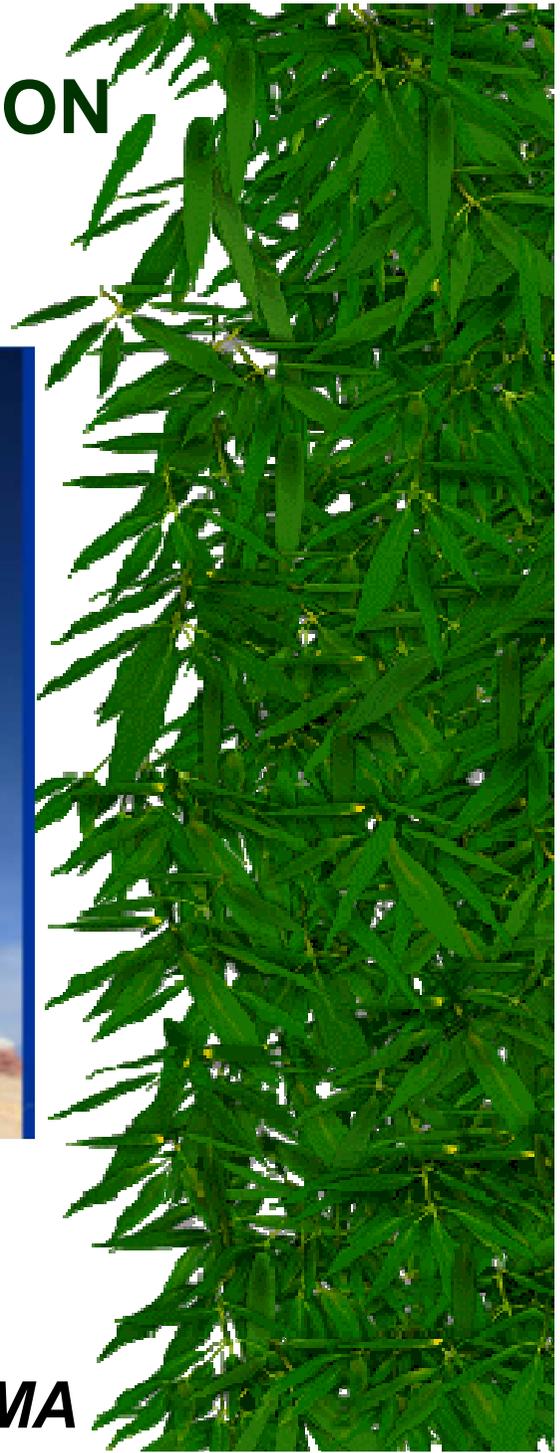


BEST EVIDENCE MEDICAL EDUCATION IN GERIATRIC MEDICINE



SUZAN ABOU-RAYA, MD
Faculty of Medicine,
University of Alexandria

Fellow, Harvard Medical School, Boston, MA

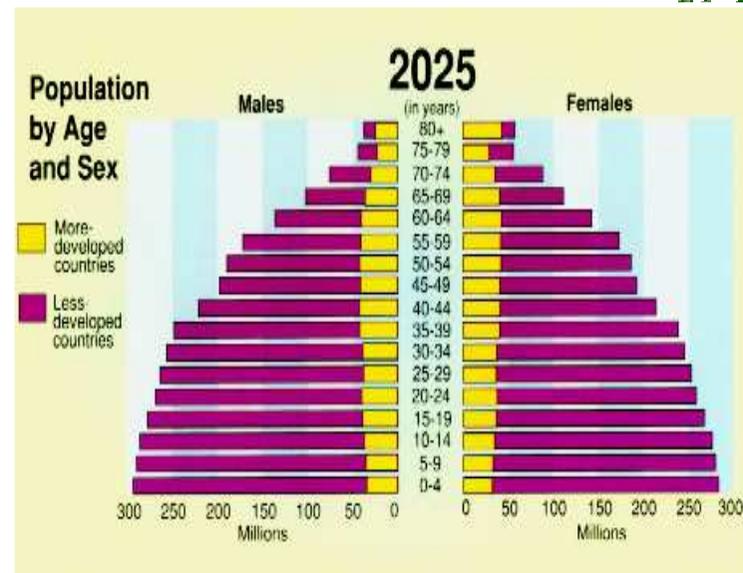
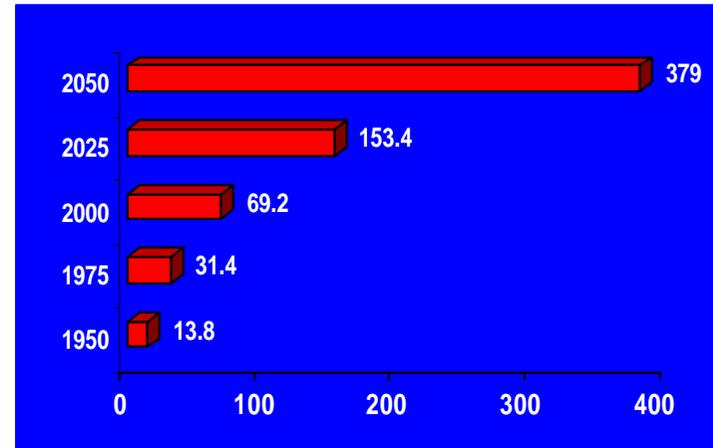
"Ageing is like climbing a mountain. You get out of breath but you have a magnificent view"

(Ingmar Bergman)



CONVERGING TRENDS

- ★ Recent medical advancements → the rapid “greying” of the developing world’s population.
- ★ Currently, older people ≈ 7.4% of world population and are increasing 2x as fast as the general population.
- ★ ↑ life expectancy in the developing world has ↑ from 45 yrs in 1950’s to 64 in 1995 → 72 in 2020.
- ★ In 1995, 75% of the world’s elderly population were living in the developing world.



- ★ Population demographics are shifting towards an increasing age.
- ★ Thus, comprehensive EBM education in Geriatric Medicine is vital.

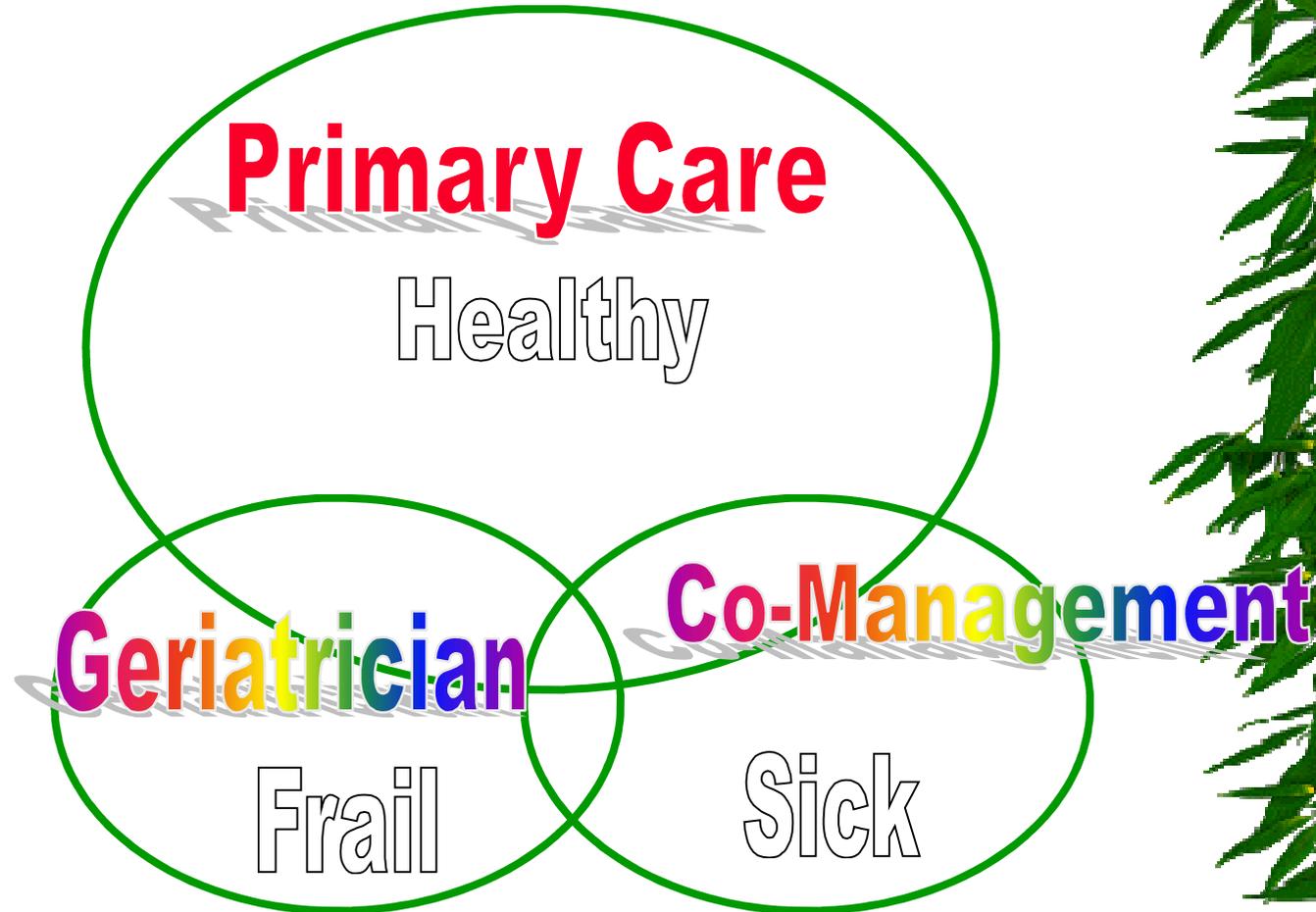




*Geriatric Medicine is
an Integrated Medical
Practice*



Caring for Elderly Subgroups



The "Geriatric Imperative"

**Increasing
Elderly
Population**

**Vast Unmet
Healthcare
Needs**





***WHY DO THE ELDERLY
REPRESENT A
THERAPEUTIC
CHALLENGE?***



The Geriatric therapeutic challenges

- ★ Impaired physiological reserve in older patients- “homeostenosis”.
- ★ Multiple disease and multiple drug use.
- ★ Non-specific or cryptic presentation.
- ★ Rapid deterioration if untreated(age-associated loss of adaptability).
- ★ High incidence of complications(of disease and treatment).



Goals of Care for Older Adults

Health-Related Quality of Life

- **SUCCESSFUL AGING**
- *Prevent or reduce disability, maximize function*
- **Manage complexity**
- **Evidence-based treatment of disease**
- **Anticipate and prevent clinical catastrophes**
- **Appropriate long-term care**
- **Palliative care**
- **Individualized care**
- **Care guided by patient's preferences**

Quality of Healthcare

Physician Performance - Hospital Care

“Good” performance is approximately 100%

- **Flu vaccine, screened or given** **27% (18)**
- **Pneumonia vaccine, screened or given** **24% (13)**
- **Antibiotics within 8 hours for pneumonia** **87% (85)**
- **Blood culture before antibiotics** **82% (84)**
- **Fibrillators discharged on warfarin** **57% (54)**
- **Antithrombotic for stroke at discharge** **84% (82)**
- **No sublingual nifedipine for stroke** **99% (95)**

Quality of Healthcare

Physician Performance – Cardiac Care

(“Good” performance is approximately 100%)

- ASA within 24 hours 85% (82)
- ASA at discharge 86% (84)
- Beta-blocker within 24 hours 69% (63)
- Beta-blocker at discharge 79% (72)
- ACEI at discharge 74% (70)
- Counseled to quit smoking 43% (40)
- In CHF, measured ejection fraction 70% (66)
- ACEI at discharge if EF < 40% 68% (72)

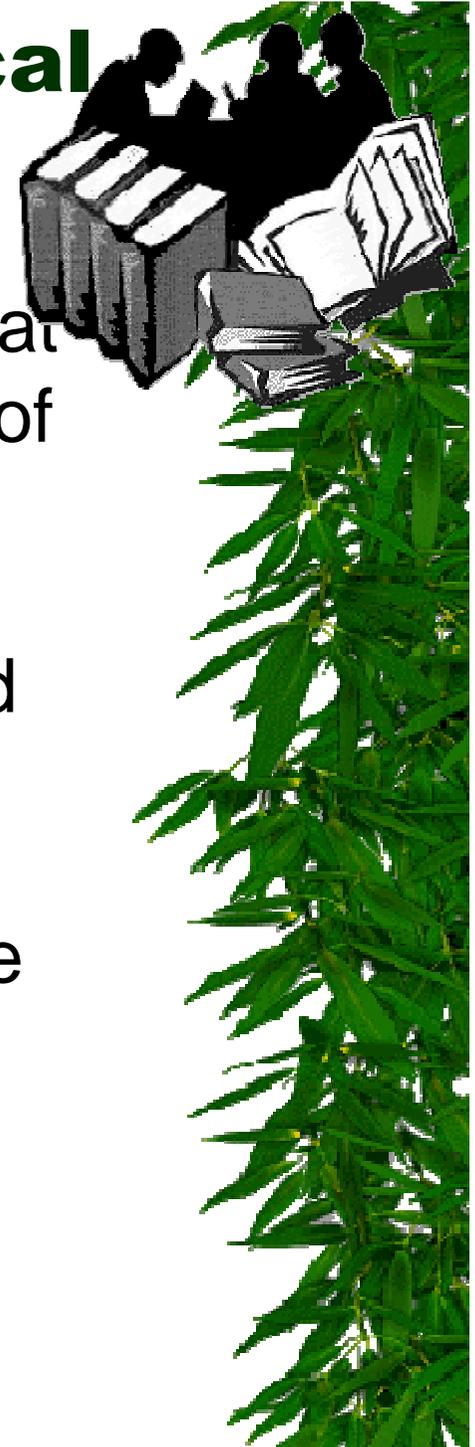
Quality of Healthcare

Physician Performance - Anywhere

“Good” performance is approximately 100%

- Flu vaccination annually 72 % (66)**
- Pneumovax ever 65% (55)**
- Mammogram in last 2 years 60% (56)**
- Diabetes Care**
 - + Eye exam in past year 70% (69)**
 - + Hemoglobin A_{1c} annually 60% (55)**
 - + Lipid profile measurement for diabetics 74% (58)**

Why the need to change Medical Education ?



- The implementation of EBM has had a great impact on the teaching, practice and study of medicine.
- There is a need to move from traditional opinion-based education to evidence-based education.
- Massive transformation in medical education → quantum leap from trying to be “good teachers” to making the learning process more readily available to students.
- This is a time of great change in both undergraduate and post -graduate medical education.

Why the need for change in medical education ??



- ★ What students now need to know is directly related to the **information explosion** which is evident in every field of study.
- ★ The goalposts have changed from *teaching facts* to helping students to learn how to **find relevant information** and how **to assess it** and how **to organize** disparate information into a cohesive whole.

Major pressures on healthcare systems that lead to the demand for an evidence-based approach to practice

Increased innovation

Greater knowledge

Population changes

Increasing workload

Increasing spending

Patient expectation

New technologies

New treatments, diagnostics, and rationales

Aging population, social changes

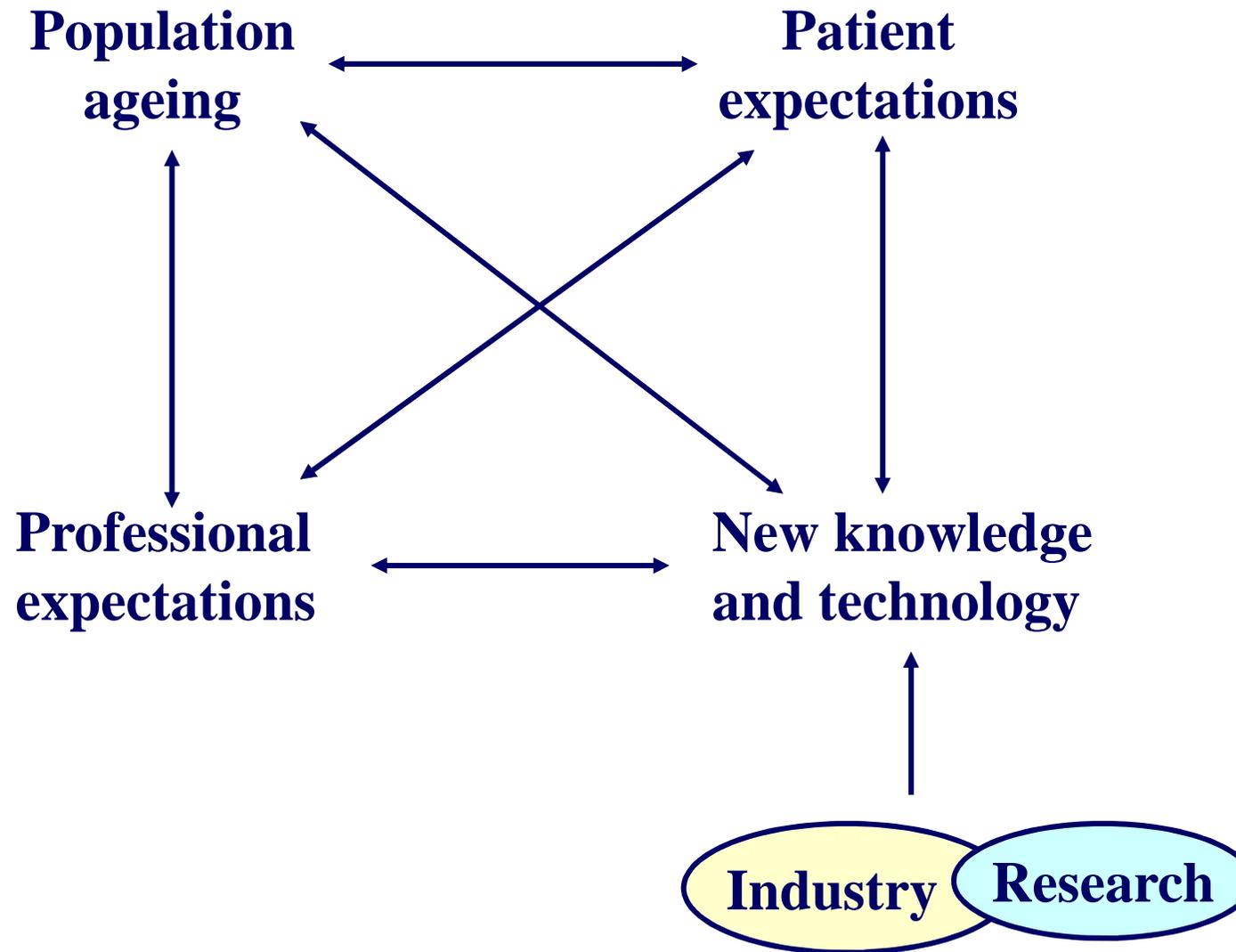
More patient visits, more complex testing

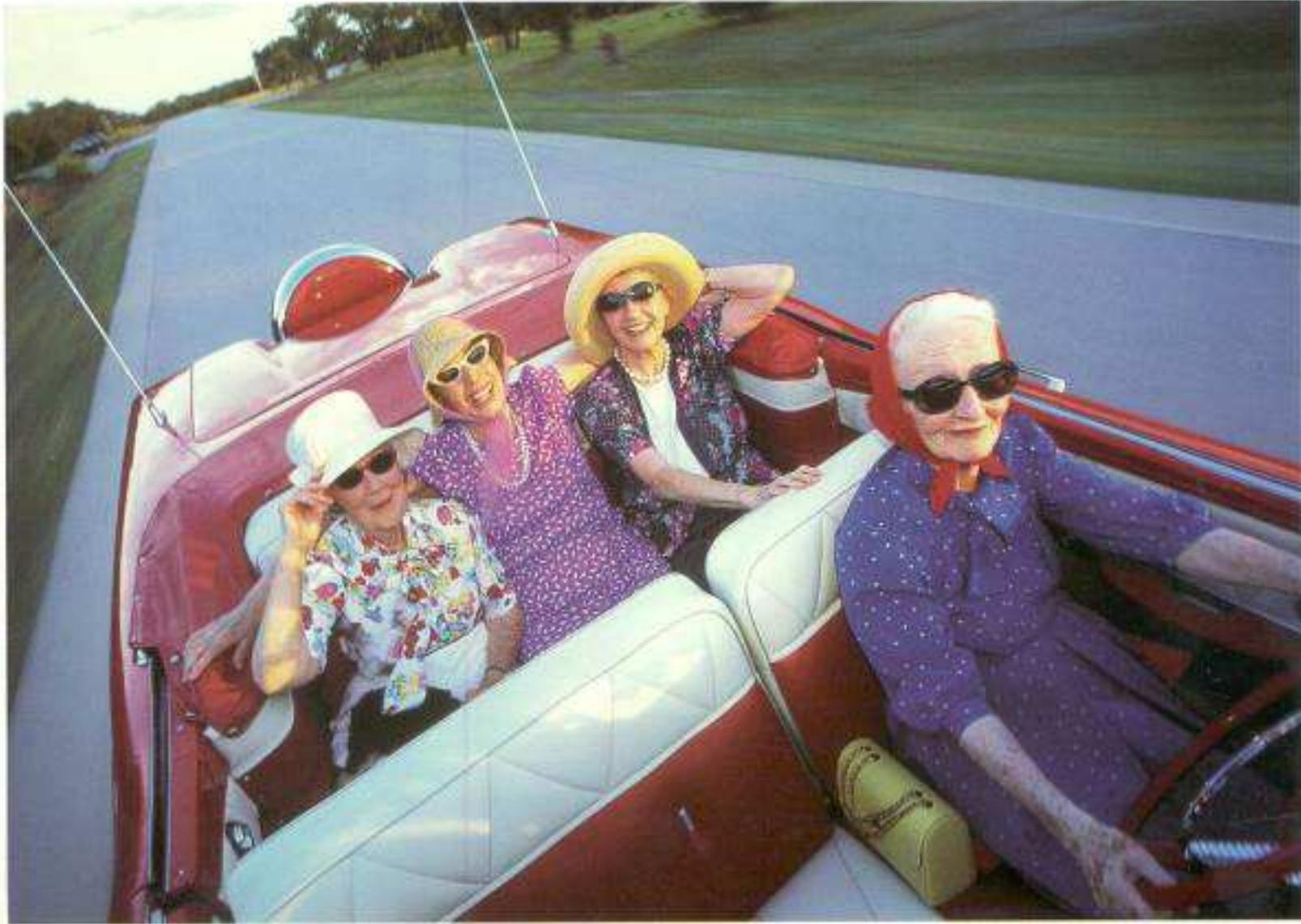
Salary costs, drug costs

Greater knowledge (e.g., from the Internet), greater litigation



Why we need Evidence Based Medicine AND Best Evidence Medical Education





What is Best Evidence Medical Education (BEME) ?

- ★ BEME is the implementation by teachers in their practice, of methods and approaches to the education of physicians/physicians-in-training based on the best evidence available.



What is problem-based learning?

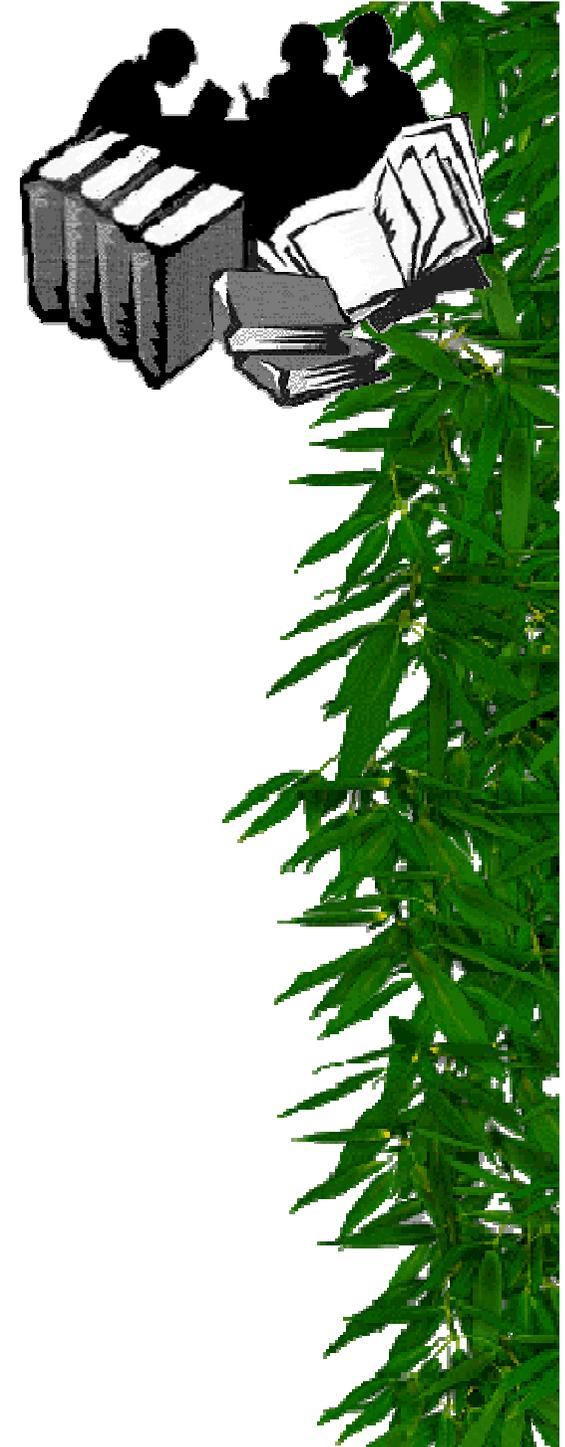
“A learning method based on the principle of using problems as a starting point for the acquisition and integration of new knowledge.”

H.S. Barrows 1982



What is required from a treating geriatrician through traditional teaching:

- **Patient-Physician Relationship**
- **Clinical Skills**
 - 1) **History taking**
 - 2) **Physical examination**
 - 3) **Laboratory tests**
 - 4) **Imaging techniques**
- **Diagnosis of disease**



What is required from a geriatrician through EBP:

- **Caring for the patient:**
 - 1) **Assessing the outcome of treatments**
 - 2) **Medical therapy**
 - 3) **Specific care for gender and age groups**
 - 4) **Iatrogenic disorders**
 - 5) **Informed consent**
 - 6) **Accountability**
 - 7) **Practice guidelines**
 - 8) **Cost-effectiveness in medical care**
 - 9) **Research and teaching**

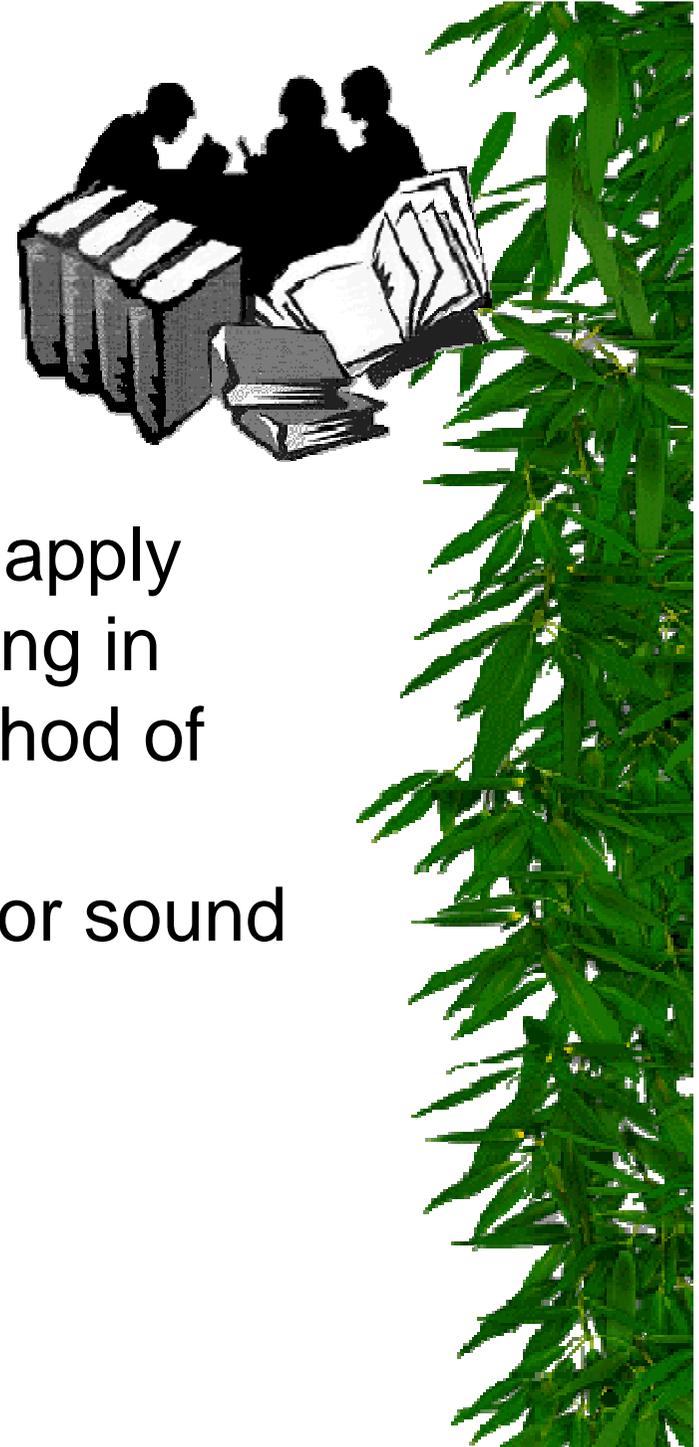


When do you need EBM and BEME in Geriatric Medicine



- 1) Special circumstances & needs of the older patient**
- 2) Achieving a diagnosis and achieving it early**
- 3) Estimating a prognosis**
- 4) Deciding on the best therapy**
- 5) Determining harm**
- 6) Providing care of the highest quality**

Objective

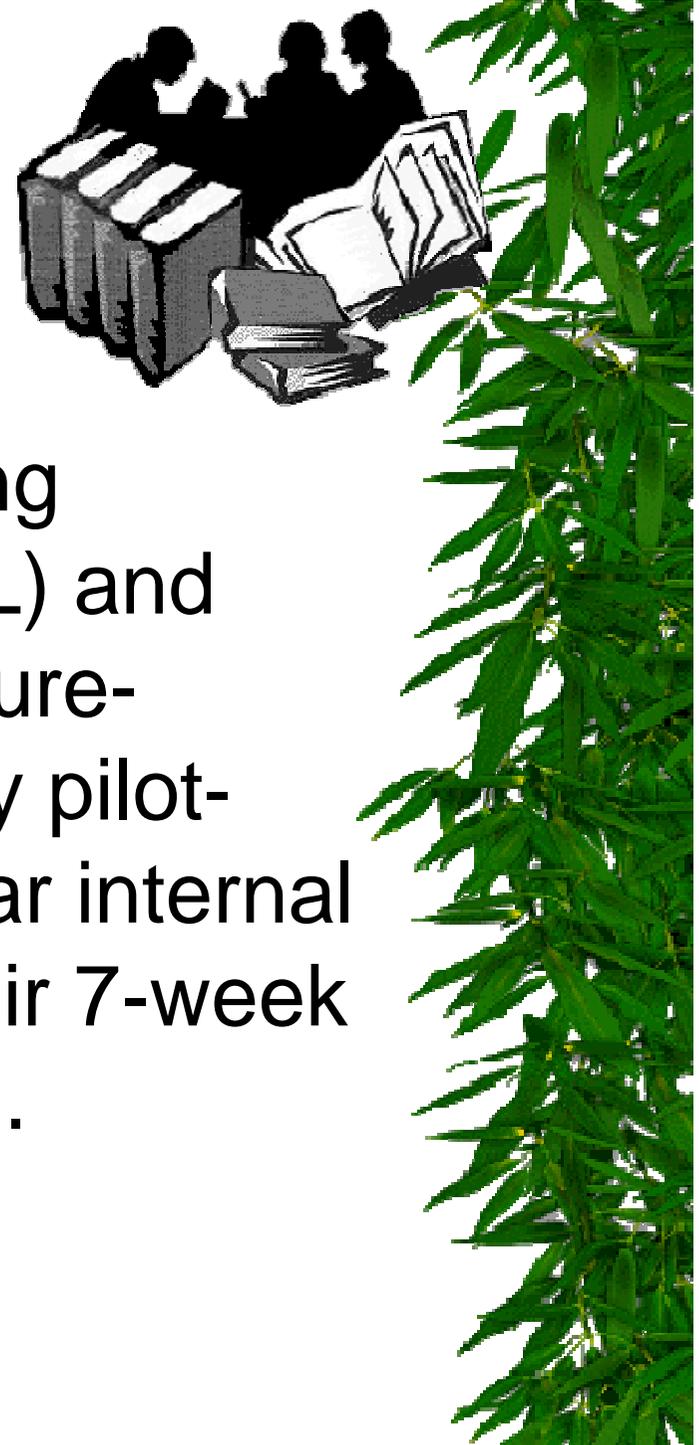


- * The purpose of the study was to apply BEME in geriatric medicine training in relation to the most effective method of imparting the attitudes, skills and knowledge essential to prepare for sound and modern geriatrics practice.

Evidence-based anti-aging:

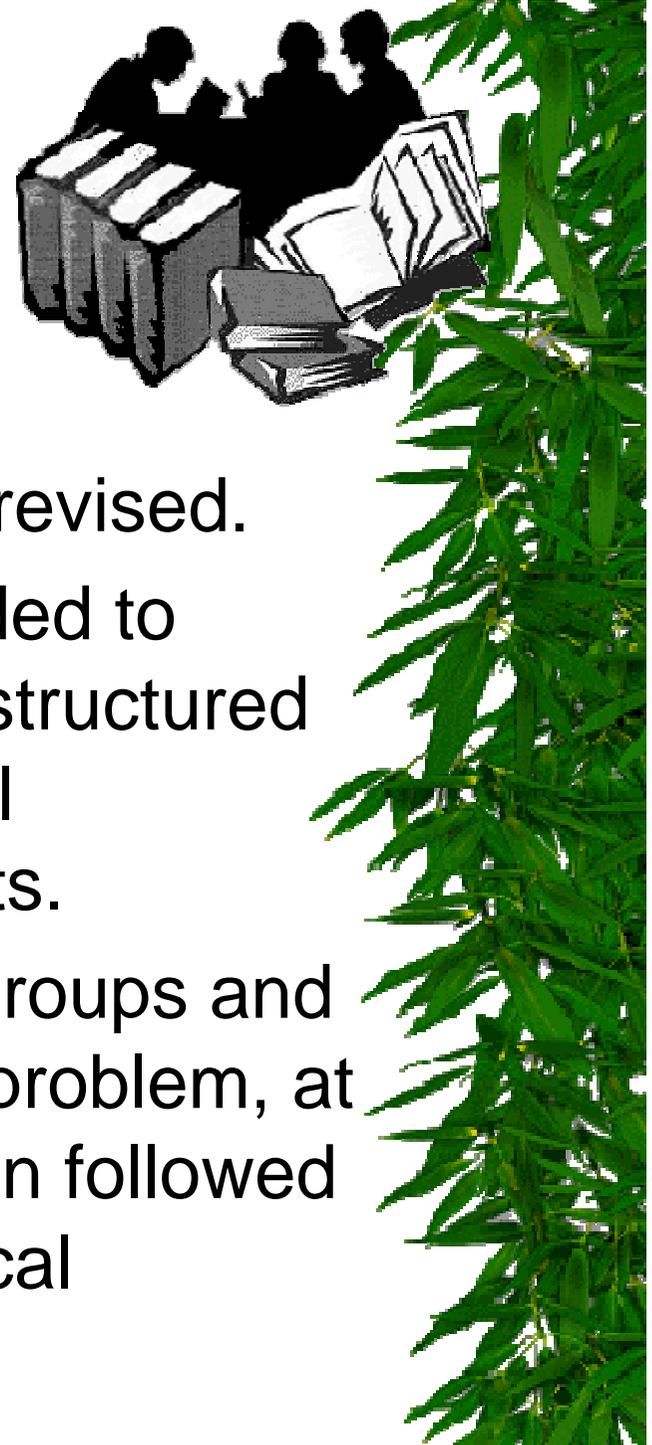


Methods



- ★ The feasibility of implementing problem-based learning (PBL) and EBM into our traditional "lecture-based" medical curriculum by pilot-testing PBL using our 5th year internal medicine students during their 7-week clinical rotation was explored.

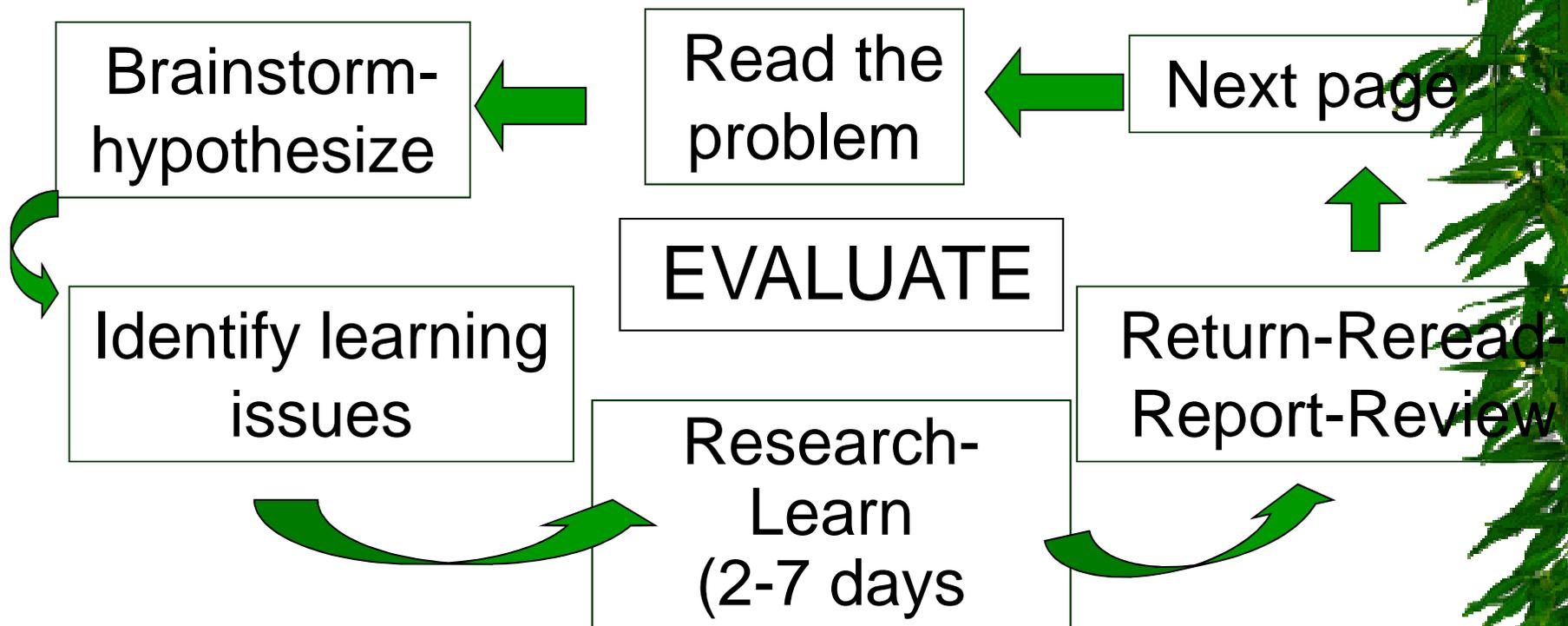
Methods



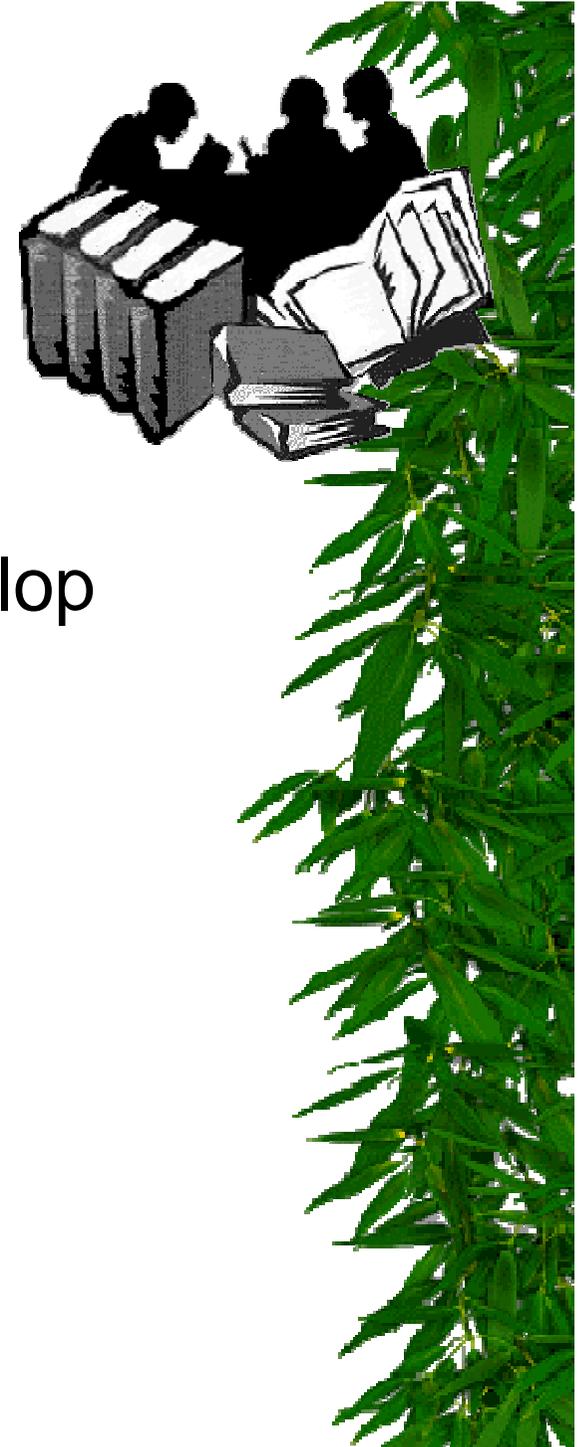
- ★ At the beginning of the round, the fundamental stages of EBM were revised.
- ★ Students were taught and proceeded to generate specifically defined and structured clinical questions from their clinical encounters with older adult patients.
- ★ Students were divided into small groups and asked to tackle a geriatric clinical problem, at first there was a brainstorm session followed by the formulation of focused clinical questions.

Example

Mrs. Zenab Mourad is a 78 year old woman who has come to the emergency room complaining of shortness of breath and pain in her chest. She had been in relatively good health until three weeks previously.

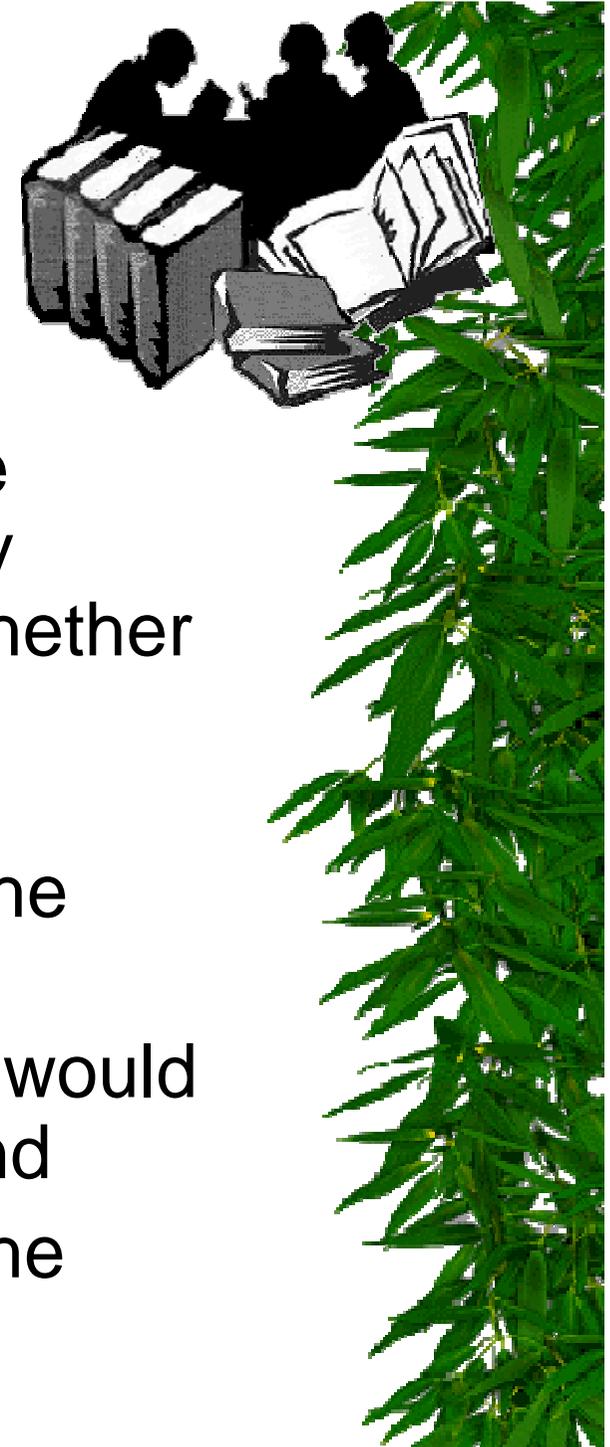


Methods



- ★ The participants were asked to develop geriatric patient-based searchable questions, search for the evidence, critically appraise the retrieved literature and finally to apply the evidence to the care of their patient.

Methods



- ★ At the last meeting of the round, the participants evaluated each case by answering three questions about whether the process:
 - 1) had changed the medical management of the patient during the admission,
 - 2) had changed the way they would manage similar patients in future and
 - 3) had informed them about the disease process in general.

BEME teaching in Geriatric Medicine

Example of Implementing BEME in Geriatric Training

- * **Setting the question:** A 66 yr old female suffering from osteoarthritis of both knees as well as having Congestive heart failure what are the best treatment options ??
- * **Finding the evidence:** Search for best available evidence. → to conduct the search need effective searching skills and easy access to bibliographic databases = increased access can be provide by **ward –based computer** and complemented by hard copies of the articles.
- * **Appraising the evidence:** Rely on the article or not= learn how to ask a few key questions about the validity of the evidence +relevance = tutorials, workshops, interactive lectures and at the bedside.
- * **Acting on the evidence:** implement the evidence to develop team protocols or even rheumatology ward guidelines. (**Best way to be learned through group discussions, ward rounds, or clinical weekly meetings.**



Evidence-based anti-aging

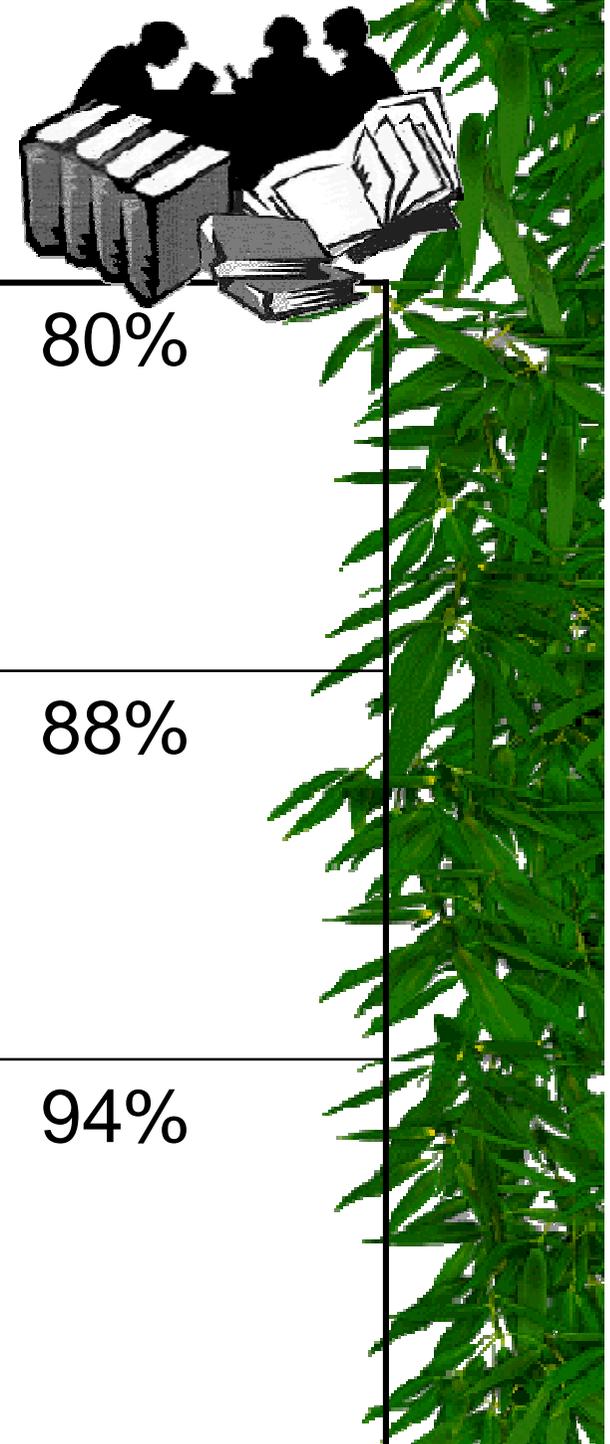


RESULTS



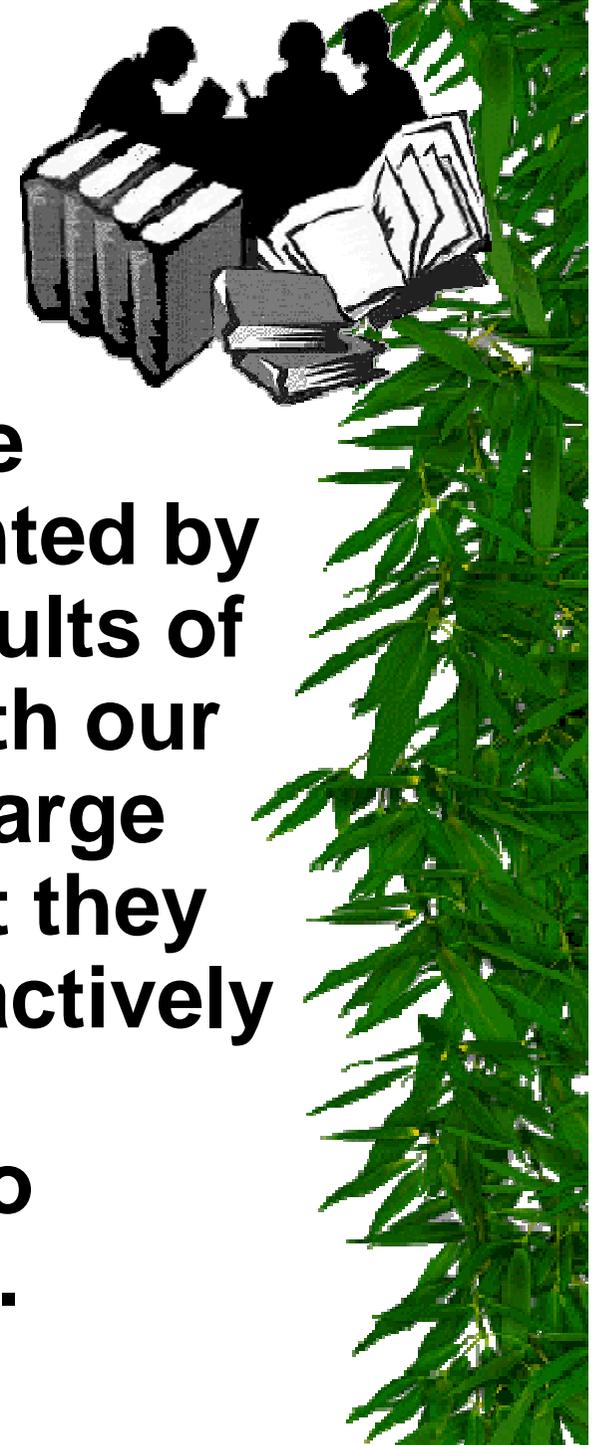
Number of formal EBM in Geriatric Medicine questions	45
Duration of development and assessment of questions	7 weeks
Number of articles retrieved and critically appraised	115

Evaluation Results



Percentage of participants who felt the process had changed the active management of elderly patients by the team	80%
Percentage of participants who felt that the process would affect the care of future elderly patients with comparable clinical problems	88%
Percentage who believe that the process has made them more knowledgeable of various disease processes	94%

Results



- ★ **The evidence-based healthcare approach was easily implemented by the participants. The initial results of the pilot experiment of PBL with our medical students was by and large positive- students claimed that they were motivated to participate actively in the decision making and management of the case and to perform an information search.**

Conclusions



- ★ There is evidence to support the use of PBL and EBM in medical education and geriatric medicine practice.
- ★ Geriatric training could be improved significantly by adopting the evidence-based advances that have been made in medical education.



Geriatric Medicine Opportunities

- ★ Geriatrics provides a unique educational environment
 - Explosion of new therapies/Polypharmacy
 - Wide range of presentations and atypical presentations
 - Emphasis on decision making
 - Interprofessional interactions
 - Greater incidence of side effects
- ★ Design unique educational opportunities
- ★ Document educational outcomes



Geriatric Medicine Opportunities

- ★ Developing decision making skills
 - Integrating foundational knowledge into diagnosis of patient presentation
 - Emphasis on early treatment and management
 - Design ways by which students/physicians-in- training will acquire expertise in electronic information management and skills of BEME as a basic tool for life-long learning and clinical decision-making.



BEME: Pros and Cons

- ★ **Pros:** For individuals: clinicians upgrade their knowledge routinely
- ★ Improves clinicians understanding of research methods
- ★ Improves computer literacy
- ★ For junior doctors: contribute to teamwork
- ★ For patients: better healthcare
- ★ **Drawbacks:** Time-consuming for learner and teacher.
- ★ Establish the infrastructure



**Teaching Evidence Based
Practice= We should face the
challenge.**

There is a gap to be filled!!

**“Knowing is not enough, we must apply,
Willing is not enough, we must do.”**



Take Home Message

“Anyone with responsibility for educating students, residents, and physicians should be skilled and well informed about medical education - as preparing these learners to provide safe, humane, and effective care for the members of our society is a heavy responsibility”



If I'd known I
was going to
live so long,
I'd have
taken better
care of
myself.



