Physician Self-referral and Health Care Utilization

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- Professor of Medicine
- UCSF Medical Center
Physician self-referral – why should we care?

- Extent of occurrences
- Impact of physician self-referral
- Benefits of physician self-referral
- Incentives for physician self-referral
- Policy changes
  - Within the profession
  - Outside the profession
Physician self-referral

- Rapid increase in advanced imaging modalities by non-radiologist
- Echo (cardiac ultrasound)
- Radiation therapy
- Early dialysis
- Use of interventional treatments by interventional doctors
  - PCI (stent), ICD (defibrillators)
- Localized prostate cancer treatment
Imaging

- GAO reports a doubling in the cost of imaging services from 2000-2006
  - $14.1 billion in Medicare spending in 2006 alone
- Rapid growth in myocardial perfusion imaging

GAO 08-452, Levin et al JACT 2009, Einstein A et al JAMA
Trends in testing and treatment of CAD, 1993-2001

Lucas et al. *Circulation* 2006;113:374-9
Myocardial Perfusion Imaging (MPI)

• Medicare Part B Payments 1998 -2006
  – $72.6 to $84 mil (+16%) radiologists
  – $242.6 to $972 mil (+301%) cardiologists

• Private office utilization per 1,000 Medicare beneficiaries
  – ↑215% cardiologists
  – ↑32% radiologists

Radiation from MPI

• All (n=1097) pts who got MPI at Columbia University in early 2006 (1988-2008)
• Patients had a median of 15, mean of 24 procedures with radiation exposure
• Median of 4 were high-dose procedures
• 344 patients (31%) received dose of >100mSv (1000 chest x-rays) from medical sources

Einstein et al JAMA 2010
CT Scans

- 72 million done in 2007 alone
- 30,000 excess cancers
- 15,000 excess deaths

Berrington de Gonzalez A et al. Arch Int Med 2009
Direct to consumer advertising leads to increased usage

South Florida Medical Imaging
Cardiovascular Institute (SFMICVI)

Proudly announces
The New Ultra Low Radiation
64 Slice CT Scanner:
“Step & Shoot”

- 80% Less Radiation than conventional Cardiac CT Scanners
- Study is completed in a single short breath hold - 10 seconds
- SFMICVI is the first center in Florida to offer this new technology

We are pioneers in the field of cardiac CT and established the first teaching center in the world for Philips Medical. SFMICVI was voted in the top 10 Outpatient Imaging Centers in the US and was amongst the first to be accredited and endorsed by the Society of Cardiac Computed Tomography (SCCT)

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ACCF/ACR/SCCT/SCMR/ASNC/NASCI/SCAI/SIR 2006 Appropriateness Criteria for Cardiac Computed Tomography and Cardiac Magnetic Resonance Imaging*

A Report of the American College of Cardiology Foundation Quality Strategic Directions Committee Appropriateness Criteria Working Group, American College of Radiology, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, American Society of Nuclear Cardiology, North American Society for Cardiac Imaging, Society for Cardiovascular Angiography and Interventions, and Society of Interventional Radiology
Appropriate Use Criteria

- Good first step
- Based on opinion, not on scientific data
- Questions of bias
- Not being used
- What to do with the inappropriate procedures?
US Health Care Spending

HOW THE UNITED STATES COMPARES WITH OTHER O.E.C.D. MEMBERS

- Each dot represents one country
- United States
- Peer European economies: Britain, France, Switzerland, Italy, Germany

Data from 2007 or most recent available year

A country’s wealth usually dictates how much money it spends on health care, but spending in the United States is far beyond that of its peer countries.

HEALTH CARE SPENDING AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>5.7</td>
</tr>
<tr>
<td>Britain</td>
<td>8.4</td>
</tr>
<tr>
<td>France</td>
<td>11.0</td>
</tr>
<tr>
<td>United States</td>
<td>16.0</td>
</tr>
</tbody>
</table>
Density of CT Scanners

The McKinsey study shows that the intensity of medical treatment — as seen in measures like the number of high-tech diagnostic scanners — is relatively high in the United States.

**CT SCANNERS, PER MILLION PEOPLE**

- Mexico: 4.0
- Canada: 12.7
- United States: 34.3
- Australia: 56.0
Advanced Imaging

• Rapid increase in ownership by non-radiologists
  – Myocardial perfusion imaging in private offices of cardiologists
  – Increase in in-office ownership or leasing of CT, MRI, US and PET scanners
MRI

• Increased neurologist and orthopedic ownership or interest

• Drives up utilization and cost
  – Imaging
  – More downstream procedures

• No impact of better care
What is impact of increased advanced imaging?

• Advocates say
  – Better for patient care
  – Reduce costs by shifting care from hospital and EDs into offices

• However, there is no data to support above

• Evidence shows that self-referral for advanced imaging increases cost

• Little positive clinical impact

• Not more convenient
Echocardiography

- 20 million echoes per year in Medicare beneficiaries
  - 1000 echoes/cardiologist
- Echo machine in many doctors offices
  - Internists
  - Family doctors
  - Cardiologists
Radiation Therapy

- Joint ventures where physician own health care facilities
- Decreased access to care
- Increased use of services and costs substantially
- No improvement in quality

Mitchell Jean, Sunshine J NEJM 1992
Early Start of Dialysis May Be Harmful

- Since 1996 there has been a dramatic increase in initiation of dialysis
- Unadjusted one year mortality
  - 6.8% in reference group (eGFR <5)
  - 20.1% in reference group (eGFR >15)
- Time to rethink the timing of dialysis initiation

Rosansky et al. Arch Int Med 2010, Johansen K Arch IM 2010
ELYRIA, Ohio — People with blocked coronary arteries can typically choose among drugs, bypass surgery and vessel-clearing procedures like angioplasty.

But in this small, aging industrial city in northeast Ohio, doctors are much more likely than those anywhere else in the country to steer patients toward angioplasty — a treatment that typically involves threading balloon catheters through arteries and sometimes placing drug-coated stents to unblock them.
More "unnecessary stents," now in Pennsylvania

MARCH 3, 2011 | Shelley Wood

Greenberg, PA – Two cardiologists in the Pittsburgh area are being singled out for having performed "unnecessary" stent procedures, following the conclusions of two teams of outside reviewers, the Pittsburgh Tribune-Review is reporting [1].

News that Drs Ehab Morcos and George Bousamra, of Westmoreland Hospital in Greenberg, PA, may have implanted over 140 unneeded stents in 2010 comes as Maryland legislators are being asked to consider laws to strengthen cath lab oversight, ideally to prevent such cases from occurring.
PCI for stable CAD – Clinical Evidence

• Benefits for elective PCI in asymptomatic patients or patients with stable angina are not established—meta-analyses & recent RCT show no benefit in terms of CHD events and death.
  – 30% of all patients getting stents are asymptomatic

• Main benefit of elective PCI is quicker improvement in anginal symptoms, no difference in long-term.
Non-evidence-based ICD implantations in the US

• Guidelines do not recommend ICD for primary prevention in certain patients
  – Post MI (heart attack), CABG (bypass surgery), new diagnosis of heart failure

• Nat'l Cardiovascular Data Registry, 2006-9
  – 25,145 of 111,707 (22.5%) patients got non-evidence-based defibrillator implants
  – Significantly higher risk of in-hospital death with non-evidence-based ICD (0.57 vs 0.18%)

Al1Khatib S et al JAMA 2011
Localized Prostate Cancer Treatment

- Surveillance, Epidemiology and End results-Medicare linked database 1994-2002

- Looked at treatment strategy (85,088 men)
  - Radical prostatectomy (21%)
  - Radiotherapy (42%)
  - Androgen deprivation (17%)
  - Expectant management (22%)

- Strong association between type of specialist seen and treatment strategy

- Men seen by primary care physicians (PCP) were more likely to be managed expectantly
Numerous other examples

- Physician ownership in orthopedic specialty hospitals increased utilization
- Cardiology specialty hospitals do more revascularizations
- In radiation therapy, self-referral associated with increased costs and decreased access to care
- Adjuvant RT used more in hospitals with on-site radiation