



BOTSWANA-UPENN
PARTNERSHIP

Building a Healthy Future Together



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Overview of Botswana- Penn Partnership

Botswana-UPenn Partnership Mission

To help build healthcare capacity in a large country with a small & sparse population facing the challenges of an HIV epidemic.

Addresses:

- Clinical Care
- Education & Training
- Research

To offer opportunities in global health for Penn/CHOP trainees and faculty and academic careers for BUP faculty



BUP History: Ten Years in Botswana

- ▶ Penn has been in Botswana since 2001
- ▶ First invited by ACHAP (Gates & Merck Foundations and Gov of Bots) to have Penn physicians help train local providers on the management of HIV infected patients.
 - ARVS were made available at lower cost in Africa.
 - Botswana has national healthcare, but did not have enough qualified providers to implement treatment.



Botswana-UPenn Partnership Today

- ▶ Numerous funding partners, including African Comprehensive HIV/AIDS Partnership, US President's Emergency Plan for AIDS Relief, & National Institutes of Health
- ▶ 65 fulltime BUP / Penn employees in Botswana, including 12 doctors and researchers
- ▶ 3 dedicated staff and 1 director at Penn
- ▶ Onsite facilities & vehicles



BUP 2011: 3 Major Initiatives in Botswana

1. Clinical Care & Services, including:

- HIV
- TB
- Women's Health

2. Training & Education, including:

- University of Botswana (UB) – Penn collaborations
 - Curriculum design and delivery
 - Bedside teaching & Rounding
- Penn Trainees: Global Health Opportunities
 - ~ 26 4th year med students
 - ~ 26 residents/fellows annually (Medicine, Derm, OB-GYN, Radiology, Surgery, Fam Med & CHOP Peds)

3. Research

- Sponsored research projects addressing numerous challenges, including HIV, TB, and telemedicine for remote diagnosis

Clinical Care & Services

- ▶ HIV inpatient and outpatient care
- ▶ Developing national guidelines for HIV, TB and other diseases
- ▶ Outreach to district hospitals
- ▶ Women's health



Training & Education

- ▶ Penn and UB collaborate on further development of new UB School of Medicine:
 - Recruit faculty to the DOM and subspecialties for UB SOM
 - Develop local research capacity
 - Transform current HIV clinical outreach sites into educational facilities
- ▶ Penn and UB also collaborate on undergraduate and graduate educational programs:
 - Semester abroad (bilateral)
 - Summer internships
 - Sabbaticals



Research

- ▶ NIH grants in a number of areas including:
 - Immunology
 - Pharmacogenetic and HIV Treatment Outcomes
 - Partnership for Capacity-Building for HIV/STD Prevention Research on Adolescents

- ▶ Penn Center for Aids Research grants in:
 - Medicine
 - Neurology
 - Dermatology
 - Pediatrics
 - Psychiatry
 - Research Ethics

Successes

- ▶ ART coverage in Botswana more than 80% as of 2009
- ▶ AIDS-related deaths down from 15,500 in 2003 to 7,400 in 2007
- ▶ New HIV infections among children down from 4,600 in 1999 to 890 in 2007
- ▶ HIV transmission from mother to child is down from 40% to under 6%.
- ▶ Estimated number of children newly orphaned by AIDS fell by 40 percent.

Future Risks to Health

- ▶ HIV/ AIDS is still the biggest health risk but with improved treatment there is now a steady increase of noncommunicable diseases, namely:
 - Hypertension
 - Cancers
 - Diabetes
- ▶ Other health issues include:
 - Oral health
 - Mental health
 - Injuries and disabilities

Enhancing the Partnership with Technology

The background features a dark blue-grey gradient. On the left side, there is a faint, semi-transparent compass rose with a needle pointing towards the top-left. To its right, a faint line graph with several peaks and valleys is visible. The text is centered in the upper half of the image.

Three Selected Areas Where Technology has Improved the Partnership

- ▶ Telemedicine
- ▶ Access & Training
- ▶ Informatics

Telemedicine

- ▶ Telemedicine provides consultations for healthcare providers in resource-limited settings where specialty medical services are difficult to obtain.
- ▶ Programs currently in cities and district hospitals
- ▶ Internet based telemedicine
 - dermatology
 - pathology
- ▶ Mobile Telemedicine
 - oral medicine (dental medicine)
 - radiology
 - gynecology
 - Coming soon: TB contact tracing with GPS localization

Telemedicine Dermatology Residents' International Grant

- ▶ Began in 2008: sponsored by the American Academy of Dermatology and the BUP
- ▶ Grant given to 12 senior dermatology residents per year
- ▶ 4-6 week rotation covering the Inpatient and Outpatient Derm Consultation Service at PMH in Gaborone and surrounding outreach clinics
- ▶ Real-time telepathology set up for the residents to have their biopsies reviewed by Penn Dermatopathology

Resident in Skin Clinic in PMH



Photo by Ryan Littman-Quinn

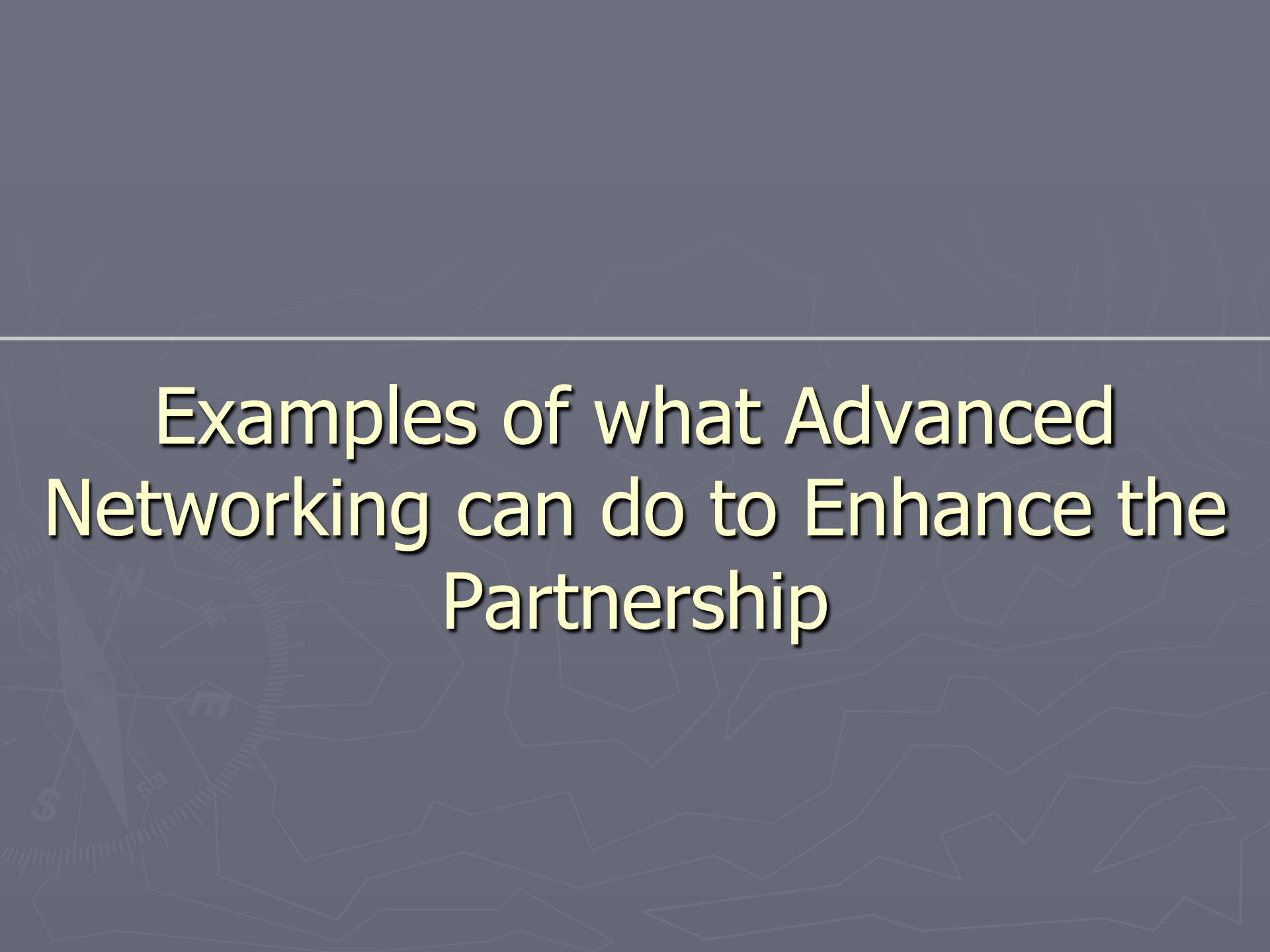
Information Access and Training

- ▶ Penn & CHOP staff provided an IT audit of UB in spring 2010.
- ▶ BUP faculty & staff developing clinical guidelines for health informatics
- ▶ Penn Biomedical librarians train librarians in Botswana on how to access health information online

Informatics

Support & Training (funded by PEPFAR)

- ▶ Working with the Botswana Ministry of Health:
 - Evaluate the current infrastructure of informatics capacity, support, and training
 - Outline method where we can assist in supporting and building capacity
- ▶ Working with the University of Botswana:
 - Implementing training programs for UB faculty, residents, & students
 - Conducting formal workshops
 - Developing assessment tools & evaluating progress

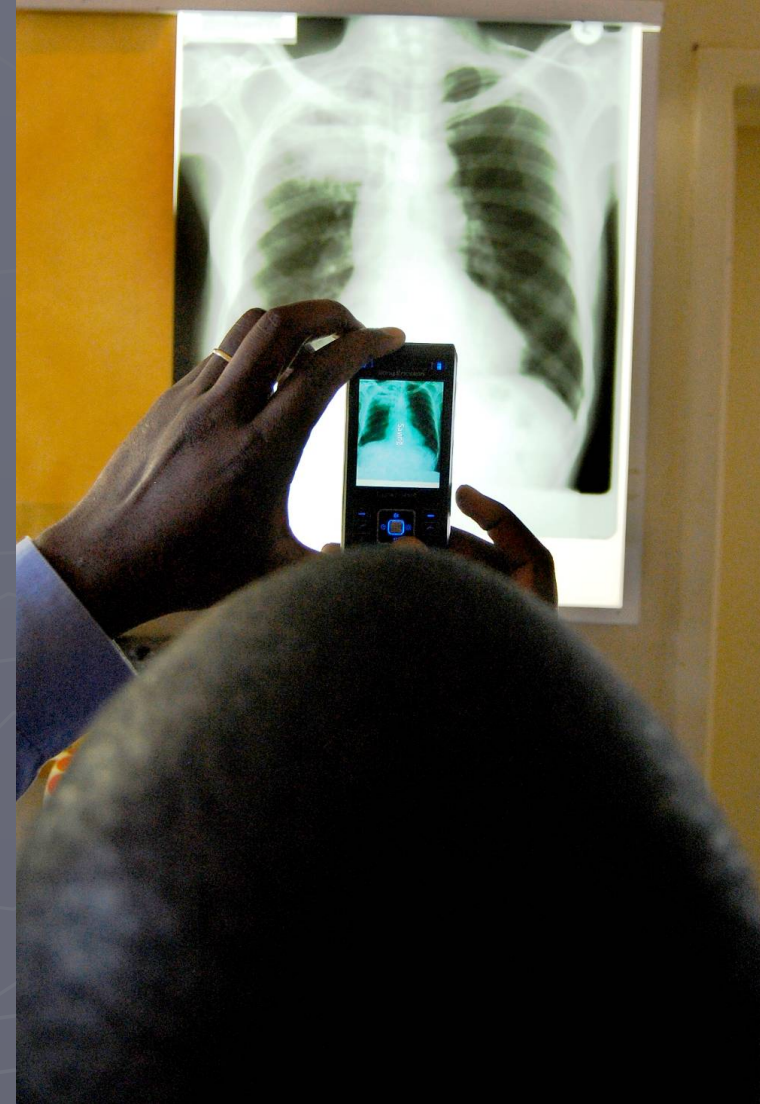
The background is a dark blue-grey color with a subtle pattern of light grey lines forming a network or map. A faint compass rose is visible on the left side, with a dollar sign (\$) near its base. The text is centered and has a slight drop shadow.

Examples of what Advanced Networking can do to Enhance the Partnership

Advanced Networking Botswana-Upenn Partnership

► Telemedicine

- Improve quality of telemedicine images
- Allow expansion of services to more disciplines, such as pathology, radiology
- Allow access to care at rural sites
- Allow access to medical information from rural sites



Advanced Networking Botswana-Upenn Partnership

► Access

- Easier access to US and Penn libraries on-line would facilitate education and information flow
- Access to key clinical information in remote sites
- Videoconferencing of joint UB and Penn research seminars, lectures, etc

Advanced Networking Botswana-Upenn Partnership

► Research collaborations

- Videoconferencing allows for real-time evaluations & decisions
- Sharing of large files & databases for collaborative research projects
- Ensure regulatory compliance with governments, institutions & sponsors
 - Facilitates distant learning courses on bioethics
 - Enable participation on regulatory bodies by Penn personnel to ensure compliance, i.e. IRB, IACUC, etc



Building a Healthy Future Together

Sharing the expertise of a world-class university with our partners in Botswana to build capacity and excellence in clinical care, education, and research