sweet® (1:1) or
- Ora-Plus®: Ora-Sweet SF (1:1) Cherry Syrup or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

PROCEDURE:
1. Grind up tablets in mortar.
2. Levigate powders with small amount of vehicle until homogenous.
3. Make up to the final volume using vehicle.

NOTES:
1. Keep in an amber glass bottle. Clonazepam solutions should not be stored in polyvinyl chloride (plastic) bottle or polypropylene (oral syringes) for longer than 24 hours.
2. Ora-Sweet SF® and Ora-Blend SF® should not be used in neonates ≤28 days corrected age.

REFERENCES:
18. CLOPIDOGREL SUSPENSION 5MG/ML

Generic Name : Clopidogrel  
Indication : Prevention of myocardial infarction, stroke or established peripheral arterial disease  
Dosage Form : Suspension  
Strength : 5mg/mL  
Stability : 60 days  
Storage : Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clopidogrel</td>
<td>75mg</td>
<td>8 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
• X-Temp® Oral Suspension System

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber plastic bottle.
2. Shake well before consume.

REFERENCES:
19. DAPSONE SUSPENSION 2MG/ML

Generic Name: Dapsone
Indication: Leprosy, Dermatitis herpetiformis
Dosage Form: Suspension
Strength: 2mg/mL
Stability: 91 days
Storage: Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dapsone</td>
<td>100mg</td>
<td>2 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Blend® or Ora-Blend SF® or
- Ora-Plus® : Ora-Sweet® (1:1) or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Preparation may slightly darken at room temperature.
2. Ora-Blend SF® should not be used in neonates ≤28 days corrected age.

REFERENCES:
20. DEXAMETHASONE SUSPENSION 0.5MG/ML

Generic Name: Dexamethasone
Indication: Croup, Septic shock, cerebral oedema and respiratory distress syndrome
Dosage Form: Suspension
Strength: 0.5mg/mL
Stability: 91 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dexamethasone (Sodium Phosphate Injection)</td>
<td>4mg/mL</td>
<td>12.5mL</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- X-Temp® Oral Suspension System

PROCEDURE:
1. Draw up the required amount of injection using a 5µm filter needle or filter straw and transfer to a measuring cylinder.
2. Add the sufficient quantity of vehicle and stir well.
3. Make up to final volume with vehicle.
4. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
21. DIPYRIDAMOLE SUSPENSION 10MG/ML

Generic Name: Dipyridamole
Indication: As an adjunct to oral anticoagulation/antiplatelet therapy
Dosage Form: Suspension
Strength: 10mg/mL
Stability: 60 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dypiridamole</td>
<td>25mg</td>
<td>40 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- X-Temp® Oral Suspension System

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:

REFERENCES:
22. ENALAPRIL SUSPENSION 0.1MG/ML

Generic Name : Enalapril  
Indication : i) Hypertension  ii) Congestive heart failure  
Dosage Form : Suspension  
Strength : 0.1mg/mL  
Stability : 14 days  
Storage : Room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enalapril</td>
<td>10 mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Distilled water</td>
<td>qs</td>
<td>500mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to make fine powders.
2. Levigate powders with small amount of distilled water until homogenous.
3. Add more distilled water to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:

REFERENCES:
23. **ENALAPRIL SUSPENSION 1MG/ML**

**Generic Name**: Enalapril  
**Indication**: i) Hypertension  
ii) Congestive heart failure  
**Dosage Form**: Suspension  
**Strength**: 1mg/mL  
**Stability**: 60 days  
**Storage**: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enalapril</td>
<td>20mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**  
• X-Temp® Oral Suspension System

**PROCEDURE:**  
1. Crush tablets in mortar to make fine powders.  
2. If needed, soak tablets in small amount of vehicle.  
3. Add vehicle in small quantities until smooth paste is formed. Add more vehicle to the paste until liquid is formed.  
4. Transfer the contents into a graduated cylinder.  
5. Use additional vehicle to rinse the remaining drug from the mortar and add it into the graduate.  
6. Make up to final volume with vehicle. Stir well.  
7. Transfer suspension to final container and label.

**NOTES:**  
1. Keep in an amber bottle.

**REFERENCES:**  
**24. FERRIC AMMONIUM CITRATE 400MG/5ML MIXTURE**

**Generic Name**: Ferric Ammonium Citrate  
**Indication**: Prevention and treatment of iron deficiency anaemia  
**Dosage Form**: Mixture  
**Strength**: 400mg/5ml  
**Stability**: 3 months  
**Storage**: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferric Ammonium Citrate</td>
<td>-</td>
<td>80g</td>
</tr>
<tr>
<td>Chloroform Water Double-Strength BP</td>
<td>-</td>
<td>500ml</td>
</tr>
<tr>
<td>Lemon Spirit</td>
<td>-</td>
<td>2ml</td>
</tr>
<tr>
<td>Syrup BP/Syrup Simplex</td>
<td>-</td>
<td>100ml</td>
</tr>
<tr>
<td>Distilled water</td>
<td>qs</td>
<td>1000ml</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Prepare chloroform water double strength BP by mixing chloroform water BP with sterile water for (1:200) ratio.
2. Add Ferric Ammonium Citrate powder and stir.
3. Add simplex syrup and lemon lime essence. Stir well.
4. Add sufficient water to make up the final volume required.

**NOTES:**

**REFERENCES:**
25. FOLIC ACID SUSPENSION 1MG/ML

Generic Name: Folic Acid
Indication: Folate deficiency
Dosage Form: Suspension
Strength: 1mg/mL
Stability: 60 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folic Acid</td>
<td>5mg</td>
<td>20 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- X-Temp® Oral Suspension System

PROCEDURE:
1. Crush tablets in mortar to make fine powders.
2. Add vehicle in small quantities until smooth paste is formed. Add more vehicle to the paste until liquid is formed.
3. Transfer the contents into a graduated cylinder.
4. Use additional vehicle to rinse the remaining drug from the mortar and add it into the graduate.
5. Make up to final volume with vehicle. Stir well.
6. Transfer suspension to final container and label.

NOTES:

REFERENCES:
26. GABAPENTIN SUSPENSION 100MG/ML

Generic Name : Gabapentin
Indication : Epilepsy, Neuropathic pain
Dosage Form : Suspension
Strength : 100mg/mL
Stability : 28 days
Storage : Room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabapentin</td>
<td>300mg</td>
<td>20 capsules</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>60mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
• X-Temp® Oral Suspension System

PROCEDURE:
1. Carefully empty the capsules content into a mortar.
2. Add vehicle in small quantities until smooth paste is formed. Add more vehicle to the paste until liquid is formed.
3. Transfer the contents into a graduated cylinder.
4. Use additional vehicle to rinse the remaining drug from the mortar and add it into the graduate.
5. Make up to final volume with vehicle. Stir well.
6. Transfer suspension to final container and label.

NOTES:

REFERENCES:
27. GLYCOPYRROLATE SYRUP 0.1MG/ML

Generic Name: Glycopyrrolate
Indication: To reduce excessive drooling
Dosage Form: Syrup
Strength: 0.1mg/mL
Stability: 14 days
Storage: Refrigerate (preferable) or at room temperature and protect from light.

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycopyrrolate injection</td>
<td>200mcg/mL</td>
<td>5mL</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>10mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Break the ampoule and syringe out the content of glycopyrrolate from the ampoule with 5 µm filter into a mortar.
2. Add the sufficient quantity of simple syrup and stir well.
3. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
4. Make up to final volume with simple syrup.
5. Shake well and label.

NOTES:
1. Keep in an amber plastic bottle.

REFERENCES:
28. HYDROCHLOROTHIAZIDE SUSPENSION 5MG/ML

Generic Name: Hydrochlorothiazide
Indication: Diuretic, hypertension
Dosage Form: Suspension
Strength: 5mg/mL
Stability: 60 days
Storage: Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochlorothiazide</td>
<td>25mg</td>
<td>20 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100 mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
• X-Temp® Oral Suspension System

PROCEDURE:
1. Crush tablets in mortar to make fine powders.
2. If needed, soak tablets in a small amount of vehicle.
3. Add vehicle in small quantities until smooth paste is formed. Add more vehicle to the paste until liquid is formed.
4. Transfer the contents into a graduated cylinder.
5. Use additional vehicle to rinse the remaining drug from the mortar and add it into the graduate.
6. Make up to final volume with vehicle. Stir well.
7. Transfer suspension to a container and label.

NOTES:

REFERENCES:
29. INDOMETHACIN SYRUP 5MG/ML

Generic Name: Indomethacin
Indication: Pain and inflammation in rheumatic disease
Dosage Form: Syrup
Strength: 5mg/mL
Stability: 60 days
Storage: Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indomethacin</td>
<td>25mg</td>
<td>20 capsules</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Open capsules and empty the contents into a mortar.
2. Levigate the powder with small amount of simple syrup until smooth paste is formed.
3. Add more simple syrup to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with simple syrup.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
30. ISONIAZID SYRUP 10MG/ML

Generic Name : Isoniazid
Indication : i) Tuberculosis  ii) Tuberculous meningitis
Dosage Form : Syrup
Strength : 10mg/mL
Stability : 21 days
Storage : Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isoniazid</td>
<td>100mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Distilled water</td>
<td>-</td>
<td>10mL</td>
</tr>
<tr>
<td>Sorbitol 70% Solution</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to a fine powder.
2. Levigate the powder with 10mL of distilled water until a smooth paste is formed.
3. Add Sorbitol 70% to the paste until a liquid is formed and transfer the liquid into the container.
4. Use additional Sorbitol 70% to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with Sorbitol 70%.
6. Shake well and label.

NOTES:
1. Do not use sugar based syrups.

REFERENCES:
31. LABETALOL SYRUP 10MG/ML

Generic Name: Labetalol
Indication: Hypertension
Dosage Form: Syrup
Strength: 10mg/mL
Stability: 28 days
Storage: Refrigerate (preferable) or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labetalol</td>
<td>100mg</td>
<td>12 tablets</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of Simple syrup until smooth paste is formed.
3. Add more Simple syrup to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:

REFERENCES:
32. LABETALOL SYRUP 40MG/ML

Generic Name : Labetalol
Indication : Hypertension
Dosage Form : Syrup
Strength : 40mg/mL
Stability : 60 days
Storage : Refrigerate (preferable) or at room temperature and protect from light.

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labetalol</td>
<td>100mg</td>
<td>48 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Sweet® : Ora-Plus®(1:1) or
- Ora-Blend® or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to a fine powder.
2. Levigate the powder with small amount of vehicle until a smooth paste is formed.
3. Add more vehicle to the paste until a liquid is formed and transfer the liquid into the container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber plastic (polyethylene terephthalate) bottle.

REFERENCES:
33. LANSOPRAZOLE SUSPENSION 3MG/ML

Generic Name: Lansoprazole

Indication:
i) Peptic ulcer disease
ii) Reflux oesophagitis
iii) Zollinger-Ellison Syndrome
iv) For eradication of Helicobacter pylori in combination with antibiotic

Dosage Form: Suspension
Strength: 3mg/mL
Stability: 14 days (refrigerated), 8 hours (room temperature)
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lansoprazole</td>
<td>30mg</td>
<td>10 capsules</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4% injection</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Open capsules and empty the contents into a mortar.
2. Syringe out sodium bicarbonate 8.4% injection solution from ampoule using 5µ filter.
3. Levigate the powder with small amount of sodium bicarbonate solution until smooth paste is formed.
4. Add more sodium bicarbonate solution to the paste until liquid is formed and transfer the liquid into a graduated container.
5. Use additional sodium bicarbonate solution to rinse the remaining drug from the mortar and pour into the container.
6. Make up to final volume with sodium bicarbonate solution.
7. Shake well and label.

NOTES:
1. Keep in an amber plastic bottle or oral syringes.

REFERENCES:
34. LORAZEPAM SYRUP 0.4MG/ML

Generic Name : Lorazepam  
Indication : i) Severe anxiety ii) Insomnia  
Dosage Form : Syrup  
Strength : 0.4mg/mL  
Stability : 30 days  
Storage : Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam</td>
<td>2mg</td>
<td>15 tablets</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>qs</td>
<td>75mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of simple syrup until smooth paste is formed.
3. Add more simple syrup to the paste until liquid is formed and transfer the liquid into a graduated container.
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with simple syrup.
6. Shake well and label.

NOTES:

REFERENCES:
35. METHYLCCELLULOSE SUSPENDING AGENT 1% (0.01G/ML)

Generic Name: Methylcellulose
Dosage Form: Suspending Agent
Strength: 1% (0.01g/mL)
Stability: 6 months
Storage: Room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylcellulose Powder</td>
<td>CPS 1500</td>
<td>10g</td>
</tr>
<tr>
<td>Sodium Benzoate Powder</td>
<td>-</td>
<td>2g</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>qs</td>
<td>1,000mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Dissolve Sodium Benzoate in 200mL of boiling distilled water.
2. Add Methylcellulose powder and stir well for 2-3 minutes (use blender if available). Make sure mixture is sufficiently heated so powders are completely dissolved.
3. Add 800mL ice cold water (carefully but quickly) and stir or blend well for 10 minutes.
4. Transfer to a 1 litre bottle.
5. Place on side and refrigerate overnight (minimum 4 hours) until liquid converts to gel.

NOTES:
1. Mixture is initially cloudy, becoming crystal clear with adequate cooling/refrigeration and time.
2. Discard 30 days after opening.

REFERENCES:
36. METOPROLOL SUSPENSION 10MG/ML

Generic Name: Metoprolol
Indication: Hypertension, angina, myocardial infarction, arrhythmias
Dosage Form: Suspension
Strength: 10mg/mL
Stability: 60 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metoprolol</td>
<td>100mg</td>
<td>12 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE OF CHOICE:
- Ora-Sweet®: Ora-Plus® (1:1) or
- Ora-Sweet SF®: Ora-Plus® (1:1) or
- Ora-Blend® or
- Ora-Blend SF® or
- Cherry syrup or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber plastic bottle.
2. Ora-Sweet® SF and Ora-Blend SF® should not be used in neonates ≤28 days corrected age.

REFERENCES:
37. MIDAZOLAM SYRUP 2MG/ML

Generic Name: Midazolam
Indication: Pre-operative sedation, induction of general anaesthesia, premedication and sedation in ICU and sedation for minor procedures
Dosage Form: Syrup
Strength: 2mg/mL
Stability: 56 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midazolam injection</td>
<td>5mg/mL</td>
<td>48mL</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Break the ampoule and syringe out the content of Midazolam from the ampoule with 5 µm filter into a mortar.
2. Add the sufficient quantity of simple syrup and stir well.
3. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
4. Make up to final volume with simple syrup.
5. Shake well and label.

NOTES:
1. Undiluted injection can be administered orally.
2. Injection may contain benzyl alcohol.

REFERENCES:
38. NIFEDIPINE SUSPENSION 1MG/ML

Generic Name : Nifedipine
Indication : Hypertension
Dosage Form : Suspension
Strength : 1mg/mL
Stability : 28 days
Storage : Refrigerate (preferable) or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nifedipine</td>
<td>10mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Methylcellulose 1%</td>
<td>qs</td>
<td>50mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of Methylcellulose 1% until smooth paste is formed.
3. Add more Methylcellulose 1% to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional Methylcellulose 1% to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with Methylcellulose 1%.
6. Shake well and label.

NOTES:

REFERENCES:
39. NIFEDIPINE SUSPENSION 4MG/ML

Generic Name: Nifedipine  
Indication: Hypertension  
Dosage Form: Suspension  
Strength: 4mg/mL  
Stability: 90 days  
Storage: Refrigerate (preferable) or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nifedipine</td>
<td>10mg</td>
<td>12 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>30mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
• Ora-Sweet® : Ora-Plus® (1:1) or  
• Ora-Blend® or  
• Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with small amount of vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
40. NITROFURANTOIN SUSPENSION 10MG/ML

Generic Name : Nitrofurantoin
Indication : Uncomplicated lower urinary tract infections
Dosage Form : Suspension
Strength : 10mg/mL
Stability : 91 days
Storage : Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrofurantoin</td>
<td>100mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
- Ora-Sweet®: Ora-Plus® (1:1) or
- Ora-Blend® or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to a fine powder.
2. Levigate the powder with small amount of vehicle until a smooth paste is formed.
3. Add more vehicle to the paste until a liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle. Do not freeze.
2. If use X-Temp® Oral Suspension System, the stability of the product is 60 days.

REFERENCES:
41. OMEPRAZOLE SUSPENSION 2MG/ML

Generic Name: Omeprazole

Indication:
- i) Reflux oesophagitis, eradication of H. Pylori infection, benign peptic ulcer not responding to conventional therapy, Zollinger-Ellison Syndrome
- ii) Endoscopically confirmed peptic ulcer

Dosage Form: Suspension

Strength: 2mg/mL

Stability: 14 days (room temperature) or 30 days (refrigerate)

Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omeprazole (capsules or tablets)</td>
<td>20mg</td>
<td>10 capsules</td>
</tr>
<tr>
<td>Sodium Bicarbonate Injection</td>
<td>8.4%</td>
<td>10 amp x 10mL</td>
</tr>
</tbody>
</table>

PROCEDURE:

Capsules
1. Empty contents of capsules in a mortar and cover with sodium bicarbonate and stir the mixture.
2. Add more sodium bicarbonate to form liquid and then transfer to a graduated container.
3. Rinse the mortar with additional sodium bicarbonate and make up to the final volume required.

Tablets
1. Place tablets in mortar and soak in sodium bicarbonate for 20 minutes.
2. Crush tablets to form slurry and stir the mixture well.
3. Add more sodium bicarbonate to form liquid and then transfer to a graduated container.
4. Rinse mortar with additional sodium bicarbonate and make up to the final volume required.

NOTES:
1. Keep in an amber glass bottle.
2. Colour changes of the preparation might occur.

REFERENCES:
42. PANTOPRAZOLE 2MG/ML

Generic Name : Pantoprazole
Indication : i) Reflux oesophagitis, eradication of H. Pylori infection, benign peptic ulcer not responding to conventional therapy, Zollinger-Ellison Syndrome 
ii) Endoscopically confirmed peptic ulcer
Dosage Form : Solution
Strength : 2mg/mL
Stability : 62 days
Storage : Refrigerate

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pantoprazole sodium</td>
<td>20mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>Powder</td>
<td>8.4g</td>
</tr>
<tr>
<td>Distilled water</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of distilled water until smooth paste is formed.
3. Add more distilled water to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional distilled water to rinse the remaining drug from the mortar and pour into the container. While stirring, add sodium bicarbonate powder. Stir until tablets disintegrate.
5. Make up to final volume with distilled water.

NOTES:

REFERENCES:
43. PENTOXIFYLLINE SOLUTION 20MG/ML

Generic Name: Pentoxifylline
Indication: Peripheral vascular disease
Dosage Form: Solution
Strength: 20mg/mL
Stability: 91 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentoxifylline Tablets</td>
<td>400mg</td>
<td>12 tablets</td>
</tr>
<tr>
<td>Distilled Water</td>
<td>qs</td>
<td>240mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of distilled water until smooth paste is formed.
3. Add more distilled water to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional distilled water to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with distilled water.
6. Shake well and label.

NOTES:
1. Keep in an amber glass bottle.

REFERENCES:
44. **PHENOBARBITONE SUSPENSION 10MG/ML**

Generic Name: Phenobarbitone  
Indication: Epilepsy  
Dosage Form: Suspension  
Strength: 10mg/mL  
Stability: 115 days  
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenobarbitone</td>
<td>30mg</td>
<td>20 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>60mL</td>
</tr>
</tbody>
</table>

**VEHICLE CHOICE:**  
- Ora-Sweet® : Ora-Plus® (1:1) or  
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

**PROCEDURE:**  
1. Crush tablets in a mortar to fine powder.  
2. Levigate the powder with small amount of vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**  
1. Keep in an amber plastic bottle.

**REFERENCES:**  
45. PHYTOMENADIONE (VITAMIN K1) LIQUID 1MG/ML

Generic Name: Phytomenadione (Vitamin K1)
Indication: Vitamin K deficiency due to liver failure
Dosage Form: Liquid
Strength: 1mg/mL
Stability:
- Sterile water (preferred): 104 days
- Simple Syrup: 111 days
Storage: Refrigerate or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phytomenadione Injection</td>
<td>10mg</td>
<td>1mL</td>
</tr>
<tr>
<td>Sterile Water or Simple Syrup</td>
<td>qs</td>
<td>10mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Using a 5µm filter, withdraw the required amount of Vitamin K1 and transfer into an amber glass bottle.
2. Add vehicle and mix well.

NOTES:
1. Keep in an amber glass bottle.
2. Sterile water formulation is preferred in neonates due to absence of dyes and lower osmolarity.
3. This preparation contains benzyl alcohol, special precaution for children less than 2 years old.

REFERENCES:
46. **PROPRANOLOL SUSPENSION 0.5MG/ML**

**Generic Name**: Propranolol  
**Indication**: Dysrhythmias, tachycardia, hypertrophic obstructive cardiomyopathy (For cardiologist only)  
**Dosage Form**: Suspension  
**Strength**: 0.5mg/mL  
**Stability**: 30 days  
**Storage**: Room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propranolol</td>
<td>40mg</td>
<td>3 tablets</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>240mL</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Crush tablets in a mortar to a fine powder.
2. Levigate the powder with distilled water until smooth.
3. Add a small amount of simple syrup to form a smooth paste. Add more syrup until a liquid is formed and transfer the contents into a graduate cylinder. Use additional simple syrup to rinse the remaining drug from the mortar.
4. To make up final volume with simple syrup.
5. Transfer the suspension into the amber bottle.
6. Shake well and label.

**NOTES:**
1. Due to the lack of microbial testing and evaluation of stability under in use conditions, a maximum expiry date of 30 days is recommended for these formulations.

**REFERENCES:**

47. PROPRANOLOL SUSPENSION 1MG/ML

Generic Name: Propranolol
Indication: Dysrhythmias, tachycardia, hypertrophic obstructive cardiomyopathy (For cardiologist only)
Dosage Form: Suspension
Strength: 1mg/mL
Stability: 45 days
Storage: Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propranolol</td>
<td>40mg</td>
<td>6 tablets</td>
</tr>
<tr>
<td>Distilled Water (wetting agent)</td>
<td>-</td>
<td>4.8mL</td>
</tr>
<tr>
<td>Citric Acid Solution</td>
<td>25%</td>
<td>1mL</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>240mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with distilled water until smooth.
3. Add a small amount of simple syrup to form smooth paste. Add more syrup until liquid is formed and transfer the contents into a graduated cylinder. Use additional simple syrup to rinse the remaining drug from the mortar.
4. Add citric acid to the suspension in the graduate. Mix well.
5. Make up to final volume with simple syrup.
6. Transfer the suspension into an amber bottle.
7. Shake well and label.

NOTE:
1. Keep in an amber glass bottle.
2. Citric acid is used only for pH adjustment. No need to decrease expiry to citric acid’s expiry.

REFERENCES:
48. PYRAZINAMIDE SUSPENSION 10MG/ML

Generic Name : Pyrazinamide
Indication : Tuberculosis
Dosage Form : Suspension
Strength : 10mg/mL
Stability : 60 days
Storage : Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrazinamide</td>
<td>500mg</td>
<td>3 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>150mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
- Ora-Sweet® : Ora-Plus® (1:1) or
- Ora-Sweet SF® : Ora-Plus® (1:1) or
- Ora-Blend SF® or
- Cherry syrup or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Ora-Sweet SF® and Ora-Blend SF® should not be used in neonates ≤28 days corrected age.
2. Keep in an amber bottle.

REFERENCES:
49. PYRAZINAMIDE SYRUP 100MG/ML

Generic Name: Pyrazinamide
Indication: Tuberculosis
Dosage Form: Syrup
Strength: 100mg/mL
Stability: 60 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrazinamide</td>
<td>500mg</td>
<td>200 tablets</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>1,000mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to form a fine paste.
2. Levigate the powder with small amount of simple syrup until a smooth paste is formed.
3. Add more simple syrup to the paste until a liquid is formed and transfer the liquid into the container.
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with simple syrup.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
50. **RIFAMPICIN SYRUP 10MG/ML**

Generic Name : Rifampicin  
Indication : Tuberculosis  
Dosage Form : Syrup  
Strength : 10mg/mL  
Stability : 28 days  
Storage : Refrigerate and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rifampicin</td>
<td>300mg</td>
<td>4 capsules</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Open capsules and empty the contents into a mortar.  
2. Levigate the powder with small amount of simple syrup until smooth paste is formed.  
3. Add more simple syrup to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with simple syrup.  
6. Shake well and label.

**NOTES:**
1. Keep in an amber bottle.

**REFERENCES:**
51. RIFAMPICIN SUSPENSION 25MG/ML

Generic Name : Rifampicin
Indication : Tuberculosis
Dosage Form : Suspension
Strength : 25mg/mL
Stability : 28 days
Storage : Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rifampicin</td>
<td>300mg</td>
<td>10 capsules</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
- Ora-Sweet® : Ora-Plus® (1:1) or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

PROCEDURE:
1. Open capsules and empty the contents into a mortar.
2. Levigate the powder with small amount of vehicle until a smooth paste is formed.
3. Add more vehicle to the paste until a liquid is formed and transfer the liquid into the container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:

REFERENCES:
52. **SILDENAFIL SUSPENSION 2.5MG/ML**

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Sildenafil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication</td>
<td>Pulmonary hypertension</td>
</tr>
<tr>
<td>Dosage Form</td>
<td>Suspension</td>
</tr>
<tr>
<td>Strength</td>
<td>2.5mg/mL</td>
</tr>
<tr>
<td>Stability</td>
<td>91 days</td>
</tr>
<tr>
<td>Storage</td>
<td>Refrigerate (preferable) or at room temperature and protect from light</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sildenafil</td>
<td>20mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>40mL</td>
</tr>
</tbody>
</table>

**VEHICLE CHOICE:**
- Ora-Sweet® : Ora-Plus® (1:1) or
- Methylcellulose 1%: Simple Syrup (1:1) or
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)

**PROCEDURE:**
1. Crush tablets in a mortar to form a fine paste.
2. Levigate the powder with small amount of vehicle until a smooth paste is formed.
3. Add more vehicle to the paste until a liquid is formed and transfer the liquid into the container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

**NOTES:**
1. Keep in an amber bottle.

**REFERENCES:**
53. SPIRONOLACTONE SYRUP 1.25MG/ML

Generic Name : Spironolactone
Indication : Oedema and ascites in cirrhosis of the liver, congestive heart failure
Dosage Form : Syrup
Strength : 1.25mg/mL
Stability : 60 days
Storage : Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>25mg</td>
<td>5 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
- X-Temp® Oral Suspension System.

PROCEDURE:
1. Crush tablets in a mortars to form fine paste.
2. Levigate the powder with sterile water for injection until smooth paste is formed.
3. Add simple syrup to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
54. SPIRONOLACTONE SYRUP 2.5MG/ML

Generic Name: Spironolactone
Indication: Oedema and ascites in cirrhosis of the liver, congestive heart failure.
Dosage Form: Syrup
Strength: 2.5mg/mL
Stability: 60 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>25mg</td>
<td>4 tablets</td>
</tr>
<tr>
<td>Sterile water for injection</td>
<td>-</td>
<td>5mL</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>40mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Crush tablets in a mortar to form fine paste.
2. Levigate the powder with sterile water for injection until smooth paste is formed.
3. Add simple syrup to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional simple syrup to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with simple syrup.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
55. TRIMETHOPRIM SUSPENSION 10MG/ML

**Generic Name:** Trimethoprim  
**Indication:** Treatment of urinary tract infections due to susceptible pathogens  
**Dosage Form:** Suspension  
**Strength:** 10mg/mL  
**Stability:** 6 weeks at 25°C, 3 months at 4°C  
**Storage:** Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethoprim</td>
<td>100mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Methylcellulose 1%: Simple Syrup (1:1)</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Prepare 100mL of a mixture of equal parts methylcellulose 1% and syrup.  
2. Crush the trimethoprim tablets and then slowly add the base whilst mixing.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**
1. A suspending base of methylcellulose 1-2% without syrup can be used if preferred.  
2. Keep in an amber plastic bottle.

**REFERENCES:**
56. TRIMETHOPRIM SYRUP 10MG/ML

Generic Name: Trimethoprim
Indication: Treatment of urinary tract infections due to susceptible pathogens
Dosage Form: Syrup
Strength: 10mg/mL
Stability: 30 days
Storage: Room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethoprim</td>
<td>100mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Simple Syrup</td>
<td>qs</td>
<td>100mL</td>
</tr>
</tbody>
</table>

PROCEDURE:
1. Soak the tablets in mortar with some simple syrup for about 10 minutes.
2. Levigate with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a graduated container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Keep in an amber bottle.

REFERENCES:
57. **URSODEOXYCHOLIC ACID SUSPENSION 50MG/ML**

**Generic Name**: Ursodeoxycholic Acid  
**Indication**: Cholestatic liver diseases (eg. primary biliary cirrhosis, primary cholangitis etc)  
**Dosage Form**: Suspension  
**Strength**: 50mg/mL  
**Stability**: 30 days  
**Storage**: Refrigerate or at room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ursodeoxycholic Acid</td>
<td>300mg</td>
<td>20 capsules</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

**VEHICLE OF CHOICE:**  
- Ora-Blend® or Ora-Blend SF® or  
- Ora-Plus® : Ora-Sweet® (1:1) or  
- Equivalent vehicle to Ora-Sweet® : Ora-Plus® (1:1)  
- X-Temp® Oral Suspension System (stability is for 90 days)

**PROCEDURE:**
1. If Ora-Blend or X-Temp® is unavailable, pre-mix the Ora-Plus and Ora-Sweet, to form the diluent.  
2. Open capsules and empty the contents into a mortar and add the diluent.  
3. Levigate the powder until smooth paste is formed.  
4. Add vehicle to the paste until liquid is formed and transfer the liquid into a container.  
5. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
6. Make up to final volume with vehicle.  
7. Shake well and label.

**NOTES:**  
1. Ora-Blend SF® should not be used in neonates ≤28 days corrected age.

**REFERENCES:**
58. VERAPAMIL SUSPENSION 50MG/ML

Generic Name: Verapamil
Indication:
   i) Supraventricular tachyarrhythmia (SVT) prophylaxis
   ii) Angina
Dosage Form: Suspension
Strength: 50mg/mL
Stability: 60 days
Storage: Refrigerate (preferable) or at room temperature and protect from light

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verapamil hydrochloride</td>
<td>40mg</td>
<td>150 tablets</td>
</tr>
<tr>
<td>Vehicle</td>
<td>qs</td>
<td>120mL</td>
</tr>
</tbody>
</table>

VEHICLE CHOICE:
- Ora-Sweet®: Ora-Plus® (1:1) or
- Ora-Sweet SF®: Ora-Plus® (1:1) or
- Equivalent vehicle to Ora-Sweet®: Ora-Plus® (1:1)

PROCEDURE:
1. Crush tablets in a mortar to a fine powder.
2. Levigate the powder with small amount of vehicle until smooth paste is formed.
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a container.
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.
5. Make up to final volume with vehicle.
6. Shake well and label.

NOTES:
1. Ora-Sweet SF® should not be used in neonates ≤28 days corrected age.
2. Keep in an amber bottle.

REFERENCES:
**59. VERAPAMIL SUSPENSION 8MG/ML**

**Generic Name**: Verapamil  
**Indication**:  
- i) Supraventricular tachyarrhythmia (SVT) prophylaxis  
- ii) angina  
**Dosage Form**: Suspension  
**Strength**: 8mg/mL  
**Stability**: 30 days  
**Storage**: Room temperature

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>STRENGTH</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verapamil hydrochloride</td>
<td>40mg</td>
<td>10 tablets</td>
</tr>
<tr>
<td>Distilled water</td>
<td>-</td>
<td>1mL</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>qs</td>
<td>50mL</td>
</tr>
</tbody>
</table>

**PROCEDURE:**
1. Soak tablets in a small amount of distilled water and then crush tablets in a mortar to fine powder.  
2. Levigate the powder with vehicle until smooth paste is formed.  
3. Add more vehicle to the paste until liquid is formed and transfer the liquid into a graduated container.  
4. Use additional vehicle to rinse the remaining drug from the mortar and pour into the container.  
5. Make up to final volume with vehicle.  
6. Shake well and label.

**NOTES:**
1. Flavouring may be added.

**REFERENCES:**
ABBREVIATIONS:
mg - milligram
mL - millilitre
qs - up to