

Drugs Don't Work in Patients Who Don't Take Them



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Objectives

1. To share some Fraser Health specific adherence data
2. To review the evidence of the impact of poor adherence
3. To discuss strategies to improve patient adherence

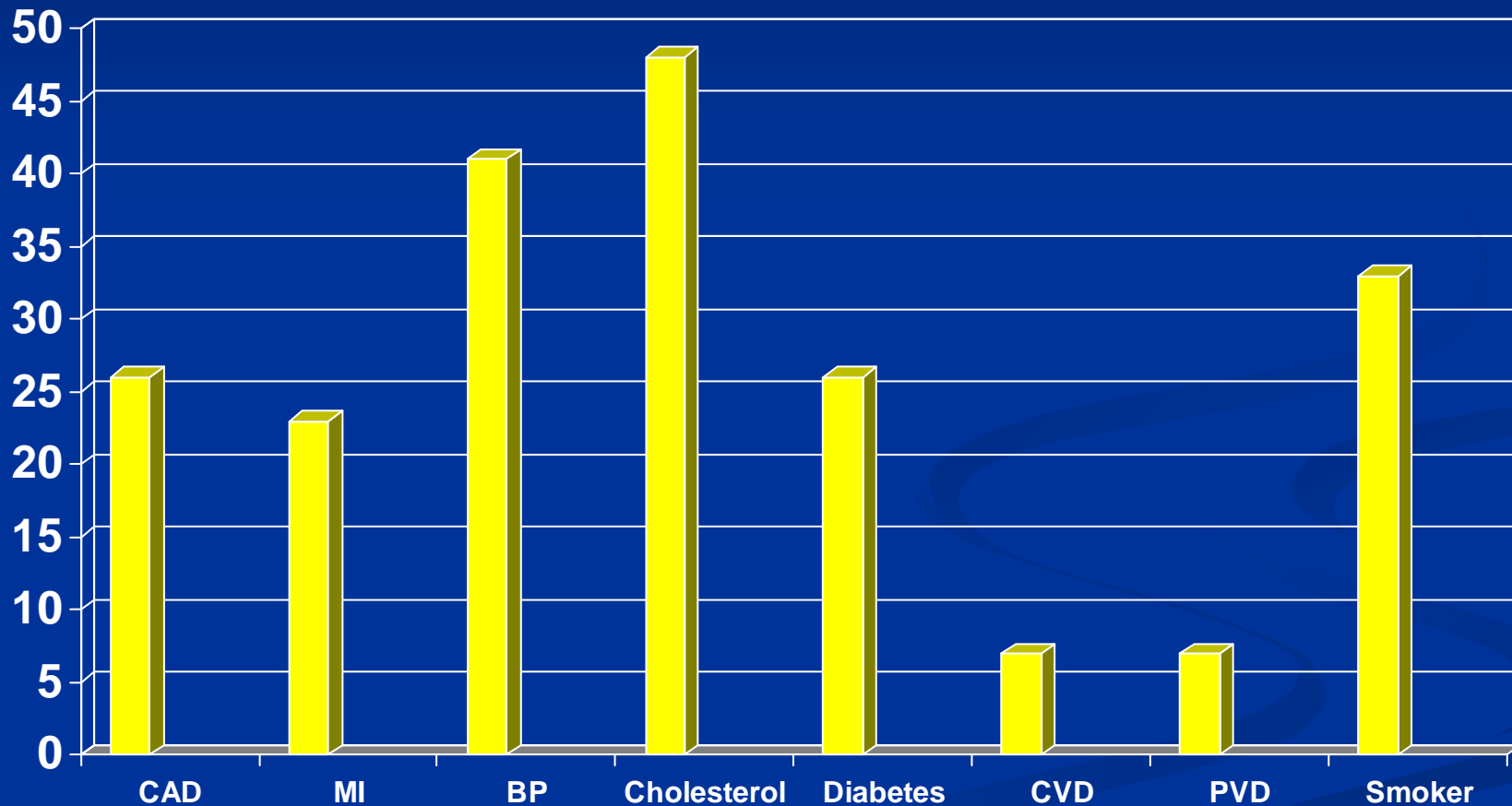
RCH Medication Adherence

- 2008 RCH Medication Adherence Study
 - ACS Life altering event
 - Medication Adherence improves outcomes
- Primary:
 - The percentage of patients adherent to cardiac regimens at 3, 6, and 12 months post-PCI
 - The medications included will be beta-blockers, ACE inhibitors or ARBs, lipid lowering therapy, and antiplatelet agents.
- Secondary:
 - Identify barriers to medication adherence

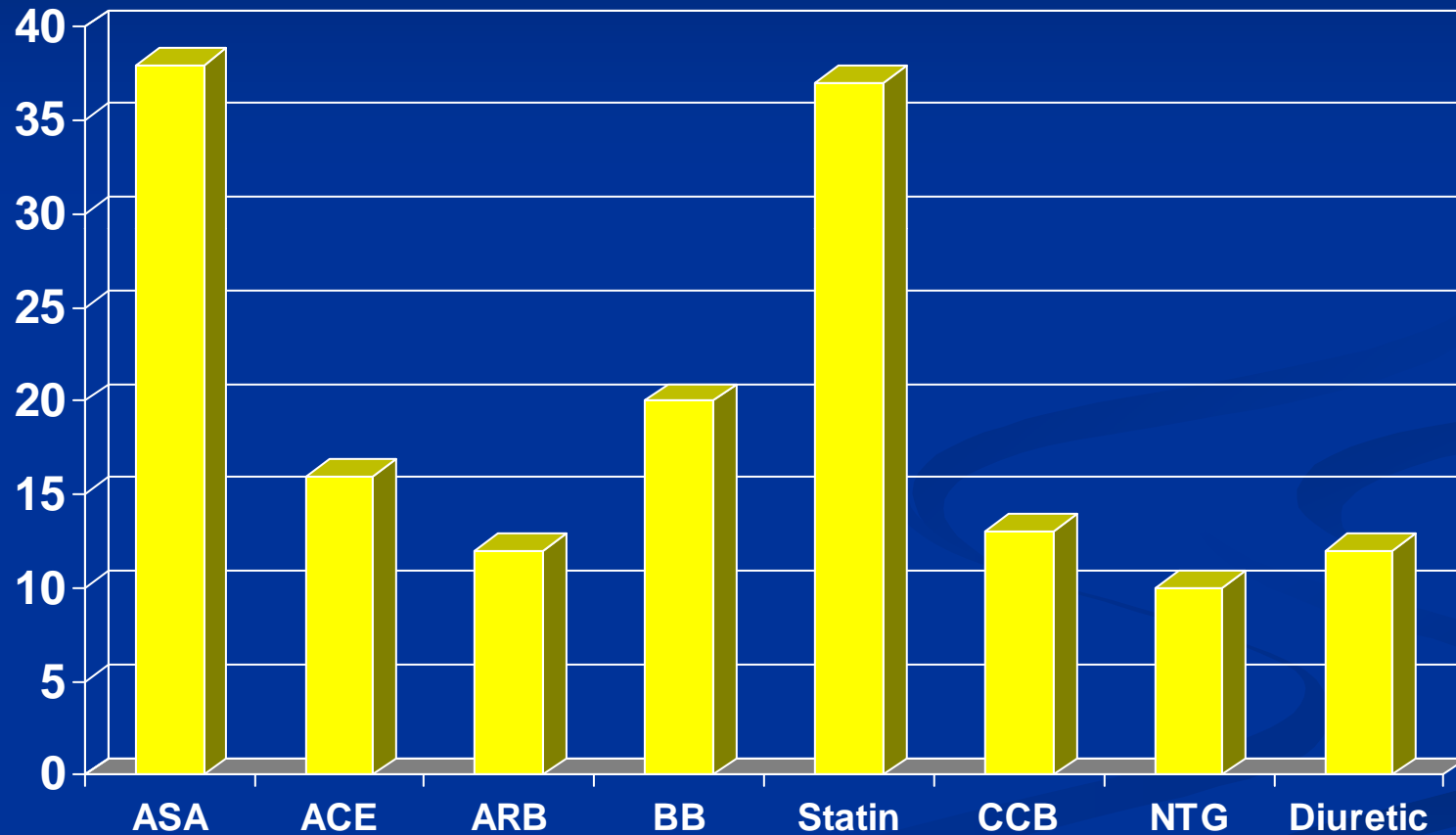
Case Presentation

- TB 51 year old caucasian male
- Admitted 13 May 2008
 - STEMI
- PMH
 - CAD, MI, Hypertension, Smoker
- MPTA
 - ASA

Patient Demographics



Medications Prior To Admission



What Happens After PCI ?

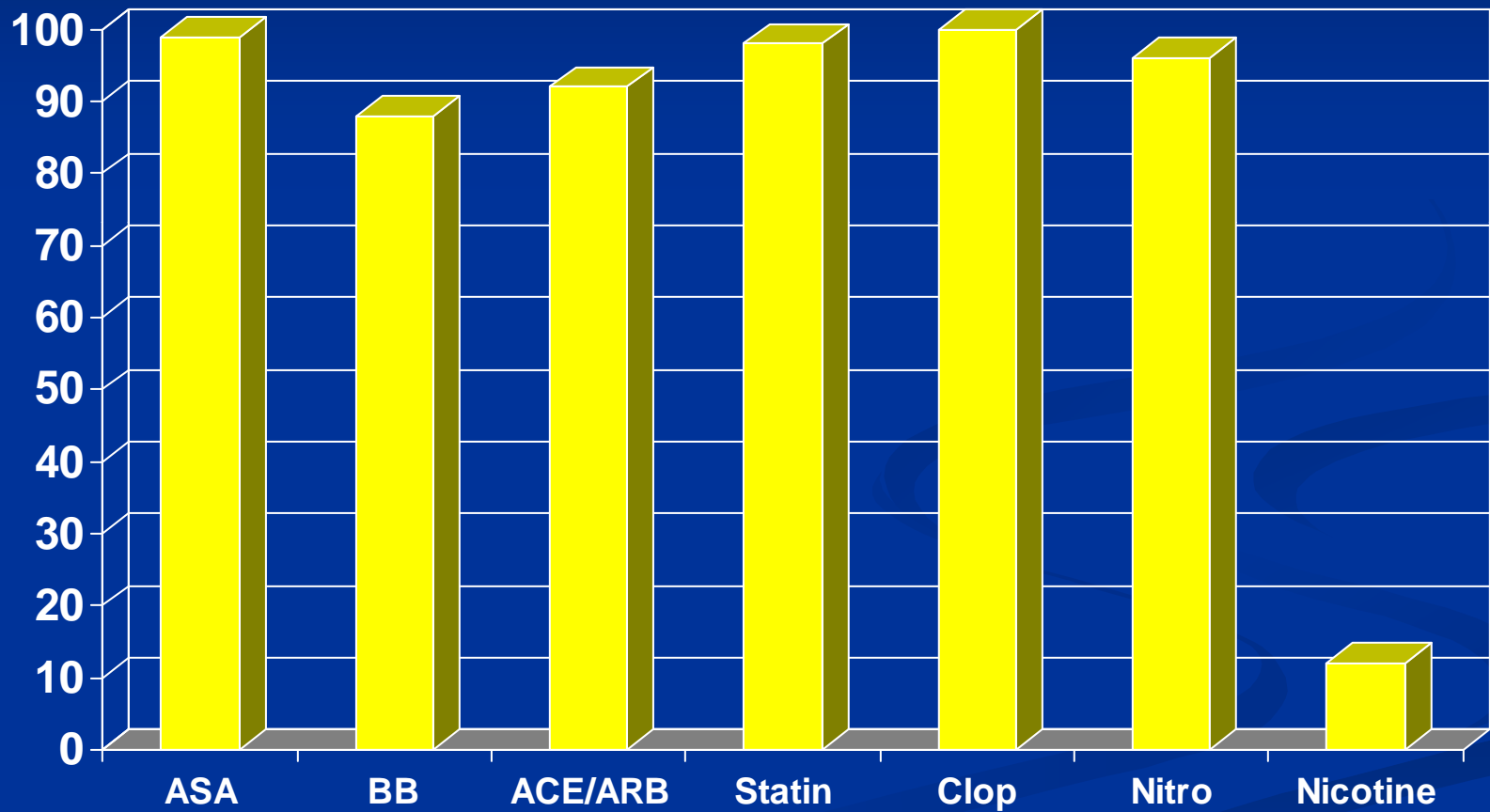
- Pain immediately disappears
- Next am patient feels well and wants to go home
- Shocked that he has had a heart attack
- Worried about side effects from medication and wonders why he needs to be on them

Secondary Prevention for Patients with Coronary Disease

- Anti-platelet agents
- ACE-inhibitors / ARBs
- Beta Blockers
- Lipid Management
- Blood Pressure
- Diabetes Management
- Physical Activity
- Weight Management
- Smoking
- Influenza vaccine

Circulation 2006;113:2363-2372

Medications At Discharge



PREMIER Registry

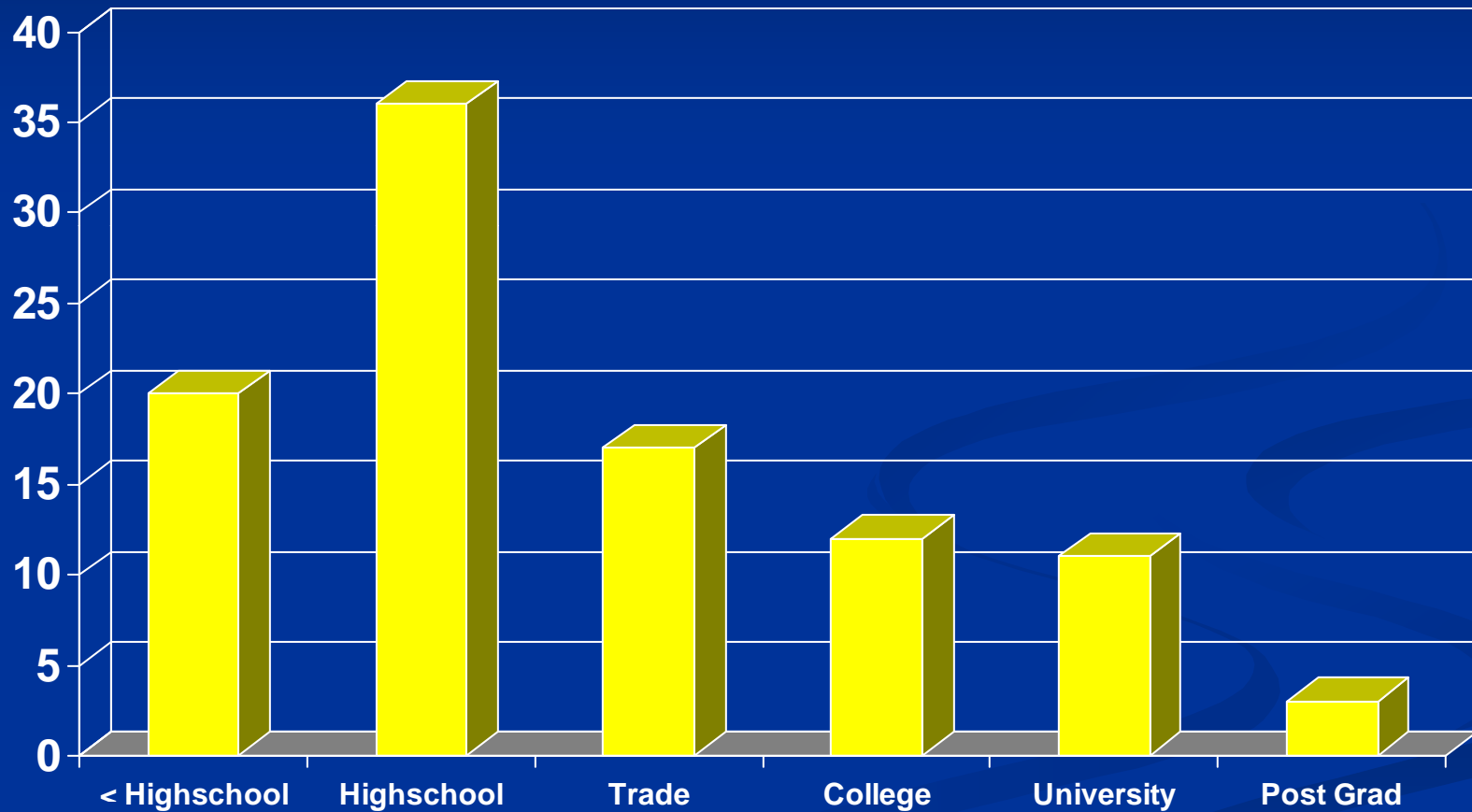
- US data – 19 centers, 500 MI patients
- All received DES
- 13.6% stopped clopidogrel within 30 days
- Mortality by one year:

premature discontinuation	7.5%
adherent patients	0.7%
Hazard ratio	9.0

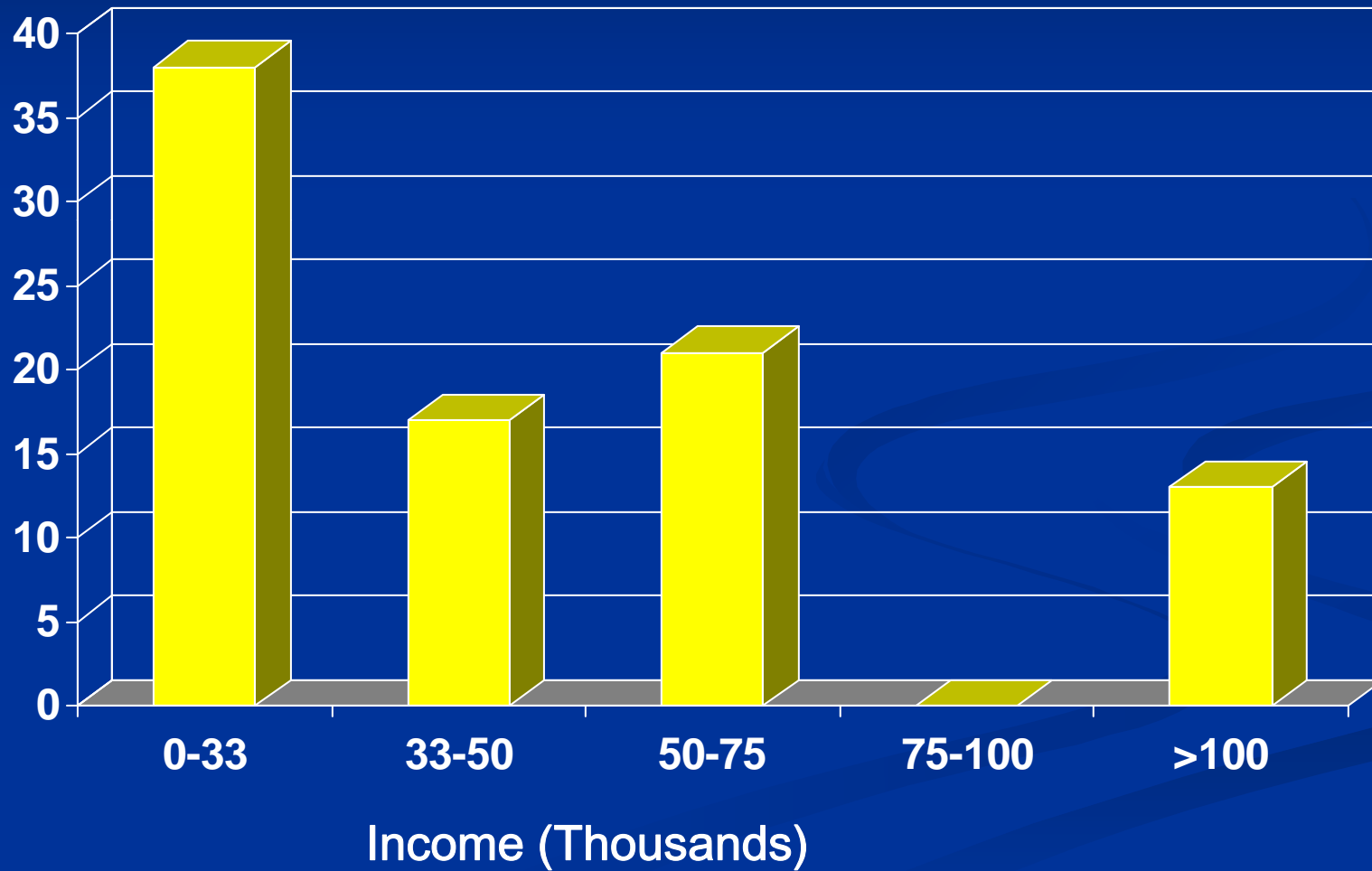
Characteristics of those who stopped

- Older
- Lower education level
- Single
- Avoid health care due to cost
- Preexisting cardiac disease or anemia
- Less discharge teaching
- Less cardiac rehabilitation referrals

Education Level



Patient Demographics



Fair PharmaCare Plan

Net Annual Family Income	Family Deductible	Portion of Eligible Costs PharmaCare Pays (once deductible reached)	Family Maximum (after which 100% of costs are covered)
Less than \$15,000	None - Government assists you with your drug costs immediately.	70%	Equal to 2% of your net income
Between \$15,000 and \$30,000	Equal to 2% of your net income	70%	Equal to 3% of your net income
Over \$30,000	Equal to 3% of your net income	70%	Equal to 4% of your net income



URGENT: FOR IMMEDIATE PROCESSING
Royal Columbian Hospital – Cardiac Cath Lab

To: Pharmacare
Subject: Special Authority Request for *Clopidogrel (Plavix®)*
Date: _____
Fax to Pharmacare: 1-800-609-4884

Patient Name (first and last): _____

Personal Health Number (PHN): _____

Indication for Clopidogrel (Plavix®) use:	Please provide details where appropriate:
<input type="checkbox"/> Documented post-Percutaneous Coronary Intervention	Date of stent:
<input type="checkbox"/> Documented post-stent procedure with Drug Eluting Stent	Date of stent:
<input type="checkbox"/> For Hospital-diagnosed Acute Coronary Syndrome (unstable angina or non-ST elevation myocardial infarction PLUS in combination with ASA)	Date:
<input type="checkbox"/> In secondary prevention of coronary, cerebral and peripheral vascular occlusion and embolization where a person has experienced treatment failure on ASA or is intolerant to ASA (Please indicate reason for use)	Reason for use: <input type="checkbox"/> ASA failure <input type="checkbox"/> Intolerant to ASA

Changes in Medication

*** Physician, please complete for each drug: DISPENSE REFILL

MEDICATIONS AT DISCHARGE	DISPENSE Y/N	Mitte	x	REFILL #
AMIODARONE 200 MG DAILY	[Y]		x	
ATORVASTATIN CALCIUM 80 MG at 1700 DAILY <u>has at home.</u>	[N]		x	
CARVEDILOL 6.25 MG BID <u>NEW</u>	[Y]	<u>60</u>	x	<u>2</u>
CLOPIDOGREL 75 MG DAILY <u>has at home</u>	[N]		x	
FUROSEMIDE 120 MG BID'	[Y]	<u>1 month</u>	x	<u>3</u>
GLICLAZIDE 160 MG BID CC <u>has at home</u>	[N]		x	
METFORMIN 1000 MG BID AC' <u>? NEW</u>	[Y]	<u>1 month</u>	x	<u>3</u>
RAMIPRIL 10 MG BID <u>↑ dose</u>	[Y]	<u>60</u>	x	<u>3</u>
SPIRONOLACTONE 25 MG DAILY <u>NEW</u>	[Y]	<u>30</u>	x	<u>3</u>
ESPIRONOLACTONE 25 MG DAILY	[]		x	

D/c Bisoprolol

Effect of the Discharge Process on Medication

- 46% of medication errors occur on admission or discharge when new orders are written for a patient (Bates et al. JAMA 1997;277:307-11)
- 20% of patients experience an adverse event at discharge (Forster et al. Ann Intern Med 2003;138:161-7)
- Lack of patient information is the third most common system failure associated with ADEs (Leape et al. Arch Intern Med 2003;163:1461-6)

Premier Registry

- 1521 patients with AMI
- Adherence one month after hospitalization
 - ASA
 - Beta blockers
 - Statins

Premier Registry Results

- 1521 patients
 - 12 % discontinued all 3 medications
 - 4 % discontinued 2 medications
 - 18% discontinued 1 medication
- Patients who discontinued use of all medications at 1 month had lower 1 year survival (88.5% vs. 97.7% $p < 0.001$)

Self-reported Adherence

Heart and Soul Study

- 1015 patients with CAD
- “In the past month, how often did you take your medications as the doctor prescribed?”
 - All of the time 100%
 - Nearly all of the time 90%
 - Most of the time 75%
 - About half the time 50%
 - Less than half the time 25%

Heart and Soul Study

- Non-adherence identified as 75% of the time or less
- Results
 - 1015 patients
 - 8.2% nonadherence
 - 14.4 % developed cardiovascular events
 - Non-adherent patients more likely to develop cardiovascular event (22.9% vs. 13.8% $p=0.03$)
- Conclusion
 - Self reported nonadherence independent risk factor for cardiovascular events

Case Continued

■ Baseline

- ASA, Carvedilol, Ramipril, Rosuvastatin, Clopidogrel, Amlodipine, Nitrospray, NRT, Diuretic
- Medications filled on day of discharge except carvedilol

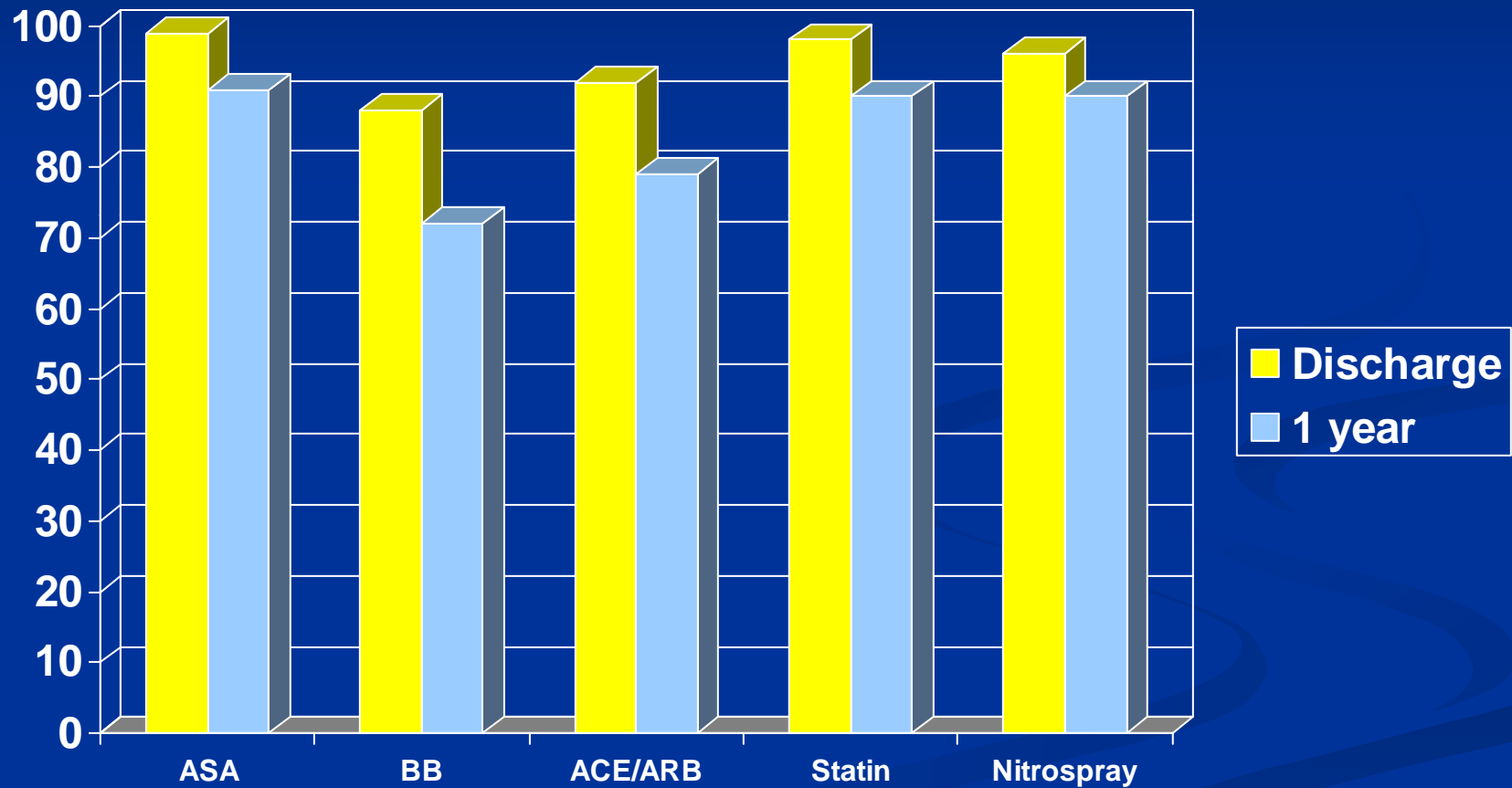
■ 3 month

- Nearly all of the time
- Sometimes misses HS doses
- 15/May 30 day supply
- 18/June 30 day supply
- 01 August 90 day supply

Case Continued

- 6 month
 - Nearly all of the time
 - ASA, carvedilol, ramipril, rosuvastatin (changed to am), amlodipine, nitrospray
 - Stopped diuretic due to gout
- One year
 - Less than half of the time
 - Nothing filled since August

Medications at ONE Year



Themes in Adherence

- Interventions do have an impact on adherence
- Medication taking is a behavior that must be learned
- Physicians and other health care providers are generally not well trained in behavioral modification techniques and require training in adherence improving strategies
- Often times, little time is spent on encouraging adherence
- Very few incentives exist within the health care delivery system to support health care practitioners address poor adherence

Strategies to Improve Adherence

- Provide information to the patient (provide risk/benefit)
- Motivate the patient to take the medication (risk/benefit)
- Collect information about noncompliance
- Modify the drug regimen to aid in compliance

What Do Patient's Want?

- Indications (and benefits)
- Side effects
- Interactions
- Duration
- Dosage regimen
- They need to be well informed, but they also need to know that there is more benefit than risk and the risk is manageable

Adherence Strategies and Their Effectiveness

Strategy	Median Effectiveness
Adherence aides	6%
Refill and follow-up reminders	6%
Dosage regimen simplification	15%
Education	22%
Comprehensive management	25%

Empowerment

- Clinical trials have proven that cardiovascular drugs improve morbidity and mortality
- Medication:
 - Not widely used
 - Prescribed in suboptimal doses
 - Effect is further diminished by nonadherence
- Healthcare providers have the ability to improve survival

Thank You