Strategies to Improve the Use of Medicines—Standard Treatment Guidelines

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
• Consequences of Irrational Medicine Use
• Advantages and disadvantages of Standard Treatment Guidelines
• Establishing the guideline
• Implementing the guideline
• Summary
Introduction

• Treatment of diseases may have many different approaches
• Many practitioners will not remember the best method of treatment
• Applying the most effective treatment benefits both the patient and the health care system
• Formulary management will have only limited impact if the medicines are used incorrectly
Consequences of Irrational Use of Medicines (1)

• **Waste of resources**
  
  Up to half the value of all medicines may be wasted through inappropriate use

• **Morbidity due to adverse drug reactions (ADRs)**
  
  In the United States, ADRs cost 30–130 billion U.S. dollars per year and causes significant morbidity and mortality
Consequences of Irrational Use of Medicines (2)

- **Antimicrobial resistance through misuse and overuse**
  - 2–4% multidrug resistance in TB, 12–55% resistance to penicillin in *N. Gonorrhoea* and *S. Pneumonia*, 10–90% resistance to ampicillin or co-trimoxazole in *Shigella*

- **Increased disease due to dirty or unnecessary injections**
  - 2.3–4.7 million hepatitis B and C infections and up to 160,000 HIV infections per year
Indicator Studies of Guideline, EML and Medicines Availability in Developing and Transitional Countries

Irrational Treatment of ARI in Developing and Transitional Countries

Irrational Treatment of ARI in Developing and Transitional Countries (2)

Irrational Prescribing of Antibiotics in Developing and Transitional Countries

Prescribing Practices in Developing and Transitional Countries—Adherence to Clinical Guidelines

Interventions to Improve Medicine Use

- Effective interventions to improve use of medicines are generally multi-faceted
  - Provider and consumer education with supervision
  - Peer review and self monitoring
  - Community case management
  - Essential Medicines Program

- Printed materials alone have little effect

- The use of guidelines to be effective need to be accompanied by reminders, educational outreach and feedback

Interventions to Improve Medicine Use (2)

• Less than half of all countries are implementing many of the basic policies needed to ensure appropriate use of medicines including
  • Regular monitoring of use
  • Regular updating of clinical guidelines
  • Providing a medicine information center
  • Proving a Medicine and Therapeutics committee in the hospital

Interventions to Improve Medicine Use—WHO KEY Recommendations (3)

- 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

Strategies to Improve Medicine Use in Developing and Transitional Countries

Treatment Guidelines—Advantages for Health Care Providers (1)

- Provides standardized guidance to practitioners
- Promotes high quality of care by directing practitioners to the most appropriate medicines for specific conditions
- Encourages the best quality of care because patients are receiving optimal therapy
- Utilizes only formulary or essential medicines, so the health care system needs to provide only the medicines in the STGs
- Provides assistance to all practitioners, especially to those with lower skill levels
- Enables providers to concentrate on making the correct diagnosis
Advantages for Health Care Officials

• Provides a basis for evaluating quality of care provided by health care professionals
• Provides effective therapy in terms of quality
• Provides a system for controlling costs
• Provides information for practitioners to give to patients concerning the institution’s standards of care
• Serves to integrate special programs (diarrhea disease control, TB) at the primary health care center with a single set of guidelines
Advantages for Supply Management

• Utilizes only formulary or essential medicines, so the health care system needs to provide only medicines in the STGs
• Provides information for forecasting and ordering
• Provides information for purchase of prepackaged medicines
Advantages for Patients

• Patients receive optimal pharmaceutical therapy
• Enables consistent and predictable treatment from all levels of providers and at all locations
• Allows for improved availability of medicines because of consistent and known usage patterns
• Helps provide good outcomes because patients are receiving the best treatment regimen available
• Lowers cost
Disadvantages

• Inaccurate guidelines will provide the wrong information. Often guidelines are based on existing practices rather than evidenced-based medicine.

• Guideline development and maintenance takes much time and effort.

• STGs may give false sense of security and discourage ongoing critical thinking.
Establishing the Guideline (1)

- Establish an STG committee
- Develop comprehensive plan for development
  - Select format
  - Recruit contributors, writers, reviewers
- Identify diseases that the STG will cover
Establishing the Guideline (2)

• Determine the appropriate treatment options
  • Use fewest medicines necessary
  • Choose cost-effective treatment
  • Use formulary medicines
  • List first- and, when appropriate, second- and third-line treatment options
  • Provide dose, duration, contraindications, side-effects
Establishing the Guideline (3)

- Determine what information should be included in the STG
  - Clinical condition
  - Diagnostic criteria and exclusions
  - Treatment objectives
  - Nonpharmaceutical treatment
  - Medicines of choice
  - Important prescribing information
  - Referral criteria
  - Patient education information
  - What to do when clinical response is poor
Establishing the Guideline (4)

• Draft the STG for comments, external review, and pilot testing
• Publish and disseminate
  • Hold an official launch
  • Train users
  • Monitor and evaluate
• Revise and update
Establishing the Guideline (5)

Key features of a successful STG manual—

- Simplicity
- Credibility
- Same standards for all levels
- Pharmaceutical supply based on standards
- Introduced in preservice training
- Dynamic (regular updates)
- Provided as a durable pocket manual
Establishing the Guideline (6)

- Important considerations—
  - Create from evidence-based sources
  - Choose cost-effective treatments
  - Use only approved formulary medicines
  - Involve respected clinicians and specialists
  - Consider the patient perspective
Implementing the Guideline

- Printed reference materials—STG manual, posters, training materials
- Official launch—involve Ministry of Health officials
- Initial training
  - Vital concept in implementing guidelines
  - Provide training in advance of actual start date
- Reinforcement training
- Monitor use of the guidelines and outcomes
- Supervision
Randomized Controlled Trial in Uganda—
Effects of Treatment Guidelines, Training, and Supervision on the Percentage of Prescriptions Conforming to STGs*

<table>
<thead>
<tr>
<th>Randomised group</th>
<th>No. health facilities</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Change</th>
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<tbody>
<tr>
<td>Control group</td>
<td>42</td>
<td>24.8%</td>
<td>29.9%</td>
<td>+5.1%</td>
</tr>
<tr>
<td>Dissemination of guidelines</td>
<td>42</td>
<td>24.8%</td>
<td>32.3%</td>
<td>+7.5%</td>
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<tr>
<td>Guidelines + on-site training</td>
<td>29</td>
<td>24.0%</td>
<td>52.0%</td>
<td>+28.0%</td>
</tr>
<tr>
<td>Guidelines + on-site training + 4 supervisory visits</td>
<td>14</td>
<td>21.4%</td>
<td>55.2%</td>
<td>+33.8%</td>
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</table>

Combined Intervention Strategy
Prescribing for Acute Diarrhea in Mexico City

Study Physicians
Control Physicians

<table>
<thead>
<tr>
<th></th>
<th>Baseline Stage (n = 20)</th>
<th>After Workshop</th>
<th>After Peer Review (n = 20)</th>
<th>18-months Follow-up</th>
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</thead>
<tbody>
<tr>
<td>Study Physicians</td>
<td>25/102</td>
<td>42/82</td>
<td>37/52</td>
<td>79/115</td>
</tr>
<tr>
<td>Control Physicians</td>
<td>20/84</td>
<td>16/70</td>
<td>11/46</td>
<td>31/110</td>
</tr>
</tbody>
</table>

% cases treated in line with algorithm
Summary (1)

- STGs are a time-honored system to improve patient outcomes and to improve efficiency within the health care system
- Only evidence-based medicine concepts should be used in preparation of an STG
- STGs provide standardized guidance to practitioners
Summary (2)

• The most appropriate medicines for use in specific diseases are listed
• STGs produces the best quality of care
• Only formulary medicines are used so the health care system needs to provide only the medicines in the STG
• Providers can concentrate on diagnosis