Systematic Improvement of Prescribing

2003

Issues & Questions

■ Why/when should we desire to influence prescribing?
■ How could we influence (improve) prescribing?
■ Is improved prescribing sufficient to improve outcomes?

General Objective

Outline a systematic process for improving the quality of drug prescribing.

Why/When to Influence Prescribing

■ Many studies raise serious questions about prescribing appropriateness
■ Inappropriate prescribing is implicated as a possible cause in most studies of PDRM.
■ Drugs have been identified as a major contributor to the cost of health care.

Systematic Process for Improving the Quality of Drug Prescribing

■ 0. Criteria
■ 1. Data
■ 2. Assessment and Intervention
■ 3. Follow up

Prescribing Sub-System

1. PRESCRIBING DATA
2. PRESCRIBING EVALUATION
3. PRESCRIBING INFLUENCE (EDUCATION, FORMULARIES, ETC.)
Criteria

0. Establish criteria based on the purpose of prescribing, i.e., decide what constitutes “appropriate” prescribing. This preliminary step establishes the basis for prescribing assessment.

Assess and Intervene

2.1 Assess prescribing data against the criteria -- identify discrepancies.
2.2 Define a problem: search for root causes.
2.3 Understand (model) the prescribing process and the causes of quality variation
2.4.1 Assess alternative improvement "interventions," using the prescribing model
2.4.2 Select and implement interventions.

Collect Data

1. Carry out prescribing review: collect data that describe prescribing in ways that are relevant to the criteria.

Follow-Up

3. Follow up with continued prescribing review.
Purpose of Prescribing

- Criteria for prescribing appropriateness logically must depend on the function of prescribing in health care.
- The purpose of a prescription should be to initiate drug therapy, whenever possible for a definite \textit{therapeutic objective}, e.g., “remission of symptoms in three days, or return to clinic.”

Purpose of Medications Use

- The general purpose of medications use should be to improve the patient's health-related quality of life by curing, controlling, preventing or diagnosing disease or by controlling symptoms.
- This is logically consistent with the mandate claimed by all health professions.

Appropriate Prescribing: General Criteria (TESS)

Appropriate prescribing should be . . .
- Timely
- Equitable
- Specific
- Scientific

Appropriate Prescribing

- Timely
  - Provided when needed, continuous, adaptable to patient need
- Equitable
  - consistent with principles of distributive justice
  - efficient (cost-effective) with respect to outcomes
  - proportional to the likely benefit of therapy and the dangers of the disease

Appropriate Prescribing: Specific

- Appropriate for an individual’s specific needs and circumstances
  - Therapeutic objective
  - Practicality
  - Accessibility
  - Actual outcome (effectiveness and safety) for patient

Appropriate Prescribing: Scientific

- consistent with current scientific evidence and professional consensus about safety, effectiveness and efficiency;
- optimal with respect to the risks and benefits of alternative therapies.
Explicit Criteria

- Explicit prescribing criteria can be written and applied with little or no judgement, e.g., “long-acting benzodiazepines should be avoided in the elderly,”
- Can be scientifically sound, i.e., theoretically plausible and supported by epidemiological evidence.
- Expert consensus easier

Explicit Criteria (Cont’d.)

- Inexpensive to apply to large data sets.
- High measurement reliability, i.e., tend to yield similar or identical results from similar or identical populations, regardless of who applied them.
- May be difficult to use explicit criteria to address some criteria, e.g., reasoned

Example of Explicit Prescribing Criteria

- Beers used an expert consensus panel to develop a list of drugs that should be avoided in the elderly.
- Hanlon and his co-workers have developed this concept further in the Medication Appropriateness Index (MAI).

Implicit criteria

- Depend on professional judgement.
- Structured implicit criteria are explicit criteria that are intended to be applied with professional judgement.
- The usual method is expert review of entire records or of abstracts.
- Address complexity of care.

Implicit Criteria

- More expensive to use and less reliable, because the reviewer has to be able to find the necessary information in a record and apply judgement to it.
- May be more valid, i.e., may reflect general criteria and be more consistent with the real purpose of drug therapy.

Scope and Validity of Implicit Criteria

Medical record audit done by experts, using structured implicit criteria is widely accepted as the “gold standard” for judging many kinds of medical appropriateness.
Perspectives on Prescribing

- Patient-oriented: criteria address appropriateness of regimen relative to patient needs
- Drug-oriented: criteria address clinical research and “Drug of Choice” for indication.

Limitations of DUR/DUE

Retrospective drug use review (DUR) or drug use evaluation (DUE) addresses prescribing but not drug use as we have understood it. DUE is often biased toward few criteria (e.g., “scientific.”)

Examples

- See the Text for examples by
  - Beers
  - Ray
  - Lindley, et al

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We Need to Understand the Prescribing Process

- Many prescribing improvement interventions have been shown to be ineffective.
- If is necessary to understand the prescribing and medications use process before you can change it.

Prescribing Model

- Clinical Impression → Therapeutic Objective → Evoked Set Of Therapeutic Alternatives
- BELIEFS & VALUES
- DECISION RULE
- NORMS
- ROUTINES (HABITS)
- PRESCRIBING INTENTION (Therapeutic Plan)
- “Reality” → PRESCRIBING
SUMMARY

- Most evidence suggests that prescribing often is the result of decision making
  - In particular, difficult or unfamiliar prescribing problems are reasoned.
- Some prescribing may result from norm, policy or habit
  - Perhaps the most common and familiar problems are “habitual.”

How Can We Change Inappropriate Prescribing?

- Prescribing Restrictions
  - caps, restrictive formularies
- Educational Programs
  - academic detailing
- Consulting and Cooperative Practice
  - “prospective DUE,” patient-oriented DUE, cooperation

Managed Care Outcomes Project

- Six MCO’s in six states, 13,000 patients, 1 year, prospective. Analysis by correlation (multiple regression)
- Formulary restrictiveness was associated with higher rates of ER visits & hospital admissions for all diagnoses but Otitis; associated with higher drug cost, Rx count, and office visits for some diseases.
- Range of effect - the most restrictive had twice the utilization of the least restrictive.

Horn et al 1996

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Patient-Specific Asthma DUE

- Patients using $-agonists excessively (>2/mo.)
- Information sent out included:
  - Therapeutic guidelines
  - Specific drug use info by patient
  - Response sheet (checklist)
- Information sent to physician only or to physician + pharmacist (random)

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Expenditures ($/mo.) Associated with Patient-Specific DUE Intervention Letters to Physicians and Pharmacists

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<th>After($)</th>
<th>B-A($)</th>
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<tr>
<td>Asthma Drugs</td>
<td>158 (±94)</td>
<td>139 (±124)</td>
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<tr>
<td>Total Exp.</td>
<td>239 (±354)</td>
<td>362 (±815)</td>
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<tr>
<td>Asthma Drugs</td>
<td>153 (±96)</td>
<td>132 (±91)</td>
<td>21*</td>
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<tr>
<td>Total Exp.</td>
<td>201 (±138)</td>
<td>171 (±127)</td>
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Sleeth et al AJHP 1997;54:2197-2200

**Summary**

- Prescribing interventions should match the process, otherwise they are likely to fail, e.g.,
  - attempt to block a reasoned decision
  - force behavior against norm
  - educate someone who is not thinking

**Conclusion**

- Educational methods are effective, especially if “one on one”
- Prescribing restrictions often have “unintended consequences” of increased morbidity and increased total cost.
- Consultation and collaboration (systems changes) have the most persuasive evidence (e.g., Danish TOM study)