



# THE BUP HANDBOOK

DUMELA/HELLO!

Welcome to the Botswana-  
UPenn Partnership (BUP)

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# Pre-Departure Preparation

## Introduction

This handbook offers helpful guidance and information for Penn faculty, staff and students traveling to Botswana to work with a BUP program. Please keep in mind that this is a general informational overview, intended to offer support to all UPenn and CHOP travelers. Some sections are therefore more relevant for certain groups (clinical vs. student vs. staff travelers) than others.

The Handbook is an ongoing project; please help us inform future Penn travelers by sending relevant information, feedback, or suggested changes to this Handbook to Charlotte Beever ([charlotte.beever@pennterms.upenn.edu](mailto:charlotte.beever@pennterms.upenn.edu)).

PSOM CGH Contacts, Philadelphia Office:

CGH Office Phone Number: 215-898-0428

Primary Contacts:

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BUP Contacts – Gaborone Office

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Senior BUP Oversight:

Corrado Cancedda, MD, Director and Strategic Advisor for Academic Partnerships in Global Health, BUP – [corrado.cancedda@pennterms.upenn.edu](mailto:corrado.cancedda@pennterms.upenn.edu)

**ALSO CHECK THE BUP WEBSITE FOR THE MOST UP-TO-DATE INFORMATION:** <https://www.med.upenn.edu/botswana/>

## Important Health Notice:

1. Anyone with an underlying immune deficiency or chronic disease that would predispose the individual to a higher risk of TB disease should talk to their physician before going to Botswana. Such conditions include: HIV, history of a solid organ transplant, chronic kidney disease, and recipients of chronic steroids or other immunosuppressive medications.
2. Anyone with a psychological or mental health condition (e.g. anxiety, depression, eating disorder) whose symptoms may be exacerbated by the stress and challenges of a foreign environment should consult with his or her therapist or physician before going to Botswana.

## Code of Conduct

While in Botswana you will be representing not only yourself but the University of Pennsylvania. We are guests in Botswana, and guests of BUP. It is critical that you bear this in mind throughout your stay. Please behave respectfully and comport yourself with humility and kindness. Public errors in judgment or conduct in Botswana could compromise the program, as well as place you at personal risk.

Reminder: Though you will be working in Botswana this is an official Penn program, and you are therefore subject to the same [Penn policies](#) as in Philadelphia.

- Anyone traveling to Botswana on a BUP program **must sign and submit the Risk and Release and Emergency Contact Form** before departure (see Appendices).
- All participants on clinical rotations are expected to **work full weeks, Monday through Friday**

Your program may have other prerequisite requirements for your time in Botswana; please check with your specific program for any other requirements for travel.

## Pre-Departure Checklist

- Check your passport**  
Ensure your passport is valid, does not expire within 6 months of your return date, and has at least 3 blank pages.
- Make travel arrangements**  
Book your flights to/from Botswana. There are no direct flights from the US to Gaborone. Most travelers come through Johannesburg. Airlink and Air Botswana (BA) have flights from Johannesburg to Gaborone. Email your flight itinerary to Josephine Thankane. (Please note that if you are a researcher traveling on US Federal grant funds you must book on U.S. flag carrier airlines whenever possible)
- Travel Requirements for Botswana – Permit Waivers**  
Clinical visitors working in the hospital must be prepared to apply for a permit waiver. The application includes two documents: a notarized copy of your passport photo page and a letter of invitation. Use the contacts below to determine next steps.  
**Residents and Students**, contact Maria Cortese Hering for more information.  
**Faculty and Staff**, contact Charlotte Beever for more information.
- Botswana Health Professions Council (BHPC) Registration**  
No physician can work in Botswana without registering first with the BHPC. Contact Josephine Thankane to determine next steps.
- Immunizations**  
You should be immunized against hepatitis A, hepatitis B, and typhoid (IM or oral). If you plan to travel to Chobe Game Reserve in Kasane, the Okavango, or any other place up north before or after your rotation, you will need to bring malaria prophylaxis. Gaborone is free of malaria. **All Penn students are required to go to Penn Student Health to obtain a pre-travel consultation and any necessary immunizations.**
- Confirm airport transfer**  
There is no public transportation at the airport so confirm with Josephine Thankane that she has booked your airport pick up. You will need to send her your flight itinerary.
- Confirm accommodations**  
Confirm your reservation at your accommodations in Botswana. Check with Josephine Thankane that your reservation has been confirmed if staying at Village View.
- Register in MyTrips**  
MyTrips is Penn's International Travel Registry. Registration in MyTrips pre-authorizes medical and security coverage with ISOS. Registration is mandatory for all Penn-affiliated travel. Before you can register, you must first make a MyTrips profile. Complete instructions can be found on Penn's [Travel Guidance website](#).
- International SOS (ISOS)**  
ISOS provides Penn travelers with worldwide health care and emergency assistance 24/7. All Penn employees and students are covered when traveling for business. CHOP also has ISOS coverage for CHOP employees. Please check with Dr. Adelaide Barnes for most up to date info.
- Penn Passport Insert Travel Card**  
Penn provides a Travel Card with relevant numbers and helpful information while abroad, including the contact and member number for ISOS. The Travel Card can be picked up at the CGH office.
- Attend BUP Orientation**  
A member of CGH will be in touch with you to schedule.
- Bring your own PPE**  
If working clinically ensure you bring sufficient PPE for your entire rotation, including N95 masks, gloves, goggles.

## Booking Your Travel

Flights can be conveniently booked through Penn's preferred travel provider, [World Travel](#). Booking with World Travel can be done directly through Concur.

Here are some important links to use when considering travel plans:

Penn Travel: <https://cms.business-services.upenn.edu/penntavel/>

Penn Global Travel Guidance: [International Travel Guidance \(upenn.edu\)](#)

## MyTrips International Travel Registry

MyTrips is Penn's International Travel Registry for faculty, staff, and students preparing to travel abroad for academic, educational, clinical, research, or University business purposes. Registration pre-authorizes your access to travel medical insurance, security support, and travel assistance.

This secured information is used:

- to contact travelers in emergencies
- to assist individuals and groups, as needed, with pre-travel preparations
- to identify opportunities for closer collaboration on international research and operations

All faculty, staff, and students with valid PennKeys are authorized to use MyTrips. Before a trip can be registered, travelers must first create a profile in MyTrips. This only needs to be completed once, after which you can register all Penn-affiliated international travel. MyTrips is owned by [International SOS](#), the organization that provides Penn international travelers with medical, security and other travel assistance.

Registration in MyTrips allows Penn to support its travelers abroad and notifies ISOS of your trip so that support can be provided without delay.

Registration with MyTrips is mandatory for all Penn students and all faculty/staff traveling with Penn students.

## International SOS (ISOS)

ISOS provides travelers with medical as well as security assistance, available to travelers 24/7. Spouses and dependents are covered under ISOS when accompanying on Penn-affiliated travel.

CHOP also covers its travelers with ISOS. When calling ISOS, it is important to refer to the correct membership number:

**Penn: 11BSGC000012**

**CHOP: 11BCPA000295**

## How to Dress and What to Pack

- Dress in Gaborone is more formal
- Scrubs, tank tops, short skirts, and shorts are not considered appropriate attire
- Men generally wear suits and ties to the office. Similarly, women dress professionally
- If traveling during the US summer (Botswana winter) the nights can get cold. You will want to bring warm layers (fleece, sweater, jammies, etc.)
- Pack comfortable, closed-toe footwear. You will be walking on dirt paths and will need a closed-toe shoe to keep dirt out of your toes. You **MUST** have closed-toe shoes when working in the hospital
- Forget something? Nearly everything you could need can be purchased in Gaborone.
- PPE: If working clinically, you are responsible for bringing your own N95 masks, non-sterile gloves, goggles/protective eye wear. Bring enough for your entire visit, as **this equipment will not be provided for you.**
- Important: do not pack any valuables in your checked luggage. There have been reports of items being stolen and luggage getting lost when traveling through South Africa.

## In Location:

You have arrived. This section highlights important, on the ground, information about Botswana, the BUP, and working at the Princess Marina Hospital.

### About Botswana

#### Background

Botswana was formerly a British protectorate known as the Bechuanaland Protectorate. It received its independence in 1966, and at that time, the name was changed to Botswana. Botswana is now a parliamentary republic. Education and healthcare are free; and the national literacy rate is above 80%. Since 1966 the country has continued to grow, thanks to its flourishing diamond economy, beef exports and good balance of payments. In addition, tourism is a growing sector thanks to the large nature preserves and effective national conservation practices.

#### Location

Botswana is a land-locked country, slightly smaller than Texas, in the center of Southern Africa. It is bordered by South Africa on the south and east, Namibia to the West, Zambia and Angola to north, and Zimbabwe on the northeast. It is predominantly flat, with the Kalahari Desert to the southwest, occupying 87% of the territory. The Botswana time zone is CAT (Central Africa Time) and is either six (daylight savings) or seven hours ahead of Philadelphia/EST.

#### Gaborone

Gaborone (pronounced “Ha-bor-ron- eh”) located in the SE corner of Botswana on the Notwane River, 9 miles (15 km) from the South African border. Also called “Gabs” (pronounced with hard G, as it is an expatriate term), it is the capital city. Gaborone is a fast-growing city with some remnants of its rural past, mixing high-rise office buildings and tin roofed houses. There are modern malls but few sidewalks and street lighting. The Princess Marina Hospital (PMH) opened in 1966 at the time of independence and is in the center of Gaborone. The University of Botswana, where the main BUP office is located, is also near the hospital.

#### Climate

The climate is semiarid with cool winters (June-August) and hot summers (December-February). The country suffers from droughts given the desert climate. The rainy season in the summer is characterized by intense, brief, dramatic thundershowers.

Average daily temperatures range in January from 22°C/71°F – 33°C/91°F and in July from 5°C/41°F – 19°C/66°F. Typically, there are long periods of bright sunshine daily throughout the year with clear skies and low humidity. Summer days can be quite scorching, particularly before the rains come. In the winter months a fleece or sweater is a must in the morning and at night. **Most buildings do not have heating and there is little air conditioning.** (Note BUP housing has both heat and AC.)

#### Language

English is the official language, but Setswana is the national language and is widely used (79%). Many older Batswana only speak Setswana. Young children are taught in Setswana until 4th grade so small children also may not speak English. (See the appendix for a Setswana phrase list.)

#### Top Tips for Not Being an “Ugly American” in Botswana

- Know that “g’s” are pronounced as “h’s” in Botswana and an “e” on the end of a proper noun is usually annunciated. For example, the capital city is pronounced “Ha-bor-ron- eh”.
- Greet people. It is proper to greet everyone you encounter before anything else.
- You say “Dumela Mma” to women and “Dumela Rra” to men.
- Don’t shout or talk loudly. Remember, if someone does not understand you, it does not help to increase your volume. Speaking loudly in the hospital can be interpreted as shouting.
- Recognize that you are a guest. It is impolite for guests to demand things of their hosts.
- One person from Botswana is referred to as a “Motswana”. Multiple people are referred to as “Batswana.”
- “Tswana” is used as an adjective – e.g. “Tswana state” or “Tswana culture”.

## BUP Accommodations – Village View

Village View is a residential complex with two flats leased by Penn, B5 & B6, and provided to support the mission of the BUP. Up to 4 guests to an apartment, 2 guests per bedroom. Bathrooms and kitchens are intended to be shared. Village View accommodations are available only on a space-available basis and reservations must be made in advance. Reservation requests should be made no less than one month prior to your arrival. **Flight Itineraries must be emailed to [Josephine Thankane](#) to request a reservation.**

If anything goes wrong in the units, it is the responsibility of the Property Owner. Having said that, if anything gets broken for e.g., glasses, plates, etc. this will be your responsibility to replace before you leave. Please do not remove anything from the units at any time.

This accommodation is limited which may mean, “**go with the flow**”. You may be asked to change rooms during your stay to better accommodate others, e.g., gender and other considerations. Please be prepared for this.

The accommodation is shared, so the management, purchase, and cooking of food can be decided upon between flat mates.

### Location

Village View is a 20-minute walk to the University of Botswana and a 30-minute walk to Princess Marina Hospital. It’s within easy walking distance of the Riverwalk Mall which has secure bank ATMs, a large grocery store, SIM card and air-time vendors, coffee shop, various restaurants, and taxis and public transportation (combis).

Physical Address (not for post/mail):

Village View  
Plot 5149  
Village Gaborone  
Botswana

### Rules

- NO drinking of tap water, if you do, please boil for 3 minutes, or use bottled water!
- **WHEN YOU LEAVE: Leave keys behind** in units OR hand them to the driver when he takes you to the airport.
- Be neat, considerate, and respectful!

### Amenities

**Wi-Fi** is provided, please do not remove, or unplug any cables. If there are any issues kindly report any issues to the Village View Supervisor Trish on (+267 71253800).

**Housekeeper:** The Housekeeper for both units is Tiny. She is responsible for cleaning the apartment on Tuesday and Thursday. This is shared accommodation, so be respectful of each other’s space and try to be neat! You will be responsible for your own laundry. Washing machines are available in-unit. There is also an option to engage the Housekeeper of the units to do your laundry. This of course will be for a fee agreed on with the Housekeeper and is a separate arrangement you will have with them. Please note that we are responsible for buying the cleaning and laundry detergents.

Housekeeper (Tiny) days and hours:  
Tuesday 08:00 – 15:00  
Thursday 08:00 – 15:00

IF THERE ARE ANY ISSUES WITH THE HOUSEKEEPERS KINDLY INFORM TRISH.

**Security:** is provided at the complex 24/7, however if you see any foul play or have any concerns about the guard’s kindly report the incidents to Trish.

**Pool:** There is a pool and braai facilities available for your use. If you use the unit's towels, please return them. If they are lost at the end of your stay, it will be your responsibility to replace them. Kindly ask Trish or your housekeeper if you are organizing a braai to assist reserving the braai/barbecue stand for you.

### Bon Sela

When you leave the flats, it is customary to show appreciation to the maids with a tip (bon sela). This is typically P100 per person per month. It’s also appreciated to leave unused or unfinished items, e.g. soap, food, tea in the accommodation that



may be needed by others in the flat or for the maids to take. If leaving for maids, leave note saying they can have it.

## General Safety Rules

- NO hitchhiking!
- NO driving! (see note on Cars below) Use a cab or take the Tlokweng Route 5 to come to the UB or PMH.
- NO riding the back of open vans/trucks!
- NO walking after dark or before sunrise!
- NO bungee jumping, white-water rafting, cliff swinging or riding in Mokoro's (dugout canoes)!
- When walking anywhere please do not walk and talk on your cell phone- it could be snatched from you. Always be aware of your surroundings and keep doors locked even when in a vehicle.
- AVOID unprotected sex. Rates of sexually transmitted diseases, like HIV, are very high in Botswana.
- Bring your own PPE- it will not be provided for you at PMH! This should include N95 masks, non-sterile gloves, and protective eye wear/goggles.

## Transportation

Public transportation can be identified by their blue license plates. When giving directions, it's best to use easily identified places. Many people do not know the official street names, but will use the destination as the road name, for example "the road to Gaborone".

### Taxis

Taxis are often available at malls, and they can be easily ordered by phone. If you find that you are taking cabs frequently, it is possible to get the cell phone number of a specific driver and call that person directly when needed. By using a single driver for most of your transportation during your stay you can often ask for lower rates.

All official taxis have blue license plates in the back and white in the front. Make sure to use a taxi with a blue license (it indicates that it has been registered).

There is a list of taxis at Village View that are trusted. Any place in Gaborone should be under 50 Pula.

### Combis

The combis are 12-seater crowded minivans that take passengers around town. They follow specific routes, but there are no route maps so if you do not know which combi to take, ask anyone; people are generally helpful and will make sure you get to where you are going.

On the left side of every combi is the village or destination of the final stop. Ask the BUP staff for the current cost for riding the Combis. They are often full, but there is always room for one more. They are relied upon by most locals to get around town. Combi rides are a great way to people watch, listen to Setswana, and culturally immerse yourself- an adventure and true Botswana experience.

### Walking & Running

You may choose to walk during the day to get to your destinations or run for exercise. Be careful crossing streets. If you cross where there is no zebra crossing and you get hit, you'll be fined but if the car hits you in a crosswalk, the driver will be fined. Don't even bother trying to cross the street at a round-about during rush- hour in the morning and evening if you can avoid it- nobody will let you cross. Do not walk anywhere at night. Most paths are unlit. Traffic accidents and street crime are both common. You may run for exercise, but you should not wear headphones: you need to be alert to your surroundings.

### Buses

You can get to any sizable city in Botswana by bus. Typical times: Gaborone-Francistown, 6 hours (P35/person). Francistown-Maun, 6 hours (P40/person). Buses can be found on the north side of the bus station, and they generally leave every half hour or whenever the bus is full. Destinations are located on the front of the bus. Buses can be very crowded and are not air conditioned but are very affordable. Arrive early to get a seat.

### Cars

Car accidents pose particular risk to travelers abroad. Penn travelers are not permitted to drive themselves. Motor vehicle accidents are the fifth leading cause of death in Botswana.

## Restaurants and Groceries

There are many restaurants and food stores in Gaborone to choose from. Up to date information on Restaurants and Groceries will be provided in your BUP orientation upon arrival in Botswana.

## Communication

### Phones

We recommend you carry a working cell phone on your trip, preferably a smart phone with an international plan. If you are unable to bring a working smart phone, you can add a SIM card to your cell phone or purchase a prepaid phone.

WhatsApp is a popular app used for communication around Botswana. Everyone in Gaborone has a cell phone.

### Internet

WIFI is available in the Village View. It is not available when in PMH (having a working smartphone allows you to participate in virtual meetings while at the hospital).

Keep in mind that internet connections are generally a bit slower; outages are frequent; and internet connectivity is not as reliable as on Penn's campus. Please turn off computers when not in use. Botswana frequently experiences power surges and turning off the computers may help prevent damage. Also, if there is a storm, please turn off all electrical appliances.

### Mail

Post offices can be found at Riverwalk. Hours are generally 8:00-16:00, Monday through Friday. Letters are priced according to the size of the envelope and not the weight. There is no home delivery of mail in Botswana; all mail is delivered to post office bags or boxes.

Our post address in Gaborone is:

Botswana-UPenn Partnership  
PO Box 45498  
Riverwalk  
Gaborone, Botswana

It takes several weeks to get mail. If parcels are being sent, please make sure you have a list of contents and that there is a list accompanying the parcel. Please complete the customs forms in the US and send a copy by email to yourself.

## Electricity

With frequent outages it is helpful to bring a portable charger. Voltage in Botswana is 220; it is 110 in the US. You will need a power adapter and if your device is not dual voltage, you will also need a power converter. These can readily be found on Amazon and in other electronic stores.

G Plug



M Plug



Europlug



## Working in the Hospitals

### **YOU WILL WORK HARD; THIS IS NOT A VACATION.**

You are expected to work fulltime every regular workday (Monday through Friday) and MAY NOT leave town on Friday mornings for long-weekend trips unless it is a Botswana holiday. If you do leave town, you may lose your program funding, or subsidized housing.

### Credentialing for Residents and Faculty Working in the Clinical Setting

Anyone (not including students) who plans to practice medicine in Botswana MUST submit documentation and complete an application for the Botswana Health Professions Council (BHPC). There are numerous documents required to obtain the registration. You should plan to arrive by Monday morning so your paperwork can be turned in, and you can receive the approval the following day.

Registrations are given in-person on Wednesdays. You can then begin work on your first Thursday in-country. No one may work until the registration is granted and so you should time your arrival carefully to make the most use of your time.

### About Princess Marina Hospital (PMH)

There are two parallel health systems in Botswana - the public system and private system. Each system has its own set of hospitals, clinics, and physicians. Care in the public sector is completely free for Botswana, including laboratory testing, hospitalization and medications. The University of Pennsylvania has been working in the public sector, and we have been based in Princess Marina Hospital (PMH) in Gaborone since January 2004.

PMH is the main tertiary care hospital and referral hospital for southern Botswana. NGWH is the main referral hospital in Northern Botswana. Both are located near the center of their respective towns. As of 2022, 79% of the physicians in Botswana are from outside Botswana. As a result, most physicians do not speak Setswana, and they rely on the nurses for translation.

The medical school started its first pre-med class in August 2008. Prior to this all Botswana medical students spent their clinical years at hospitals outside Botswana. Botswana started its own internship program in January 2007 and the first residencies (Peds and Medicine) started in January 2010. UPenn is heavily involved in helping in training so you may have the privilege of working in this important project.

### Adjusting

It will take days to adjust to the diagnoses, available testing, formulary, charting, hospital geography, language, personnel, etc. One of the most difficult things to adjust to is learning to prioritize what to work on and what to leave. Coming from a culture at Penn where virtually no abnormality is ignored (even if it should be), this takes some time. Prepare for a difficult orientation and be open-minded.

### Needle Stick Exposure and PEP

The risk of needle stick exposure is quite real. All medical students complete the required pre-departure procedures training. One of the benefits of learning procedures in an environment where HIV is very prevalent is you will learn excellent technique. In addition to using proper technique, be careful and take your time. Most sticks occur when you are rushed or stressed. In the event of a potential exposure immediately stop working, take your first dose of PEP, and notify your clinical supervisor. We will take care of you.

Please note, just as in the US, you must report all needle stick exposures and other risks to your supervisor. Your information can be kept confidential if you choose, but we like to know the circumstances surrounding incidents so we can work to prevent them and to make sure that you receive appropriate follow-up on return to Penn. Your clinical supervisor will discuss this with you in country. You will learn the details of our PEP procedures at your in-country orientation with Josephine.

IF STUCK: CONTACT DR GAOLATHE TENDANI +267 72111501. IF NO RESPONSE CALL JOSEPHINE THANKANE +267 77135784

### Access to Educational Material

Think about loading some mobile resources to your smartphone before departing that can serve as a point-of-care reference for you. The Biomedical Library ([http://www.library.upenn.edu/biome\\_d/](http://www.library.upenn.edu/biome_d/)) has a list of good resources, and many are free.

## Hospital Staffing Terms

- Specialist: fully trained specialist, the equivalent of an “attending”
- Medical Officer: Completed internship (but not residency), PMH employee, can be shifted between departments depending upon needs.
- Intern: Similar to USA
- Physician: An internist (as opposed to surgeon)
- Resident: Has started residency in Internal Medicine and is usually in 1st, 2nd, or 3rd year (before finalizing residency in South Africa).

## PMH Phone System

Switchboard: Dial 9 and ask to be transferred to a person or department

Outside Line: Dial 0 before dialing the outside line.

You cannot dial a cell phone directly from a hospital line. You can only dial another land line.

## Set-up of PMH Medical Wards

As part of the University of Pennsylvania clinical program, you will be working in the inpatient medical wards at the hospital. There are two wards - the Male Medical Ward and the Female Medical Ward. On each ward you will find seven main “cubicles” of patients. Each cubicle contains approximately ten tightly-packed patients, most on hospital beds but sometimes on the floor. The most tenuous patients are in the “high dependency cubicle” right in front of the nurses’ station. Medicine generally runs about 20 beds over the maximum (mattresses on the floors).

## The Firms

There are six teams, called “firms” on the medical wards. They are called pink A and B, green A and B, and blue A and B. Note that an MO is a doctor who has graduated from medical school, but s/he has not done a residency. Therefore, an MO may be a new graduate or may have been practicing for years. Each firm is headed by an attending, called a “specialist.” A “specialist” is someone who has completed a residency, and some have an additional subspecialty or special interest.

Penn medical students and residents are fully integrated into the firms at PMH. Mos, residents, and interns are the primary caretakers of the patients, and specialists supervise them with morning rounds three times a week. (The specialists have morning clinic twice a week.) MOs, interns, residents, students and you round on patients every day (except the weekends, unless on call), and perform all corresponding blood tests, invasive procedures, admissions, and discharges. Expect to do morning rounds without a specialist some days.

## You and the Firms

Penn students and residents are each assigned to one of the firms. In many cases you will be asked to function more independently than in the United States. Students are reminded to never perform unsupervised procedures for which they are not qualified.

As stated before, this is an elective where residents will have a great deal of independence; however, you will always have a specialist available for advice about and help with patient care. You should never feel “exposed” or abandoned. There will always be a specialist available for help, advice, consultation but much of the day you may be making decisions on your own or jointly with the UB Resident.

## Daily PMH Hospital Experience and Schedule

The day begins with Intake where house officers (or students) who were admitting the preceding day present a brief summary of each admission (about 10 total/shift). These must be brief (it is not rounds) but you should always give an impression and plan. This will allow for some discussion about each case. These sessions are followed by ward rounds, which continue until lunch. After lunch additional work is done; you will almost undoubtedly stay later than five for the first week or so until you get efficient in the system and learn to prioritize; the need for doing something is almost limitless so one has to learn the skill of deferring. Most procedures are noted on rounds and performed in the afternoon including: phlebotomy, IV insertion, lumbar punctures, thoracenteses, paracenteses, bone marrow aspirates, pericardiocentesis, and FNA or biopsies of masses and lymph nodes.

## Daily Intake

Every morning at 7:30 the entire department meets virtually or in the small conference room at the end of the Male Medical Ward for a daily intake meeting. During this meeting one or several cases from the intake are chosen for a more detailed discussion. The meeting is supposed to function as a source of education and learning for the staff. The house officers are questioned about their thoughts, diagnoses, and plans. There are also usually several announcements at the beginning or end.

You are encouraged to ask questions of the admitting doctor. Please use tact and consideration, as we are there to help, learn, and educate, not to ridicule. It is important that you explain why you are asking a specific question, as many people there probably will not understand the relevance. E.g., if a patient is presented with chest pain and it's not clear from the presentation if it could be pericardial in origin you might want to ask, "does the chest pain improve while sitting up or sitting forward suggesting that it might be pericarditis".

## Rounds

Rounds begin shortly after the morning intake report is completed (around 830-900). The team composition will vary. All teams are integrated including Marina interns, UB residents, UB students, MOs, and Penn people. In some situations, the residents will lead rounds, in others the specialist. Remember that in addition to your experience, rounds serve several other functions including teaching the Marina doctors and students and, of course, patient care. Rounds usually start in the ICU or Emergency dept and continue onto the main medical ward. Each patient on the service is seen in turn and the daily plan established and carried out.

Rounds continue until 1200-1300. 1300 is a good time to get some lunch or work on discharges. If the work for the day is not complete the team will reconvene at 1400 or some other designated time to complete the work rounds and procedures. We also schedule the many family meetings ("counseling") between 1400-1500. This is done by just asking the nurses to arrange it. Family meetings are frequent and critical for the care of the patients. You will enjoy this responsibility.

## Patient Files

Each patient has a "file" or chart on which it should be clearly stated to which medical team he or she belongs (i.e. pink, blue or green). Each file is comprised of a drug/med sheet, doctor's notes section, and nurse's notes section. In addition, each file contains the "Outpatient or OPD cards" for that particular person. These cards are the patient's permanent medical record and during each clinic encounter with a health professional a note of some sort is written. They carry these cards with them and can be a very valuable asset when trying to establish past medical history and/or the course of a patient's present illness.

The doctor's notes section is the area of the file where the daily progress notes are written. Unlike those in the USA notes at Marina are written entirely for communication and patient care. We do not have to "buff" the charts with medically extraneous information that is required for billing; so make the notes short, pertinent, and of course legible. Also, unlike the hospital systems you are likely used to in the US doctors' notes also include all non-pharmacy orders (e.g. nursing orders, transfusion orders, diet orders, IVF orders, etc.). Just write what you want in your note clearly and the nurse caring for the patient will hopefully read it, understand it, and then take care of it. (It also helps to review it with the nurse.) All drug orders need to be completed on the "drug sheets" which usually are found at the front of the file. The names, dosages and availability of many medications are quite different than what you may be accustomed to in the United States but you will quickly catch on as you become more accustomed to PMH. The first orientation lecture is on the Botswana pharmacopeia and you will be given a copy with this prior to your departure. Students can write orders, but they must get them countersigned by an MD.

## Laboratory Orders and Procedures

All laboratory orders and procedures are taken care of by the medical team. The nursing staff is usually willing to assist you with any procedures but you are responsible for doing them, ordering the appropriate tests, and cleaning up after yourself. Botswana has a national computerized healthcare system called IPMS. It is accessible in the larger hospitals and most government clinics. All labs are ordered and retrieved through this system. Instructions for its use are in the "Guide". It has only worked intermittently so there will likely be times when labs will have to be ordered in the old written style on special forms. The label printers for the system are particularly frustrating.

## Call and Admissions

Every day there are at least two medical officers (or a resident and MO) taking call on the medical wards and they are responsible for seeing and “clerking” all new admissions. These admissions come through the A+E department (ER), from the clinics, or referrals from other primary hospitals. The system in place for “doc-to-doc” or handoffs is mainly via a doc’s WhatsApp group. The MO on call will either stay in the A and E or be called there to evaluate each potential admission. People now take call the day their firm is admitting. Each firm takes admissions about twice a week. The exceptions are that readmissions (any patient who has ever been admitted to a medical firm) always go back to their originally assigned firm and patients admitted at night are redistributed to the admitting firm in the morning (night float). Specialists take call (2nd call) when their team is admitting. The specialist on call handles all transfers from other hospitals and does the referrals for other departments. Specialists are also the only persons who can put in PD catheters. (Though MOs and students can do all other procedures.) Penn students and residents have not officially been in the call schedule, but are expected to take call until 2100 on the days that the firms they have been assigned to are admitting. This works out to 1–2 times a week. Be aggressive or you will not get the admissions. When you take call you should find the MO scheduled to be on call for that day-evening and let that person know you are there to take the admissions until 2100. It’s also important to make the nursing staff aware of this as well so that you can be notified of new patients and their location. The admission process is similar to what you are used to. An admission database needs to be completed, any labs or urgent procedures ordered and carried out and orders placed. A Penn resident will primarily function in a supervisory capacity for students, interns and MOs, but should take admissions when there are several waiting. You can expect to get anywhere from two to five admissions each on your call. If there are any problems, a patient is extremely ill and or needs an urgent CT scan or any other complex procedure there is always a Specialist on call for that particular day (the 2nd on call). Checking the on-call roster located on the ward can identify this individual. In addition, if any problems are encountered you can always page or call a Penn specialist, whether he or she is on call or not. We are ALWAYS available.

Make note of your admissions, your evaluation and your impressions, you may be presenting them the next morning at Intake Conference.

## Common PMH Abbreviations

ARV- Antiretrovirals

ATT- Anti-Tuberculosis Therapy

CCF- Congestive Cardiac Failure (CHF) CST- Continue same treatment

Code 1- HIV positive DNS- D5 Normal Saline

FBC- Full Blood Count (CBC)

IPT- Isoniazid Preventative Therapy Ptb- Pulmonary Tuberculosis

RFT- Renal Function Tests (Na, K, Cl, Urea, Cr)

RVI- HIV positive

## A “Word” on HIV Testing in Botswana

As of March 2004, HIV testing has been done on an “opt out” or routine basis. Therefore, extensive counseling and an in-depth consent procedure is not required. Every patient of undocumented HIV status should be tested (unless they decline). This is one of our outcome measures. We cannot manage HIV successfully if we do not identify those infected before they are seriously ill.

Rapid testing is readily available. You can just carry the tube to the hospital lab and wait (five minutes) for the results. (It still needs to be ordered in the computer.) There is no need to confirm HIV positive tests (whether done by rapid method or ELISA) with a western blood testing since the prevalence is so high in Botswana.

## Laboratory Tests: Ordering Tests

All laboratory, pathology, microbiology, and cytology orders must be placed within the MEDITECH computer system. To place lab orders in the Meditech computer system follow this simple procedure:

- Double click on MEDITECH icon on desktop of ward computer.
- On opening screen enter username/password
- Find and click on EMR LINK on right-sided toolbar.

- Find and click on patient list at current location (e.g. Male Medical Ward)
- Click on ORDER  ANY PROCEDURE
- Type in order you wish to enter
- When prompted answer “Y” to question “Collected by Doctor or Nurse” if you want to print stickers.
- When the orders are complete, click on SUBMIT, to order the test and print out labels. You will be prompted to fill out the submission code

After collecting specimens place them in box on the nurses’ station for transportation to the laboratory.

If the specimen is critical, take it yourself.

### Lumbar Puncture

You need 1-3 RED TUBES, 1 PURPLE TUBE, and 1 GREY TUBE. (You can also use the tubes provided in the LP kit, if available).

In MEDITECH you order:

- CSF MCS (1 red top and 1 purple top)
- CSF GLUCOSE (1 grey top)
- CSF PROTEIN (1st red top)
- TB MCS (red top >5cc if suspicious of TB meningitis)
- CYTOLOGY (red top if suspicious of lymphomatous meningitis)

### TB Sputum

You need 1 SPECIMEN CUP/ day (we want >/=2 specimens total) In MEDITECH you order TB AFB and TB MCS.

### Thoracentesis

You need 1-3 RED TUBES and 1 PURPLE TUBE.

In MEDITECH you order:

- FLUID MCS (1 red top and 1 purple top)
- CSF LDH (No option for fluid LDH)
- FLUID PROTEIN (1st red top)
- TB MCS (2nd red top)—if suspicious of pleural TB
- CYTOLOGY (3rd red top or specimen cup)—if suspicious of malignant pleural effusion

### Bone Marrow Aspirate

You need 1 PURPLE TUBE and 1 RED TUBE. In MEDITECH you order:

- BONE MARROW ASPIRATE (1 purple top)
- TB MCS (Pus/ red top)—if suspicious of disseminated TB

### Hematologic Blood Tests

These include FULL BLOOD COUNT (CBC), PERIPHERAL SMEAR, ESR, MALARIAL SMEAR, RETICULOCYTE COUNT.

All of these are placed in PURPLE TUBES and can be combined. CROSSMATCH must include 1 RED TOP and 1 PURPLE TOP.

### Chemistry Blood Tests

These include UREA/ELECTROLYTES, CREATININE, LFTS, MAGNESIUM, CALCIUM, LDH.

All of these are placed in RED TUBES and can be combined.

### Serological Blood Tests

These include HBV SCREEN, HCV SCREEN, RPR, TOXOPLASMA ANTIBODIES.

All of these are placed in RED TUBES and EACH MUST BE SENT IN A SEPARATE TUBE.

### Coagulation Profile

This includes COAGS and must be filled to the top.

This must be placed in the BLUE TUBES from the refrigerator on the floor.

## HIV Testing

These include HIV 1+2 ELISA, RAPID HIV TEST (generally takes a day), and HIV VIRAL LOAD. Both are placed in RED TOP TUBES and MUST BE SENT IN A SEPARATE TUBE. If you want the results of a rapid test within 5 minutes, carry the tube to the laboratory yourself and wait for the tech to run it.

## CD4 Test

This test must be sent in a PURPLE TOP TUBE and one sticker must be placed on the tube (place the other sticker in the chart for future reference). It must be filled to the top.

This test MUST HAVE THE MEDITECH STICKERS and MUST BE SENT SEPARATELY from all others.

## Selected Normal Laboratory Values (SI Units)

Urea: < 7

Creatinine: < 100

Calcium: 2.2 – 2.57

Glucose: 3.5 – 5.8

Bilirubin: < 26

AST: < 34

ALT: < 41

Alkaline Phosphatase: <110 Gamma GT: < 50 Cholesterol: < 5.17

Triglycerides: < 7.26

Total Protein: <80 Uric Acid: < 400

## Imaging

There is a fairly robust radiology department at PMH, but it is understaffed and overburdened which has a direct impact on the timeliness of many studies. To expedite truly urgent investigations, it is always advisable to discuss the situation with the radiology technologists located in the radiology area. If the study is not urgent submitting the necessary forms should be done through the ward.

## X-Rays

Fill out an X-ray request form making sure to note body area of interest and put in outgoing box.

## Ultrasound

Radiology Dept can perform ultrasounds of ABD, Lower extremity (R/O DVT), Pelvis. Fill out Ultrasound request form or if none available a x-ray request form and indicate ultrasound investigation.

## CT

There is one CT scanner so careful consideration must be given prior to ordering this investigation. The radiology department can perform CT of Brain, Chest, ABD/Pelvis, Orbits/PNS, Spine (identify region of interest).

Complete CT request form in duplicate and have specialist sign form in indicated place.

## Fluoroscopy

Barium swallow (esophageal), meal (upper GI tract), and enema can be performed. Order as you would a regular x-ray while making sure to indicate exactly what type of study you require.

## Echocardiography

This is NOT performed by the Radiology Dept. To obtain a 2D Echo on a patient you must discuss the request with Dr. Mwita or Dr. Yu or Dr Goepamang who will arrange a mutually beneficial time for the study to be done. Most echos are performed at the bedside.

## Discharge and Follow-up

No patient should be discharged without it being approved by the specialist in charge and any other consultant working



with the patient (e.g. oncology, surgery). Once the decision to discharge the patient is made there are four tasks to complete. Students can/should do this, but they must be countersigned by an MD.

1. Write the daily note in the chart.
2. Fill out a discharge summary on the patient's "OPD" card. It is important to include the presentation, the relevant studies performed and their results and the final diagnosis. In addition, it is helpful to include any outstanding results that are still pending. At the end of the summary, you should include a treatment list/drug list which functions as the patient's prescriptions for their discharge. You must include the drug name, dose, schedule and amount. Following the summary and drug list it is important to include the follow-up date/review date for the patient. This will be decided upon between you and the specialist caring for the patient.
3. Fill out simple discharge form included in chart.
4. Inform the nursing staff caring for the patient.

## Discharging Patients

Discharge summaries are to be completed on the OPD cards (blue/pink forms) in the following format (see below example)

- Admission-PMH DOA: / \_\_/ \_\_\_\_\_
- DOD: \_\_/ \_\_/ \_\_\_\_\_
- Working Diagnosis:
- Brief summary of HPI, PE and Hospital course
- Results of important labs and studies performed
- List of all pending labs (e.g. CD4, TB MCS, etc)
- Plan:
- Follow-up plan (IDCC, MOPD, private MD, medical ward etc) with a SPECIFIC date.

A prescription list of meds pt is to take on discharge must be at the end of plan.

Patients will be scheduled for medical follow-up if needed in one of the following clinics

- PINK MALE MOPD—Mondays (PMH-MOPD)
- PINK FEMALE MOPD—Mondays or Thursdays (PMH-MOPD)
- PINK MALE IDCC—Thursdays (PMH-IDCC)
- PINK FEMALE IDCC—Wednesday, Friday (PMH-IDCC)

Any patient discharged with a pulmonary diagnosis should be given his/her CXR.

Complete all documents including TB cards as fully as possible.

## TB Registry

Any patient that has been started on anti-tuberculosis therapy (ATT) while in the hospital must be included in the national TB registry following discharge for treatment to continue. Botswana has a strict DOT policy for TB therapy and most patients must present themselves every day at their local clinic to receive medication. For this to occur there are two cards, a large pink one and a smaller blue one, these must be completed in full. Once done these cards should be included in the file and given to the nurse when the patient is prepared for discharge.

## Referral to South Africa

Patients with conditions needing testing or treatment not available at PMH may be in special cases referred to a specialist at a Johannesburg area hospital where the services closely approximate those available in a tertiary care facility in the US. However, before embarking on this process ensure that the PMH/BUP specialist has agreed that the patient would benefit from transfer.

## Common Medications

(Substitutions are essential as drugs are often out of stock) Analgesics:

Brufen (ibuprofen): 300mg PO q6 PRN Codeine: 30, 60, 90mg PO q6 PRN Paracetamol (Tylenol): 1g PO q6 PRN

## Antimicrobials:

- Penicillin G (X-Pen): 2-20 million units IV per day

- Amoxicillin: 500mg PO TID (dose BD or OD for renal insufficiency) Ampicillin: 2gm IV q4h
- Amoxicillin/Clavulanate (Augmentin) : 750mg PO BD
- Cefotaxime: usual dose 1-2 gm IV q6/ max dose 12 gm per day (dose q8-q24 for renal insufficiency)
- Chloramphenicol: 50mg/kg PO/IV up to 1 gm q6
- Clindamycin: 600mg PO/IV q8 Cloxacillin: 500mg PO/IV qid Erythromycin: 500mg PO QID
- Cotrimoxazole (TMP/SMX): toxo CNS, 960mg PO QD; PCP, 960mg PO QID; Prophylaxis 960mg PO MWF (or QD)
- Metronidazole (Flagyl): 500mg PO/IV BID
- Quinine (anti-malaria): 650mg PO TID and doxycycline 100mg PO BID for 5-7 days

#### Anti-Mycobacterial (ATT):

- Isoniazid: (>50kg) 400mg PO QD (<50kg) 300mg PO QD
- Rifampin: (>50kg) 600mg PO QD (<50kg) 450mg PO QD (at 6am)
- Ethambutol: (>50kg) 1200mg PO QD (<50kg) 1000mg PO QD
- Pyrazinamide: (>50kg) 2000mg PO QD (<50kg) 1500mg PO QD
- Pyridoxine (Vit B6): 25mg PO QD

#### Anti-Fungals:

- Amphotericin B: 0.7 mg/kg (usual dose 50mg) IV QD
- Fluconazole: 100-800 mg PO QD (if no Ampho, and for oral/esophageal thrush)

#### Oral Hypoglycemics:

- Glibenclimade (sulfonylurea): 5mg PO QD
- Metformin: 850mg PO

#### Antiretrovirals:

- Combivir (AZT/3TC): for all patients
- Nevirapine: Women of child-bearing age
- Efavirenz: All other patients

## Appendices

### About Botswana

#### Botho: Qualities of a Good Lifestyle

“Botho” is a Setswana word and Southern African principle (referred to as “Ubuntu” in Zulu, South Africa) which encompasses a well-rounded and moral way of living in which an individual recognizes that they are a part of a larger whole of society, and thus work towards common good. Fundamentally, by being Botho, one reflects their connection to society through their actions- they can only earn respect by respecting others, and gain empowerment by empowering others. Yet, as Nelson Mandela states, “Ubuntu [Botho] does not mean that people should not enrich themselves. The question therefore is: Are you going to do so in order to enable the community around you to be able to improve?”

People are not born with Botho yet acquire this way of living through their actions overtime. More specifically, Botho is denoted by characteristics like generosity, helpfulness, politeness, respect (especially for elders), and compassion. A few cultural examples of living Botho are:

- Taking your hat off when speaking to an elder or entering a building.
- Greeting someone before beginning a conversation or asking for help.
- Holding a door for someone you see carrying many bags.

See “Biblical Studies, Theology, Religion and Philosophy; An introduction for African Universities” (534-7) by J. N. Amanze, “Ubuntu Philosophy” (Wikipedia), and Ubotho.net/Botho-Vision 2016.

#### Cattle

Beef is a major export in Botswana and cattle are highly valued. Wealth is often measured by the number of cattle owned. Cattle posts are places where boreholes are drilled down to the level of groundwater. The cattle often roam free (“free range beef”) at the post and are not fenced (they don’t wander too far from the water) but they are looked after by a Modisa (herder). It is considered rude to ask someone how many cattle they have; it would be like asking someone how much money they have in the bank.

#### Kgotla

The kgotla is the traditional meeting place in villages where disputes are brought before chiefs and issues of public interest are discussed. Kgotla is both the name of the meeting place (a semicircular enclosure usually under the shade of a tree), and the name for the meeting, and serves as both the village council and the tribal court. Traditionally only men took part in these tribal meetings, but now women may attend. The kgotla is an early example of democratic principles at work. Anyone who attends the kgotla may speak. For this reason, some kgotlas may meet for several days. Ultimately the Kgosi (chief) makes the final decision. Kgotlas still play an important part of decision making and government in the villages outside of Gaborone. **If you are working in a village, it is important for you to visit the kgotla and introduce yourself to the local leaders. It is traditional and appropriate to dress conservatively when visiting a chief. No shorts; no pants for women.**

#### Birth Dates

Many older or rural Batswana don’t know the exact date of their birth. Births in rural areas are often linked to a season or a holiday or a memorable local event. Also, Batswana may give the year of their birth rather than their present age when asked how old they are.

#### Body Language

Like much of the world, Batswana do not have the same concept of personal space as Americans and may stand closer than people tend to in the US. It is also not uncommon for men to hold hands. You may also encounter a slight variation on the traditional western handshake, in that Batswana will shake hands, grip thumbs (with the same hand), and then shake hands again. Note that not everyone in Botswana makes eye contact when communicating with strangers. It is customary for young women and girls, particularly in rural areas, to avoid eye contact when speaking to strangers.

#### “Botswana Time”

Like many places, Botswana is not as time driven as the US. Do not expect meetings, cabs, etc. to be precisely on time. If you are going for a short amount of time or have time dependent goals, you are less likely to be successful in meeting them.

## Holidays

Date	English name	Local name
1 January	New Year's Day	Ngwaga o mosha
2 January	Public Holiday	
Varies	Good Friday	Labotlhano yo o molemo
Varies	Easter Monday	
Varies	Ascension Day	Tlhatlogo
1 May	May Labour Day	
1-2 July	Sir Seretse Khama Day	
16 July	President's Day	
17 July	Public Holiday	
30 September	Independence Day	Boipuso
1 October	Public Holiday	
25 December	Christmas	Keresemose
26 December	Boxing Day	

The first Monday after Christmas is also a Public Holiday. People usually begin celebrating the Christmas holiday at the start of December. It is therefore difficult to conduct business, making this month a poor time to visit.

You may travel farther afield if your time in Botswana falls over a national holiday when your site is closed. Note that you will need to book early as sites and flights sell out.

### Language (a background on Setswana)

While English is the official government language, Setswana is the language of the Batswana, both the ethnic group and most of the people of the country of Botswana. Large numbers of speakers of Setswana are also found in Zimbabwe and South Africa (where the language and the people are called Tswana).

Setswana belongs to the African Bantu language group, deriving from the same roots as Zulu in South Africa, Shona in Zimbabwe, and many other languages in the region.

Setswana was first written down by Robert Moffat (ancestor to the ex-superintendent of Princess Marina) when he translated the Bible into Setswana in the 1830s. Since Setswana was first written by an English speaker, most of the language is phonetically spelled for English speakers, with a few notable exceptions. (G is nearly always pronounced as H and TH as T.)

There are other languages spoken in Botswana, notably the language of the Basarwa of the Kalahari (a Khoisan or "click" language) and Kalanga, spoken by a minority group from the north of the country. Close to the border, you may also hear Afrikaans.

After Botswana's prosperity started in the 1970s, newly independent Botswana invested heavily in primary schooling. Today, Setswana is the language of instruction for children up to the 4th grade and English is taught as a subject. From fifth grade on, English becomes the language of instruction and Setswana is taught as a subject. In general, the people least likely to speak English in Botswana are children and elders. Batswana you encounter from 10-50 years old will be able to have a conversation with you in English, though they may be more comfortable in Setswana if (as is likely) it was spoken at home.

You may recognize some cognates to English, German, or Dutch, most of which entered Setswana during and after the Protectorate period, generally via South Africa's English and Boer settlers, but also through neighbors in the former English colony to the northeast, Rhodesia, now Zimbabwe, and the former German colony to the West, now Namibia.

## A Quick Review of HIV/AIDS in Botswana

HIV/AIDS surveillance has been taking place since 1990 in various settings in Botswana. Adult prevalence is close to 20%, making it the country with the third highest percentage of adults infected with approximately 68,000 "AIDS orphans."

### Possible causes of rapid spread and sustained high prevalence:

- Low male circumcision rates. Though historically tribes in Botswana practiced circumcision, it fell out of favor during the Colonial Era. New funding is seeking to increase male circumcision rates for HIV prevention.
- A highly mobile society with excellent roads with the vast majority of the population located in a relatively small geographic area. Rapid movement between the homes, resulting in only narrow differences between rural and urban HIV infection rates.
- Multiple concurrent partnerships.
- Despite the prevalence, there is still significant stigma against HIV; many people are afraid to get tested.

## Botswana's Response to HIV/AIDS

In January 2002, under the leadership of President Festus Mogae, Botswana rolled out an extensive HIV prevention and treatment program called *MASA*, the Setswana word for "dawn". This required the development of an HIV management infrastructure. The program is free to all citizens (they have national health care).

Free ARVs are available to all citizens. Botswana achieved over 97% viral load suppression among HIV patients on ARV therapy. In 2019 free ARVs were made available to all foreign residents.

In 2021 press release from UNAIDS: "Botswana has become the first high-burden country to be certified for achieving an important milestone on the path to eliminating mother-to-child transmission of HIV by the World Health Organization. The Government of Botswana and the CDC worked together to reduce mother-to-child transmission from 40% in 1991 to 1.9% in 2020.

## UPENN's Role and Work in Botswana

Penn has worked in Botswana since 2001 and currently employs approximately 120 full-time staff in country working under the name the Botswana-UPenn Partnership. The Botswana-UPenn Partnership works with the Government of Botswana Ministry of Health (MOH) and the University of Botswana (UB) to build capacity in Botswana in response to the HIV/AIDS epidemic. Penn is taking a broad interdisciplinary approach to train health-care personnel throughout Botswana in the treatment of HIV/AIDS and its complications, to help develop post-graduate training programs at the University of Botswana with an emphasis on Internal Medicine and its subspecialties, to offer experience in global health to Penn trainees, and to develop joint research programs that address issues relevant to the health and welfare of the citizens of Botswana.

## History of Penn's Involvement

Penn was originally invited by ACHAP (African Comprehensive AIDS Partnership, the Bill and Melinda Gates Foundation, the Merck Foundation, and the Government of Botswana) in 2001 to train health care workers on the management of HIV-infected patients in Botswana, a country that at that time had the highest HIV prevalence rate worldwide. The mission of the Botswana-UPenn Partnership (BUP) today is to serve as technical advisers for clinical care and education and build research collaborations with key stakeholders in Botswana.

## Current Programs & Initiatives: Clinical

### HIV Care & Support Program

The HIV Care & Support is the oldest Botswana-UPenn Program, started in 2003, to provide technical support for the national rollout of antiretroviral therapy treatment for HIV infected citizens. The current goal of the program is to improve the quality of care received by HIV-positive individuals with co-morbid conditions and complications of chronic disease.

### TB – Adult and Pediatric

Tuberculosis is a common co-infection among HIV/AIDS patients in Botswana and is one of the leading causes of death there. The Botswana-UPenn Partnership TB program includes the following:

- Providing expert clinical care for complicated TB/HIV cases, including drug-resistant TB (DR-TB)
- Providing outreach services to medical providers caring for patients with TB/HIV and DR-TB

- Providing clinical training and mentoring for clinicians involved in the management of TB/HIV and DR-TB
- Supporting the University of Botswana in undergraduate and post-graduate medical education
- Providing technical assistance to the Ministry of Health on issues related to TB/HIV and DR-TB

### Women's Health: Cervical Cancer Screening & Treatment

The BUP Women's Health Program was established in 2009 and is led by former BUP Country Director, Doreen Ramogola-Masire, MD. The first program was a pilot project to screen and treat pre-cervical cancer lesions using the "See & Treat" approach for cervical cancer prevention service. Some projects include:

- Providing cervical cancer prevention services for HIV-infected women using visual inspection after acetic acid (VIA) with enhanced digital imaging (EDI)
- Providing treatment of precancerous cervical lesions using cryotherapy provided by nurses and loop electrical excision procedure (LEEP) provided by specialists, when necessary
- Providing technical assistance to the Ministry of Health for other women's health issues including advising on national HIV issues, and maternal mortality issues in Botswana
- Providing technical assistance to the University of Botswana's school of medicine in teaching undergraduates and training postgraduates

### Telemedicine

Carrie Kovarik, MD, launched the BUP teledermatology program in 2007 which has expanded into a broad telemedicine program that seeks to circumnavigate the challenging landline IT infrastructure in the region and a severe shortage of healthcare workers (particularly specialists) by using cell phone equipped with digital cameras and other electronic tools for to transmit health information for education, diagnosis, and eventual treatment. Current efforts include:

- Organizing and hosting a national Health Informatics Conference with local partners
- Providing support to the MOH for a national informatics strategy and in-service training
- Providing curriculum integrations and development to schools at UB
- Providing support to a live robotic telepathology system whereby a motorized microscope in Gaborone is used to remotely read and assess pathology slides by off-site technicians.
- Providing access to specialty care with mobile oral telemedicine, mobile cervical cancer screening, mobile teledermatology, and mobile teleradiology
- Providing access to medical resources including national treatment guidelines using an SMS query system and mobile telementoring

### Current Programs & Initiatives: Educational

The Partnership has two main medical initiatives, one directed at medical students and trainees in Botswana and the other for students and trainees at Penn. The first program is a collaboration with UB School of Medicine, and the Harvard School of Public Health, under MEPI (Medical Education Partnership Initiative) to strengthen medical education in Botswana.

The second program provides global experiences for Penn students and trainees in Botswana and includes providing global health experiences for students from Penn's Schools of Dental Medicine, Medicine, Nursing, and Veterinary Medicine. The program also provides global health experiences for Penn residents and trainees in medicine, OB/GYN, surgery and other programs; pediatric residents from CHOP, plus dermatology residents from Penn and elsewhere to rotate to Botswana.

Undergraduate and graduate students from other Penn schools work in summer internship positions in Botswana.

### Current Programs & Initiatives: Research

The BUP has 10 major National Institutes of Health (NIH) grants plus funding for many pilot projects funded by the Penn Center for AIDS Research and others. BUP-affiliated researchers in Botswana and at Penn have co-authored more than 150 scientific articles to date.

### Measuring the Impact

In 2011, the Partnership had 177 people participate in some part of the Botswana-UPenn Partnership. This included 19 Penn faculty members and researchers (from assorted schools), 5 Penn & CHOP Staff, 4 Penn & CHOP Fellows, and 29 Penn Medicine Residents. There were 89 Penn students including 2 Doris Duke Charitable Research Foundation Medical Student Fellows, 6 Penn Dental Students, 33 Penn Medicine Students, 12 Penn Nursing Students, 14 Penn Summer Interns, 1 Penn

Law, and 21 Wharton Undergrads as part of WIP (Wharton International Programs).

In the twelve years that Penn has been working in Botswana, approximately 1400 Penn faculty, and students have traveled to Botswana to work in a Partnership program.

Below we summarize key aspects of the Partnership clinical program this past year. In all the activities Penn providers work closely with local health care workers in an effort to build capacity in country.

Human resources provided by Penn:

- Number of medical specialists (Internists, Infectious Disease sub-specialists, Pediatricians, Combined Medicine/Pediatrics) working as clinicians in Botswana: 10 full time in past year
- Number of medical residents working on wards of major teaching hospital for 5-week rotations
- Number of senior (4th) year medical students working on the wards of the major teaching hospital or a district hospital for 7-week rotations

Inpatient clinical care:

- One or more of Penn Specialists round on Internal Medicine ward of teaching hospital 12 months annually
- One or more of the Penn Specialists round on the Pediatric ward of the teaching hospital 12 months annually

Outpatient clinical care provided by Penn Specialists working in Partnership with MOH and UB:

- Number of HIV patients screened for cervical cancer in past year: 1200
- Number of HIV patients treated in past year: 750
- Number of adult HIV/TB patients treated in past year: 900
- Number of pediatric TB patients treated in past year: 100

## Top Ten Causes of Death in Botswana

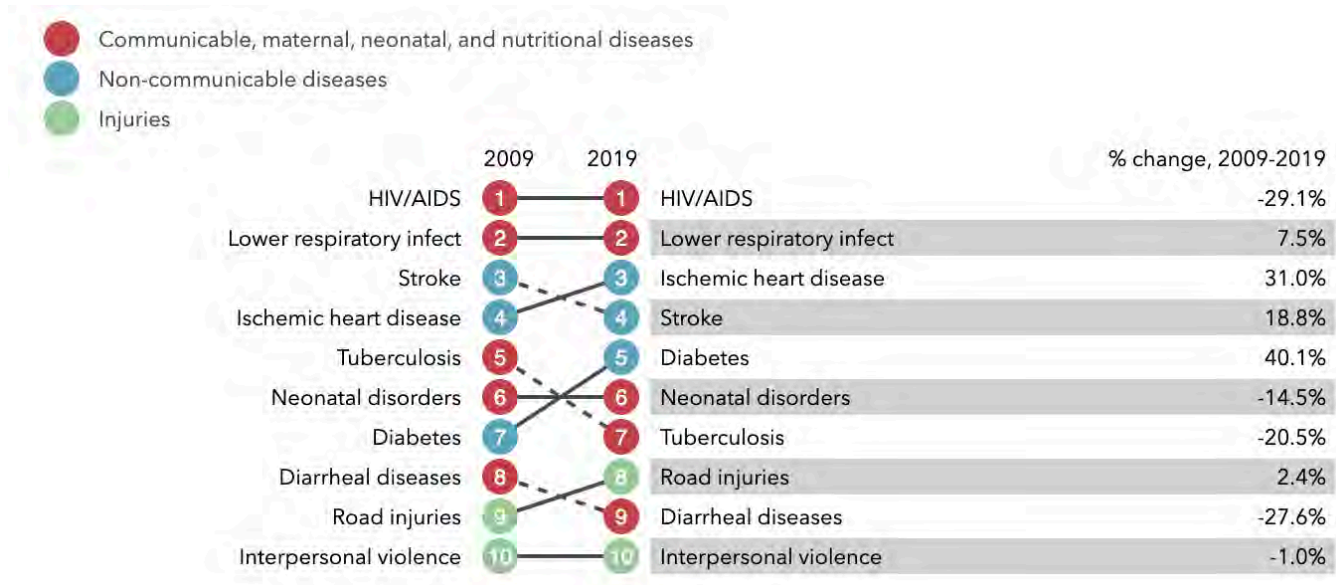


Figure 1: UN Population Division. World Population Prospects: 2019 Revision

## Books to read

If you only read one book before traveling to Botswana, we recommend “Botswana - Culture Smart!: a quick guide to customs and etiquette” by Michael Main. This is a short guide but includes valuable information for getting around and along in Botswana. Julie Livingston’s book “Improvising Medicine” is also an excellent book written from her observations in the oncology ward at PMH.

Books written by Unity Dow (The Screaming of the Innocent and Far and Beyon’) are insightful into both village life and modern life in Gaborone. Unity Dow is a human right’s activist and attorney who later became Botswana’s first female High Court judge. Her novels often concern the struggle between Western and traditional Batswana values and issues of gender equity and poverty.

Many westerners' first exposure to Botswana is from reading the #1 Ladies Detective Agency series by Alexander McCall Smith. "Sandy" was born in Zimbabwe and taught law at University of Botswana for over twenty years. He is a long-time friend of Howard Moffat, ex-Superintendent of PMH. The books are quick and enjoyable reads but are regarded as a bit old fashioned by many Batswana.

If you plan a trip to South Africa, a Long Walk to Freedom, Nelson Mandela's autobiography, is also recommended.

Books by Bessie Head are also worth considering. You can visit her hometown/museum in Serowe.

Note that CGH has several books on Botswana that we are happy to lend you. PLEASE return them following your trip. Also, we welcome the donation of books about Botswana (travel guides, novels, etc.) to our program for use by other travelers.

## Sight Seeing/Travel

### Travel Agents/Tour Guides

Talk to other Penn visitors about their recent travels for their advice on tours and trips you can make while in Botswana. Remember that if you are in Botswana over a Bank Holiday weekend that you need to plan well in advance.

### Art

The Thapong Visual Arts Center is a cooperative of artists' studios, located near Gym Active, and across from the old prison in Gaborone Village. It is open daily until 18:30 and features an amazing collection of resident artists' mostly contemporary works of African sculptures and paintings. The studios are in shanties scattered around the cooperative, and the artists are always more than willing to talk with visitors. This is a very interesting place to go. You can purchase or commission pieces there. Gabane artists are also worth a visit just out of town.

### Crafts

The Craft Center is a group of craft stores in the Broadhurst section of town. It is open during the week and on Saturdays until 15:00 (3:00 pm). Here you will find a bunch of ex-pats buying crafts, clothes, and eating at the Italian deli. There is a hair salon here and a wine shop that sells Biltong (local dried meat).

Botswanacraft has the best selection of local crafts and Botswana baskets. (Note the baskets are sold as art and priced accordingly!) There is also a café there and a performance venue and exhibition space.

### Day Trips in Gaborone

You can hire a cab for all or part of a day to take you to any of these places. Additional information and ideas will be offered at the BUP orientation.

- Gaborone Dam: The only body of water in Gaborone! It is a fun place for a picnic and you can check out the yacht club for a drink.
- Gaborone Game Park: It does not have any predators but is a good place to spot birds, and antelope, warthogs, zebras, ostrich, and other wildlife. A very pleasant place to spend an afternoon. The Gaborone Game Park does not require a 4-wheel drive car (but you can ONLY go in with a car, so hire a driver to take you). There are several game view sites where one can sit and enjoy the peace and bird sounds. There are nice picnic areas where you can BBQ as well. Watch out for the baboons who will want to dine with you.
- Kgale Hill: located in the southwest part of Gaborone. It is a moderate hike, about 3 kilometers to the top. There are great 360-degree views of Gaborone from the top. Look out for the baboons. Cars have been broken into when left at the foot of the hill. Cars can be left in the nearby parking lot at Game City and then you can walk to the hill. Because of recent muggings, the US embassy has advised against climbing Kgale. If you go, travel in a group and do not bring anything of value.
- Mokolodi Game Preserve: located a mere 15 kilometers outside Gaborone on the road to Lobatse. A wealthy lawyer who still lives in the large mansion on the property donated this beautiful area of land. Game includes various antelopes, giraffe, zebras, warthogs, white rhino, and elephants. This is a nice and convenient "safari". They also have two cheetahs (that you can pet!). You can take guided tours and attend various educational programs on site. It is about P35 for a one-day pass.
- National Museum: The National Museum is located near the Main Mall and a block from PMH. It is a nice museum. It is not very big, so can be seen in just a couple of hours.



## Daytrips Outside of Gaborone

- Gabane: a village close to Gaborone where you can visit the kgotla (tribal meeting place), a pottery works and a glass and art works where you can buy glass pieces or take classes.
- Kolobeng: There is a site where David Livingstone, the missionary and explorer, built a house and church on his way to the north before he “discovered” Victoria Falls. This homestead was burned down by the Boers with only ruins remaining and the graves of some of his family members. Alfred is on site and always pleased to show visitors around. A stop at Kolobeng is easily included in a drive to Thamaga.
- Mochudi: Has an interesting local museum with a great view of the valley and is overall a nice village to visit. It is known for its traditional architecture.
- Molepolole: On the way to the Kalahari, you can stop there and visit the Scottish Livingstone Hospital started by Dr. Alfred Merriweather, a missionary and doctor.
- Oodi: There is a weaving cooperative that you can tour and purchase local woven art. Easily included on a drive to Mochudi.
- Otsi: There is a crafts cooperative run by Camphill. A nice half day trip where you can also take in the Vultuary outside of town. There is a nice little Barantani Lodge in the village where you can stop for a cold drink. A cheese factory is across the road from the village.
- Serowe: About a 4 hour drive to the north on the Gaborone-Francistown road. Serowe is one of Botswana’s largest tribal villages. Just outside of the village is the Khama Rhino Sanctuary which is seeking to save the last remaining rhinos in Botswana. This makes a good overnight trip where you can stay in a self-catering chalet in the rhino sanctuary. Serowe is the birthplace of Seretse Khama, Botswana’s first president (and the father of the fourth president). This trip can easily be made in a weekend.
- Thamaga: A small village outside of Gaborone known for its pottery and is a great place to buy souvenirs. It is an approximately 30-45 minute drive along the road to Gabane, and you can catch a bus there from the bus station.

## Vacations

Obviously traveling to Botswana presents a great opportunity to travel to some world-class vacation destinations, including several in Botswana (Chobe, Kalahari, Okavango, Tuli, and the World Heritage Site at the Tsodilo Hills). But if an exotic vacation is a primary factor in your decision to go to Botswana on a BUP program, you should examine your motivations for this trip. Our goal is to improve health and healthcare capacity and build research and education programs in Botswana; we are not running a tour operation. Students and residents are expected to work all regular work days Monday through Friday since your travel is subsidized by Penn.

Most longer trips (Okavango, Chobe, Cape Town) require Friday flights that are not conducive to work. If you are in Botswana during a national holiday (see list above) than you may have time to work in a longer vacation during your time in Botswana but the best advice is to plan your vacations BEFORE or AFTER your programmed time in Botswana. If you do not have enough time to sightsee on this trip on your own time, then you will need to plan to return at a later date. Students and trainees who receive funding or stay in subsidized housing while in Botswana, and do not report for duty on normal work days while in country, may be liable for the full price of their program expenses.

While the world-class regional sights are awe-inspiring, please recognize that many people with whom you will work in Botswana have never been to these places, just as not everyone who lives in the United States has been to New York City or the Grand Canyon.

## Recreation Time

Up to date information on Restaurants and Groceries will be provided in your BUP orientation upon arrival in Botswana.

### Religious Outings / Other

Religion is big in Botswana. Mass at Main Mall can be a nice respite even if you aren’t Catholic or Episcopalian. They sing songs in Setswana and Botswana has a great choral music tradition, so the songs alone can be lovely.

ISKCON Temple is a Hindu Temple that you can visit. It has elaborate architecture with elephants, tigers, and people carved into the building. It is located in Phase Two across the street from the Private standards school (Boabob). Note that shoes and photographs are prohibited inside.



Botswana



## Common Acronyms

<i>ABC</i>	Abstinence, Be faithful and Condoms
<i>ACHAP</i>	African Comprehensive HIV/AIDS Partnership (Gates & Merck Foundations & GOB)
<i>AIDS</i>	Acquired Immune Deficiency Syndrome
<i>ANC</i>	Ante-Natal Clinic (Surveillance)
<i>ART</i>	Antiretroviral Therapy
<i>ARV</i>	Antiretroviral (AIDS medicine)
<i>ATT</i>	Anti-tuberculosis therapy
<i>BAIS</i>	Botswana AIDS Impact Survey
<i>BBFE</i>	Blood and body fluid exposure
<i>BER</i>	Bureau for Economic Research
<i>BHP</i>	Botswana-Harvard Partnership (Harvard School of Public Health AIDS Initiative for HIV Research and Education)
<i>BHPC</i>	Botswana Health Professions Council
<i>BHRIMS</i>	Botswana HIV/AIDS Response Information Management System
<i>BIDPA</i>	Botswana Institute for Development Policy Analysis
<i>BIPAI</i>	Baylor International Pediatric AIDS Initiative
<i>BNPC</i>	Botswana National Productivity Centre
<i>BONASO</i>	Botswana Network of AIDS Services Organizations
<i>BONEPWA</i>	Botswana Network of People Living with HIV/AIDS
<i>BOTUSA</i>	Botswana-USA partnership
<i>BUP</i>	Botswana-UPenn Partnership
<i>CBO</i>	Community Based Organization
<i>CCF</i>	Congestive cardiac failure
<i>CDC</i>	Centers for Disease Control and Prevention
<i>CGE</i>	Computable General Equilibrium
<i>CI</i>	Clinically Immuno-suppressed – not HIV tested but likely HIV+
<i>COP</i>	Chief of Party
<i>CSO</i>	Civil Society Organization
<i>CSW</i>	Commercial Sex Worker
<i>CTBC</i>	Community Tuberculosis Care
<i>DSS</i>	Department of Social Services
<i>ECD</i>	Early Childhood Development
<i>FBO</i>	Faith Based Organization

<i>FP/SRH</i>	Family Planning/Sexual and Reproductive Health
<i>GBV</i>	Gender Based Violence
<i>GDA</i>	Global Development Alliance
<i>GDP</i>	Gross Domestic Product
<i>GHI</i>	Global Health Initiative
<i>GOB</i>	Government of Botswana
<i>HARRP</i>	HIV/AIDS Rapid Response Project (World Bank)
<i>HBC</i>	Home-Based Care
<i>HIES</i>	Household Income and Expenditure Survey
<i>HIV</i>	Human Immunodeficiency Virus
<i>HTC</i>	HIV Testing and Counseling
<i>IDCC</i>	Immunodeficiency Care Center (the HIV clinic at PMH)
<i>IEC</i>	Information Education and Communication
<i>IFPRI</i>	International Food Policy Research Institute
<i>IGA</i>	Income Generating Activities
<i>IRB</i>	Institutional Review Board
<i>KITSO</i>	National HIV training program
<i>M&amp;E</i>	Monitoring and Evaluation
<i>MARPs</i>	Most-At-Risk Populations
<i>MC</i>	Male Circumcision
<i>MLG</i>	Ministry of Local Government
<i>MOH</i>	Ministry of Health
<i>MRC</i>	Medical Research Council
<i>MSM</i>	Men who have Sex with Men
<i>NAC</i>	National AIDS Council
<i>NACA</i>	National AIDS Coordinating Agency
<i>NDP</i>	National Development Plan
<i>NGO</i>	Non-government Organization
<i>NGY</i>	Nyangabgwe Hospital (referral hospital in Francistown_
<i>NOP</i>	National Operational Plan
<i>NSF</i>	National Strategic Framework on HIV and AIDS
<i>NSP</i>	National Strategic Plan (for HIV/AIDS)
<i>OAP</i>	Old Age Pension
<i>OMB</i>	Office of Management Budget

<i>OVC</i>	Orphans and Vulnerable Children
<i>PEP</i>	Post exposure prophylaxis
<i>PEPFAR</i>	President's Emergency Plan for AIDS Relief (U.S.)
<i>PF</i>	Partnership Framework
<i>PLHIV</i>	People Living with HIV/AIDS
<i>PMH</i>	Princess Marina Hospital
<i>PMTCT</i>	Prevention of Mother-to-Child Transmission
<i>PPP</i>	Public-Private Partnership
<i>PSS</i>	Psycho-Social Support
<i>PTD</i>	Pulmonary tuberculosis
<i>RFA</i>	Request for Applications
<i>RHAP</i>	Regional HIV/AIDS Program (USAID/Southern Africa)
<i>SADC</i>	Southern African Development Community
<i>SAM</i>	Social Accounting Matrix
<i>SIP</i>	Sex workers Intervention Program (Worldview)
<i>STDs</i>	Sexually Transmitted Diseases
<i>STI</i>	Sexually Transmitted Infection
<i>TB</i>	Tuberculosis
<i>TDA</i>	Tourist Development Area
<i>TFP</i>	Total Factor Productivity
<i>UB</i>	University of Botswana
<i>UNAIDS</i>	Joint United Nations Program on HIV/AIDS
<i>UNDP</i>	United Nations Development Program
<i>UNICEF</i>	United Nations Children's Fund
<i>USAID</i>	United States Agency for International Development
<i>USG</i>	United States Government
<i>VCT</i>	Voluntary (HIV) Counseling and Testing
<i>VDC</i>	Village Development Committee
<i>VHC</i>	Village Health Committee
<i>WAD</i>	Women's Affairs Department
<i>WHO</i>	World Health Organization