Strategies to Improve Medicine Use – Drug and Therapeutics Committees

Review of the Cesarean-section Antibiotic Prophylaxis Program in Jordan and Workshop on Rational Medicine Use and Infection Control

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Outline

• Introduction
• Why DTCs are important
• Role and Functions of the DTC
• DTC structure and organization and its relationship to other hospital committees
• Guiding principles
• Factors critical to success
• Monitoring DTC performance
• Summary
Introduction: Why DTCs Are Important

• ICIUM 1997, 2004 and 2011 highly recommends the establishment of DTCs to improve medicine use and contain AMR.

• WHO Global Strategies to Contain AMR recommend that DTCs be established at hospitals to help contain and control AMR

Source: DTC in Africa and Asia: From Training to Implementation. SPS/WHO. International Conference on Improving Use of Medicines (ICIUM) Nov 2011
Why Are DTCs Important—WHO Key Recommendations for Improving Medicine Use

- National body to coordinate policies on medicine use
- Evidence-based clinical guidelines for training, supervision, and supporting decision-making about medicines
- Drug and therapeutics committee
- Problem-based training in pharmacotherapy
- Continuing medical education as a requirement for licensure
- Independent and unbiased information about medicines
- Public education about medicines
- Elimination of financial incentives that lead to improper prescribing, such as prescribers selling medicines for profit to supplement their income
- Regulations to ensure that promotional activities meet ethical criteria
- Adequate funding to ensure availability of medicines and health personnel

Introduction: Why DTCs Are Important

- Medicines can save lives and improve quality of life but are expensive (30–40% budget), widely misused, and can be dangerous (adverse drug reactions [ADRs] are common)
- Important benefits of a DTC—
  - Selection of effective, safe, high quality, cost-effective medicines for the formulary
  - Monitoring and identification of medicine use problems
  - Improved medicines use, including antimicrobial use
  - Improved quality of patient care and health outcomes
  - Management of antimicrobial resistance
  - Increased staff and patient knowledge
  - Management of ADRs and medication errors
  - Improved medicine procurement and inventory management
  - Management of pharmaceutical expenditures
30–60% of PHC Patients Receive Antibiotics (Perhaps twice what is clinically needed)

% of PHC patients receiving antibiotics

Treatment of ARI by Prescriber Type

Source: WHO/PSM Database on Medicines Use in Primary Health Care in Developing Countries, 2007.
5–50% of PHC Patients Receive Injections
(up to 90% may be medically unnecessary)

15 billion injections per year globally
Half are with unsterilized needle/syringe
2.3-4.7 million infections of hepatitis B/C and up to 160,000 infections of HIV per year associated with injections

Sources: Adapted from (1) MDS 1997; (2) Simonsen L et al, WHO Bulletin, 1999; (3) Hutin Y et al, BMJ, 2003
ADRs

- Significant cause of morbidity and mortality in United States
- Estimated costs in U.S. from medicine-related morbidity and mortality 30 million to 130 billion US dollars
- 4–6% of hospitalizations in the United States and Australia
- Most common and expensive events include bleeding, cardiac arrhythmia, confusion, diarrhea, fever, hypotension, itching, vomiting, rash, renal failure

Role of the DTC

• The committee that evaluates the clinical use of medicines, develops policies for managing medicine use and administration, and manages the formulary system
Drug and Therapeutics Committees (DTCs)—Improves the Use of Medicines and Preserves Effectiveness of Antimicrobials

**Identification of Medicine Use Problems**
- Indicator studies
- ABC analysis

**Manage formulary or essential medicines lists**
- Develop and implement
- Monitor compliance

**Collaborations with hospital departments**
- Infection control
- Microbiology
- Pharmacy
- Hospital management

**Medicine Use Interventions**
- Treatment guidelines
- Medicine use evaluation
- Support for pharmacovigilance

**Training/Education**
- In-service
- Pre-service
- Patients
Functions of a DTC

• To promote better quality of care and more rational use of medicines through—
  • Advising medical, pharmacy, and administrative staff
  • Developing pharmaceutical policies and procedures
  • Evaluating and selecting formulary medicines
  • Identifying medicine use problems
  • Promoting interventions to improve medicine use
  • Managing ADRs and medication errors
DTC Advisory Functions

- Advise medical, administrative, and pharmacy departments
- Advise and support other hospital organizations on medicine-related issues
- Participate in hospital committees and departments on all matters concerning medicines
Evaluating and Selecting Medicines for the Formulary

- **Explicit evaluation criteria**
  - Efficacy, relative efficacy, effectiveness
  - Safety, quality, cost

- **Consistent decision-making**
  - Evidence-based
  - Local context
  - Transparency

- **Evaluation process uses current literature**
  - Primary sources (especially randomized controlled trials)
  - Secondary sources (bulletins and reviews)
  - Reliable and current tertiary sources (textbooks)
Identifying Medicine Use Problems (1)

• Pharmaceutical procurement and availability
• Pharmaceutical distribution
• Medicine prescribing
• Administration and use
• ADR reports
• Medication error reports
• Antimicrobial resistance surveillance reports
Identifying Medicine Use Problems (2)
(Sources of data and types of analysis)

- **Aggregate consumption data**—
  - From records of procurement records, pharmacy stock, patient records
  - ABC, VEN, DDD analysis
  - ADR reports
  - Medication error reports
  - Antimicrobial resistance surveillance reports

- **Health facility indicators and hospital antimicrobial indicators**—indicate general trends in prescribing

- **Drug use evaluation (DUE)**—
  - Indicates whether specific diseases are being treated with the correct medicine or whether specific medicines are being given for the correct indications
  - Includes continuous monitoring and feedback
Promoting Interventions to Improve Pharmaceutical Use

• Educational programs
  • Pharmaceutical bulletins and newsletters
  • In-service education

• Managerial programs
  • Standard treatment guidelines (STGs)
  • DUE
  • Clinical pharmacy programs
  • Structured order forms, automatic stop orders

• Regulatory programs
  • Pharmaceutical registration
  • Professional licensing
  • Licensing of outlets
Managing ADRS and Medication Errors

• The DTC should have a plan to—
  • Monitor
  • Assess
  • Report
  • Correct identified problems
  • Prevent ADRs
DTC Structure and Organization

- Membership from medical, pharmacy, administration, nursing, public health
- Liaison with Infection Control Committee and Antimicrobial Subcommittee
- Regular meetings and regular attendance with minutes
- Documented goals, terms of reference, policies, decisions
DTC—Structure and Organization (2)

Chairman
Clinical Director or other appointed physician

Executive Secretary,
Director of Pharmacy

Physician Members
- Surgeon
- OB/Gyn
- Internal Medicine/Family Practice
- Infectious Diseases

Pharmacy Members
- Drug Information Specialist
- Pharmacologist
- Recording Secretary

Nursing Members
- Director of Nursing

Administration
- Administrative Officer or other appointee

Public Health
- Physician or Nursing Representative
Liaison Between Committees

- Medical staff executive committee
- Medical Service
- Pharmacy
- Drug and Therapeutics Committee
- Antimicrobial Subcommittee
- Infection Control Committee

- Liaison Between Committees
DTCs—Guiding Principles

- **Transparent and unbiased decision making**
  - Explicit criteria and process
  - Documentation
  - Absence of conflict of interest including pharmaceutical manufacturers and suppliers
  - Development and enforcement of a strict ethics policy for all activities of the committee

- **Objectivity**—Evidence-based approach and levels of evidence

- **Consistency**—Uniformity between formulary and STGs and between regional and national health care programs

- **Impact orientation**—Indicators of process, impact, and outcome
Factors Critical to Success

- Establish clear goals and purpose
- Obtain wide representation on the committee—prescribers, nurses, pharmacists, and administration; obtain motivated, respected, and dynamic chairperson
- Permit no relation between committee and pharmaceutical manufacturers or suppliers
- Communicate all DTC information, policies, procedures, recommendations, and actions to staff
- Obtain official status from the administration (local hospital director and regional health bureaus) with strong management support
- Develop medical and pharmacy departments and local professional schools support
- Ensure contextual incentives
Monitoring DTC Performance: Process Indicators

• Is there a DTC document that indicates its terms of reference including goals, objectives, functions, and membership?
• Is there a DTC budget?
• What percentage of DTC members attend more than half of meetings?
• How many DTC meetings are held per year?
• Are there documented criteria for addition and deletion to the formulary?

• Have STGs been developed, adapted, adopted, and implemented?
• How many education programs were presented in the last year?
• How many intervention studies to improve medicine use been conducted?
• How many DUEs have been undertaken?
• Is there any documented policy for controlling access of pharmaceutical representatives and promotional literature to hospital staff?
Monitoring DTC Performance—Impact and Outcome Indicators

- **Medicine selection**
  - Number of medicines in the hospital formulary
  - % prescribed drugs belonging to the hospital formulary
  - Number of antimicrobials in the formulary

- **Prescribing quality**
  - % of patients treated in accordance with STGs
  - % of pharmaceutical treatments meeting agreed criteria of DUE

- **Drug safety**
  - Mortality and morbidity rates per annum due to adverse consequences of medicine use (ADRs and medication errors)

- **Financial sustainability**
  - Cost of DTC activities versus the money saved through improving drug use and decreasing wastage
SPS DTC Capacity Building Activities

- USAID-supported SPS (and predecessor RPM Plus) and WHO have developed training materials and conducted training programs to implement DTCs.
- To facilitate implementation, SPS has provided follow-up technical assistance through a long-distance (desktop) system and direct SPS country-level support.
- Since 2001, 945 physicians, nurses, pharmacists, and other health professionals from 70 countries have been trained.
Summary of Accomplishments as a Result of DTC Courses, DTC Implementation and Follow-up Technical Assistance (2001-2010)

- Training programs on RMU: 17 (# Activities), 12 (# Countries)
- ADR systems revised or developed: 12 (# Activities), 12 (# Countries)
- Drug use studies (including ABC/VEN): 35 (# Activities), 17 (# Countries)
- Drug use evaluation: 21 (# Activities), 11 (# Countries)
- STGs developed and implemented: 23 (# Activities), 13 (# Countries)
- Formulary management: 49 (# Activities), 14 (# Countries)
- DTC created or restructured: 209 (# Activities), 21 (# Countries)
- DTC Courses (by participants): 57 (# Activities), 22 (# Countries)

# Activities # Countries
Implications for Implementing DTCs to Improve Use of Medicines (2) – ICIUM 2011 Presentation

• There is a compelling need to rationalize medicine use in health systems to improve medicine use, contain antimicrobial resistance, and to reduce health care costs.

• DTCs are a proven vehicle that supports this process.

• WHO, international health care organizations, Ministries of Health, accreditation agencies, hospitals, clinics, and donors worldwide must continue to recommend, promote, and support the establishment of DTCs at the primary health and district/tertiary hospital levels.

Source: DTC in Africa and Asia: From Training to Implementation. SPS/WHO. International Conference on Improving Use of Medicines, Nov 2011
Summary

• The DTC evaluates the clinical use of medicines, develops the policies for managing medicine use, and manages the formulary system—these actions will result in improved patient care.
• This health facility based committee can monitor medicine use directly at the health facility level, identify medicine use problems, and institute interventions to improve medicine use.