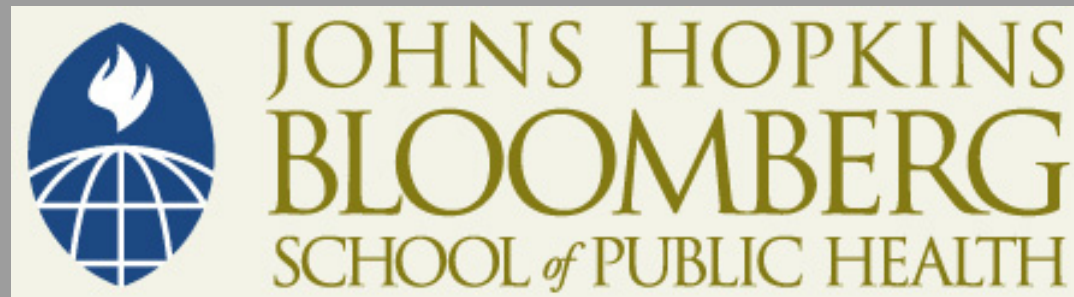


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JOHNS HOPKINS  
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SCHOOL *of* PUBLIC HEALTH

## *Adverse Events in the Outpatient Setting*

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## *Little Research on AEs Outside Hospital Settings*

“Little if any research has focused on errors or adverse events occurring outside of hospital settings, for example, in ambulatory care clinics, surgicenters, office practices, home health, or care administered by patients, their families, and friends at home.”

— *IOM. (1999). To Err Is Human.*

## *The Outpatient Center*

- Most care in ambulatory settings
- More and more procedures in non-hospital settings
- Less and less consistently regulated

# *Outpatient Surgery*

- 400,000 in 1984, 3 million in 2000
- More than half of all surgery
- Technological advances
  - Laparoscopy, minimally invasive
- Costs lower
  - For providers
  - For patients (no facility fees)

# *Cosmetic Surgery*

- Majority of liposuction by non-plastic surgeons
- Tumescent liposuction under general anesthesia with SC injection of diluted lidocaine + epi
- Complications and deaths related to high doses, anesthesia

# *Sources of Risk*

- Caregivers
  - Relative isolation
  - Lack of peer review
  - Insufficient training/experience
- Team
  - May not include anesthesiologist
- Facilities
  - Inadequate equipment, supplies, especially in crisis
  - Equipment maintenance
- Less regulation and reporting, fewer standards

## *New Jersey*

- Accreditation of facilities
- Standards for monitoring, use of technology, and equipment purchase and maintenance
- General anesthesia only by anesthesiologist admitting to nearby hospital or supervised nurse anesthetist
- Mandatory reporting



## *Nature of Outpatient AEs*

- One year voluntary reporting (N = 100 incidents)
  - Medication 47%
  - Lab or X-rays 22%
  - Office administration 21%
  - Communication processes 10%

# Ambulatory Chemo

- Prospective cohort of one pediatric and two adult chemo infusion units
- 10,112 medication orders from 1,606 patients
  - 1,380 adults, 226 peds
- Error rate 3% (306)
  - 2% potentially harmful (82% adults, 60% peds)
  - One-third of these potentially serious
  - 45% intercepted by nurses, pharmacists

## 181 Closed Claims of Missed or Delayed Diagnoses

- 59% diagnostic errors (cancer 59%)
  - Failure to order appropriate test
  - Failure to create follow-up plan
  - Failure to obtain adequate history or exam
  - Incorrect interpretation of results
- Contributing factors (median 3)
  - Judgment, vigilance, memory
  - Patient related (46%)
  - Handoffs

# Patient Survey of Adverse Drug Events (ADEs)

- Prospective survey of 102 outpatients getting more than one prescription in past month
- Two hospital-based and two community-based adult primary care practices
  - 661 patients (RR 55%)
  - 25% had ADEs (27 per 100 patients)
  - 13% serious, 28% ameliorable, 11% preventable
- Of 51 ameliorable events...
  - 63% attributed to physician's failure to respond to med-related symptoms
  - 37% attributed to patient's failure to inform the physician of the symptoms
- Medication classes most frequently involved
  - SSRIs, beta blockers, ACE-Is, NSAIDS 8-10%
- On multivariate analysis, only the number of medications taken was significantly associated with adverse events

# *Patient-Identified Causes of Outpatient ADEs*

- Medication non-adherence
- Prescriber-patient miscommunication
- Patient medication errors
- Failure to read label/insert
- Polypharmacy
- Patient characteristics
- Pharmacist-patient miscommunication
- Self-medication

# *Patient-Identified Causes of Outpatient ADEs*

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## Premise

- A physician well trained in care of severely ill could easily translate skills into excellent care of patients where patients are less acutely ill and the pace slower
- But—course of health different, many symptoms resolve, prevention important, patients more proactive

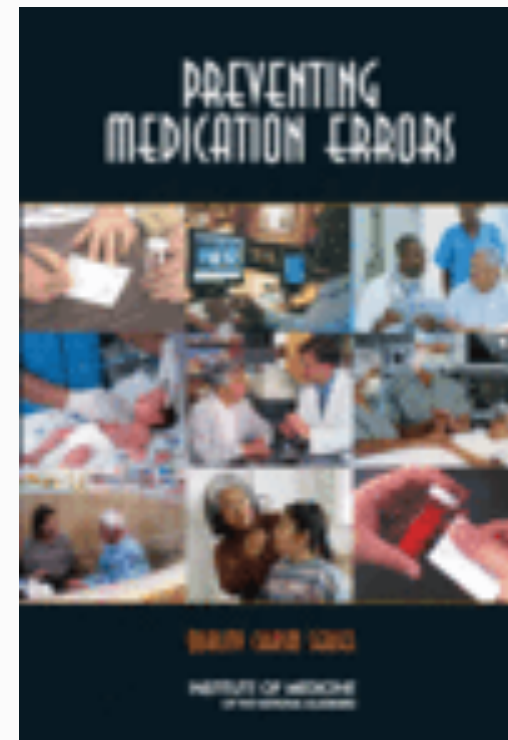
# Differences

- Nature of errors
  - Less common—medication administration errors
  - More common—missed diagnoses
- Economies of scale
  - IT less feasible
  - Scrutiny less intense
- Patient-provider relationship
  - Adherence very important
  - Activation key



# *Preventing Medication Errors*

*Preventing Medication Errors*  
— IOM (2006)



## *Improved Provider-Patient Partnership Is Vital*

- Recommendation 1—specific measures should be instituted to strengthen patients' capacities for sound medication self-management
  - Patients (or family) should maintain an active list of all medications
  - Providers should take definitive action to educate patients (or family) about the safe and effective use of medications
  - Consultation on their medications should be available to patients at key points along the medication use process

## *Improved Provider-Patient Partnership Is Vital*

- Consumers should be able to obtain quality information about medications not only from their provider, but also from the pharmacy, Internet resources, and community-based resources
  - However, current materials are inadequately designed for consumers to read, comprehend, and act on

## *Advantages*

- Consistent collegial relationships among caregivers in offices may make communication and teamwork easier
- Longitudinal relationships make collaboration and patient engagement easier
- Economies of scale need to be developed for implementing interventions to improve safety, especially in small office-based practices