Risk factors, health maintenance, disease prevention

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History of health prevention

"Those who are well do not need a physician, but the sick do.”

Jesus of Nazareth Mark 2:17

American Medical Association

- 1922 – first proposed ANNUAL physical exam of healthy people
  - "One size fits all"
- 1983 – recommends PERIODIC visits
  - Appropriate testing based on age, sex, ...

United States Preventative Services Task Force

- Commissioned 1984
  - US Dept of Health and Human Resources
    - 2002 = Agency for Healthcare Research and Quality (AHRQ)
- Majority of deaths < 65 are preventable
- Mission = promote effective clinical prevention
  - (but, first do no harm)
- Recommendations based on scientific evidence
- Audience = clinicians in primary care settings

USPSTF editions

- First edition
  - Convened 1984
  - Published as single volume, 1989
- Second edition
  - Published as single volume 1996
  - 70 chapters
- Third edition – incrementally released
  - Convened 1998
    - 55/70 chapters out of date
    - 15 new chapters to be added
    - First new publications released, April 2001
    - As of 1/05, 43 new recommendations

USPSTF – 3rd edition

- Convened to assess the merits of preventive measures:
  - Screening tests
    - Cancer
    - Heart and vascular disease
    - Mental health conditions
    - Metabolic, nutritional and endocrine conditions, etc.
  - Counseling
    - Breast feeding, diet, physical activity, skin cancer,
    - Tobacco use etc.
  - Chemoprophylaxis
    - Hormone replacement therapy
    - Aspirin use in primary prevention of heart dz, etc.
USPSTF Rating System for Strength of Overall Evidence

- **Good/Fair/ Poor**
  - Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assesses effects on health outcomes

USPSTF Recommendations and Ratings:

- A: strongly recommends/good evidence
- B: recommends/fair evidence
- C: no recommendation for or against/fair evidence to improve outcomes, but, harms ~ benefits
- D: recommend against/fair evidence for ineffective or harms > benefits
- I: insufficient to recommend for or against/evidence is lacking or of poor quality, or conflicting; benefit vs. harm cannot be determined

Top 10 Causes of Death 2000 & 2001 (men and women)

1. Heart diseases (29.6% of all deaths in 2000)
2. Cancer (23%)
3. Cerebrovascular diseases (7%)
4. Chronic lower respiratory dzs (5.1%)
5. Accidents (4.1%)
6. Diabetes Mellitus (2.9%)
7. Influenza and Pneumonia (2.7%)
8. Alzheimer Dz (2.1%)
9. Nephritis, Nephrotic Syndrome, Nephrosis (1.5%)
10. Septicemia = overwhelming infection, in the bloodstream (1.3%)


**Ages 20-39, Men**
1. Accidents
2. Suicide
3. Homicide
4. Heart Disease
5. Cancer
6. Leukemia
7. Brain
8. Bones and Joints

**Ages 20-39, Women**
1. Accidents
2. Cancer
3. Breast
4. Uterine
5. Leukemia
6. Heart Disease
7. Suicide
8. Homicide

**Ages 60-79, Men**
1. Cancer (157,504 deaths)
   - Lung (15,886 deaths)
   - Colon (5,078 deaths)
   - Pancreas (2,958 deaths)
   - Liver (2,472 deaths)
   - Esophagus (2,347 deaths)
2. Heart Disease
3. Chronic lower respiratory dzs (COPD)
4. Cerebrovascular dzs
5. DM

**Ages 60-79, Women**
1. Cancer (129,877 deaths)
   - Lung (39,099 deaths)
   - Breast (17,405 deaths)
   - Colon (12,255 deaths)
   - Pancreas (7,722 deaths)
   - Ovary (7,353 deaths)
2. Heart Disease
3. Chronic lower respiratory dzs (COPD)
4. Cerebrovascular dzs
5. DM

**Risks and causes of death**

- Accidents
  - Seat belts?
  - Helmets? Did you ask about exercise/hobbies?
  - Occupation?
- Suicide
  - Gun in house?
  - Prior h/o suicide attempt?
  - H/o depression?
- Heart disease
  - Cholesterol?
  - HTN?
  - DM?
  - Early family history?
  - Tobacco?

Leading Causes of Death 2001

Same for M & F age 60-79

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Web sites for guidelines

- USPSTF (for clinicians)
  - www.ahrq.gov/clinic/gcpspu.htm (3rd edition)
  - www.ahrq.gov/clinic/uspstf.htm (overview USPSTF)
  - www.ahrq.gov/clinic/uspstfiv.htm (bullets - index)
  - https://www.ahrq.gov/clinic/gcpspu.htm (updates to third edition)
- National Guideline Clearing House (AHRQ)
- Canadian Task Force on the Periodic Health Exam (CTFPHE)
  - www.ctfphc.org/

Risk assessment

- Accuracy of the history documented is crucial
- Thoroughness of the history is crucial

2 examples of risk assessment

- Heart disease event in next ten years
  - Framingham risk assessment
      - (NCEP, adult treatment panel III, JAMA May 2001)
- Breast Cancer risk in next 5 years
  - Gail model
    - http://bcrx.nci.nih.gov/brc/q1.htm
  - Modified Gail model
    - http://www.nalls.md/breast/riskcom.htm

Framingham 10 year risk assessment for MI/cardiac death

- Age: years
- Gender: Female/Male
- Total Cholesterol: mg/dL
- HDL Cholesterol: mg/dL
- Smoker: No Yes
- Systolic Blood Pressure: mm/Hg
- Currently on any medication to treat high blood pressure. No Yes

Framingham 10 year risk assessment for MI/cardiac death

- High risk > 20% ten yr risk
- Intermediate risk 10-20% ten yr risk
- Low risk < 10% ten yr risk

Some factors to consider when deciding who to screen:

- Age
- Sex
- Family history
  - Breast cancer (breast and ovarian cancer)
  - Colon cancer
- PMHx/surgical history
  - Diabetes? - Gestational diabetes? obese?
  - Hysterectomy for benign or malignant reason?
Colon cancer
- All patients age 50 and over. "A" rec
  - Stool cards ("good" evidence)
  - Flexible sigmoidoscopy ("fair" evidence)
  - Colonoscopy (no direct evidence)
  - Barium Enema (no direct evidence)
- Begin earlier (<age 50) if higher risk
  - 20% of all colon cancers occur in pts with risk factors:
    - Family history of first degree relative dx < age 60
    - Family hx hereditary nonpolyposis colorectal CA
    - Personal history of longstanding ulcerative colitis

Breast cancer
- All women age 40 and over. "B" rec for screening mammography with or without a clinical breast exam q 1-2 yrs
- Higher risk with family history (Bates p. 302-304):
  - Premenopausal 1st degree relative
  - Bilateral cancer in 1st degree relative
- BRCA1 and BRCA2 genes
  - Only 5-10% of all breast cancer
  - But 50% risk of dz if < age 50; 80% risk of dz by age 65

What do we do at Loyola?
- Standardized forms
  - Databases filled out by new pts
  - Progress notes – new and return visits
- EPIC – electronic medical record

Gynecology yearly visit progress note at LUHS
- Counsel
  - Smoking cessation
  - Illicit drug cessation
  - Calcium/Vitamin D
  - Menopause/HRT risk benefits
  - Domestic violence
  - Self breast exam
- Tests
  - Occult blood
  - Pap
  - GC/Chlamydia
  - Bone density
  - Cholesterol
  - Mammogram
  - Influenza vaccine
  - Tetanus vaccine

Pediatric new patient database at LUHS
- Family history
- Does child live in a pre-1960 building?
- Do any smokers live with the child?
- Is a gun kept in the place where your child lives?
- Has anyone close to this child died?

Adult new patient database at LUHS
- Family history
- Blood transfusion?
- Cholesterol in last 5 years?
- Stool test for: blood, endoscopy, BE?
- Immunizations
- Do you own a handgun?
- Pap/Pelvic exam/Mammogram?
- Smoke?
- Alcohol?
- Seat belts?
What do we do at Loyola?

- Flow sheets for adults
- Preventative care (brown)
- Chronic disease (pink)
- Pediatric vaccination sheet for children
- EPIC – electronic medical record

It is not just good medicine...

- HEDIS
  - Insurance carriers (HMOI)
  - LUHS Primary Care QI projects
    - Preventative care
    - Chronic disease – DM, asthma
    - Influenza vaccinations
      - Age 6 month – 23 month
      - Age 50-64
      - Age 65+
      - Diabetics/asthmatics
  - Primary care – yearly faculty review
  - Primary care – recredentialing for privileges
  - Malpractice – failure to diagnose

HEDIS

= Health Employer Data Information Set
- 271 different insurance companies
- 71.3 million covered lives in America
- HMO or POS insurance
- Reports on 60 measures annually
**HEDIS Measures examples**

**Childhood (Age 2) vaccination status**
- 4 doses DTP
- 3 doses IPV or OPV
- 1 dose MMR
- 2 doses Haemophilus influenza type b
- 3 doses Hepatitis B
- 1 dose Varicella Zoster

**Adolescent (Age 13) vaccination status**
- 2 doses MMR
- 3 doses Hepatitis B
- 1 dose Varicella Zoster

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**HEDIS Measure example**

**Cervical Cancer screening**

- Women age 18-65
- One pap in three years
- Exclusion=hysterectomy for a benign diagnosis (surgical hx)

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**Influenza season 2004-2005**

- Influenza causes 51,000 excess deaths/yr
- Influenza and Pneumonia
  - #7 overall cause of death in US, 2000
  - #8 cause of death in children age 1-14 in US, 2000
- Each year:
  - 10% to 20% of population is ill with influenza
  - 30% to 40% of school children get influenza

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**Quality Improvement**

- QI is here and now
- "Opportunity to Improve"
  - Hunch
  - Baseline measurement
- Standard/Target defined
  - Good studies
  - Expert opinion – National Consensus
- Implement a change, new process
- Remeasure and assess, did it work?

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**Influenza - goals**

- Healthy people 2010 vaccination goals
  - age 65+ = 90%
  - Healthcare worker goal = 60%
    - LUHS ’02 37%
    - LUHS ’03 42%
  - High risk age 18-64 goal = 60%
    - Asthma
    - Diabetes Mellitus
    - ESRD (end stage renal disease)
    - Chronic cardiovascular and pulmonary disease

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**Quality Improvement at LUHS**

- On going
- Every department
- CCE = Center for clinical effectiveness
  - Quarterly reports
  - Top down – Dr. Barbato, CEO; VPs, every manager, every physician
- You will experience QI efforts at LUHS
Influenza 2002

- LUHS PC chart audits from last flu season got flu shot or documented refusal:
  - age 65+ = 83%
  - age 50-64 = 66%
  - Adult with asthma = 72%
  - Adult with DM = 75%
  - Children age 6 mo – 23 mo = 15%
  - NEW 2003 – is covered by Vaccines for children

Influenza season 2004-2005

- Expanded indications promoted, May 2004
  - Age 50+ (not just 65+)
  - Children ages 6mo – 23 months
  - Pregnant women, all trimesters
  - Chronic diseases – DM, asthma, ESRD, immunosuppression (HIV or by meds), chronic CV and pulmonary disease...

Influenza vaccination

- LUHS system efforts – all of ambulatory
  - Primary care
  - Pediatrics
  - Obstetrics/Gynecology
  - Internal medicine specialty (cardiology, pulmonary...)
  - Cancer center
  - Stop flu buttons
    - Smaller size this year – more people wore
  - IDX prompts to clinical staff
    - 10/1/03 to 12/31/03
    - Pts ages 50+
    - Children ages 6 months to 23 months

Increased Publicity

Influenza season 2003-2004

- Posters in cases
- Posters on campus buses*
- Table tents on waiting room end tables*
- "Inside the system" newspaper*
- Patient mailed reminders of visits*
- Flu clinics in LOC lobby
- Mailed postcards to high risk pts – Oct*
  - *new for 2003

Influenza is a serious illness.

Flu shots can help prevent the suffering, missed days of work and complications that are associated with the flu.

Who should get a flu shot?

- Everyone 6 months of age and older
- Everyone in contact with infants
- Older adults (especially those with chronic medical conditions such as asthma)
- Persons with chronic cardiac and pulmonary disease
- Persons with chronic metabolic disease
- Persons of any age with chronic health conditions leading to immunosuppression
- Persons taking medications that suppress the immune system
- Persons with chronic conditions that are associated with increased risk for severe flu illness
- Persons with underlying medical conditions that make them more severe if they become ill with influenza (e.g., a history of reactive airways disease)

Flu shots are available now.

There are several new recommendations this year for flu shots. Talk to your doctor today to see if any of the new recommendations apply to you.
Influenza Resource

- www.cdc.gov/nip/flu/ (home page CDC flu)

Influenza 2004-2005, changes to increase vaccination rates

- Delete consent form
  - not legally required
  - Slowed down the process (a barrier)
- Standing order for adults for all LUHS 2004
- Take the doctor out of the loop
- Flu shots offered to inpatients at time of discharge if age 65 and older

Documenting flu shots

- If you don’t document,
  - You didn’t give it!
  - Document refusals

Influenza season 2003-2004

- Everyone has a role to play encouraging influenza vaccination

  Health care workers should get vaccinated!
  - Employee health fare
  - Safety fare
  - Occupational health nurse on campus
    - VARYING LOCATIONS, VARYING HOURS

Risk assessment

- Practice on each other in small groups
- Standardized patient exercise