Antiretroviral Scale-Up in Resource Limited Countries: Training the Pharmacists

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A global view of HIV infection
Number of people receiving antiretroviral drugs in low- and middle income countries, 2002–2007

Source: Data provided by UNAIDS & WHO, 2008.
Key Challenges in Provision of Antiretrovirals – Pharmacists’ Perspective

- Increasing number of patients in need of ARVs
- Shortage of pharmacists in many countries, relying on non-pharmacists as dispensers of ARV
- Expansion of pharmacists’ roles – from a “product-oriented” role to a “patient-oriented” role
  - is this feasible given the current shortage?
- Need for formal training in HIV pharmacotherapy
- Need time for the training
- Need qualified trainers
- Rapidly emerging safety & efficacy data, new drugs, etc – requires continuous updating
• Almost all Asian & South American countries have \( \geq 1 \) pharmacy school

• Only 18 of 52 African countries have \( \geq 1 \) pharmacy school – mostly richer countries

• In most areas of Africa, ARV provision is done by pharmacist assistants or nursing sisters
Impact of HIV/AIDS on Pharmacist Shortage

- ↓ # of graduates from secondary schools that are qualified to enter into tertiary training programs
- ↓ # of graduates of secondary schools who seek healthcare as career goal
- Pharmacist attrition - HIV/AIDS-related death or early medical retirement
- Migration of pharmacists to resource richer environments
Human Resources Challenges in the AIDS Epidemic - Sub Saharan Africa

- Estimated # of patients with HIV = 22.5 million
- Assuming 1 pharmacist takes care of 500 ARV-treated patients
- To assess the human resource needs:

<table>
<thead>
<tr>
<th>% of pts needing ARV</th>
<th># of pts</th>
<th># of pharmacists</th>
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</thead>
<tbody>
<tr>
<td>10 %</td>
<td>2,250,000</td>
<td>4,500</td>
</tr>
<tr>
<td>25 %</td>
<td>5,625,000</td>
<td>11,250</td>
</tr>
<tr>
<td>50 %</td>
<td>11,250,000</td>
<td>22,500</td>
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All training plans should take into account human resource capacities & limitations
Proposed Methods to Meet Human Resource Challenges

• Increase # of pharmacy schools & students per class
• Provide incentives to keep pharmacists from migration
• Conditional scholarships for current students
• Assure HIV-infected pharmacists & family member are getting ART & staying healthy
• Train non-pharmacists to fulfill some less technical pharmacists’ tasks
• Utilize foreign pharmacists from charity organizations
Training of Pharmacists – Strategic Planning

- Planning at national and regional levels, based on:
  - The epidemics in the region
  - Current level of pharmacy support
  - Current level of ARV provision
  - Projected number of patients entering into care
  - Projected pharmacists : patients ratio
  - Realistic level of care and commitment
Training of Pharmacists - Identify Areas of Need

- Who to train? – Pharmacists? Pharmacist Assistants?
- How many need to be trained?
- Who are the trainers?
- Where are the funding sources?
- What mode of training will work best for the intended audience?
- Define the level of competency
- How to measure competency?
- How to sustain level of competency?
Funding Sources

- PEPFAR and other agencies from resource richer countries
- Non-governmental organization (e.g. MSF, Treat Asia)
- Local governments
- Academic affiliations (locally or with other countries)
- Pharmaceutical companies
- Competitive grants
- Research programs
Training Plan

• **Identify trainers:**
  – Existing resources or outsourcing
  – Experts in the local area

• **Identify trainees**
  – Pharmacists & pharmacist-assistants in practice
  – Training at pharmacy schools
  – Other dispensing personnel

• **Key to Success:** Identify leaders amongst the trainees to carry out future training
Hurdles in Training Practicing Pharmacists

• Time constraints
• Work- & family-related stress
• Lack of financial incentive for training
• Afraid of complexity of ARV pharmacology
• Afraid to take on a “patient-oriented” role
• Discrimination against HIV-infected patients
Using Trainers from Outside/Foreign Sources

• **Goal:** CAPACITY BUILDING, skill sets should be sustainable after the trainers leave the country/region

• The trainers should:
  – Engage local area experts in planning and training
  – Understand existing systems and limitations
  – Be sensitive to and respectful of cultural differences
  – Provide long distance clinical mentorship after initial training
  – Train local trainers
  – Reinforce self learning & lifelong learning
Basic HIV Training for Pharmacists

HIV Pathogenesis
• Mode of transmission & Prevention strategies
• Time course & consequences of untreated HIV
• HIV/AIDS-related OIs – including prevention and treatment

ARV
• ARV pharmacology & expected outcomes
• Association of adherence & resistance/treatment failure
• Common side effects, detection & management
• National ARV guidelines
Additional Topics of Training

- Psychosocial Aspects of HIV/AIDS
- Effective Communication Skills – with patients & other HCW
- Patient confidentiality
- Basic Computer Skills
Advanced Training for Pharmacists

• Drug information and literature evaluation

• Unique aspects of HIV & ART use in different populations – children, women, elderly, etc.

• Preparation of information newsletters, patient education materials

• Preparation and presentation of lectures

• Clinical research training
Training Format and Tools

• Lectures - live, videotape/conferencing
• On-line, self-paced training
• Newsletter, text, journals
• Practical training at other sites
• Bring trainers to the sites – more time efficient
• Case studies
• Training abroad
Traditional/Local Medicines & ARV
Traditional Medicine and ARV

• Use of traditional herbal or other medicines – common across all cultures

• Potential pharmacokinetic and/or pharmacodynamic interactions between ARV and traditional medicine – continue to be an area of concern

• Pharmacists – key persons to identify pts taking traditional meds and assess for potential adverse reactions or interactions.
Training of Non-Pharmacists

• Nurses, pharmacy assistants, community health workers – commonly used in medication dispensing

• Training should include:
  – basic knowledge of ARV – how to take the meds, needs for adherence, and common side effects.

• They may play key roles as adherence counselors and peer counselors, and should be relied upon as much as possible where no pharmacists are available
Keeping Up with Knowledge

- Case discussions with colleagues
- Internal teaching opportunities - drug updates, journal clubs, case conferences
- Newsletters, journal articles, textbooks
- Internet resources - conference updates, electronic text, HIV alerts
- Lectures
- Teleconferencing
- Networking with other pharmacists (via listserv, etc)
Summary

- Training of pharmacists to meet the challenges of ARV scale up can be a daunting task, esp. in the very resource poor setting
- Government, pharmacy organizations, academic institutions, and clinics should recognize the key roles pharmacists can play and invest on incentives for their training
- Outside sources can provide initial training
- Identifying local trainers and leaders is the key to providing further training to others entering into the healthcare system
Pharmacists - Key to ARV Rollout Success