Antihypertensive Drug Use in VA

A National Analysis of Medication Use Patterns and Trends

Julio Lopez, Pharm.D., Joy Meier, Pharm.D., PA-C,
Fran Cunningham, Pharm.D., David Siegel, M.D.

VA Northern California Health Care System and
Pharmacy Benefits Management Strategic
Healthcare Group, Hines, IL

Hypertension Treatment

- VA Medical Advisory Panel guidelines closely parallel JNC- released in 1996
- Do guidelines have an effect on hypertension treatment?
  - Medication use does not reflect recommendations (Siegel D, Lopez J JAMA 1997;278:1945-8)
- VA instituted performance measures (Jha AK et al NEJM 2003:348:2218-27)

Hypertension Treatment

- Some VA's have instituted special programs to improve hypertension management
  - Guideline implementation teams
  - Academic detailing
  - Provider profiling
  - Real-time computer reminders

Objective

- To evaluate medication use patterns in VA using national pharmacy databases
- To compare and trend utilization between 1995 and 2002
- To elucidate regional differences in medication use

Methods

- Data on all medications dispensed from VA pharmacies is transmitted monthly to a central computer at VA Hines, IL
- Data for VA drug classes for beta blockers, thiazide diuretics, diuretic/potassium sparing diuretics, calcium antagonists, ACE inhibitors, ARB's and combinations
- Data elements: drug name, strength, VA class, Veteran's Integrated Service Network (VISN), number of prescription fills, quantity dispensed

Methods

- Treatment days aggregated by drug "chemical" and then by drug class
- Data also analyzed by VA geographical region
- Data is presented by fiscal year – October through September

Results

- 720 million treatment days in 2000 and over 1 billion in 2002 – a 45% increase
- In 2000 there were 1.167 million patients with diagnosis of HTN; for 2002 this increased to 1.597 million – a 37% increase
- 4.537 million veterans in VA in 2002

Drug Rankings FY 2002

Drug	Tx Days	Rank
LISINOPRIL	258,034,313	1
ATENOLOL	144,632,404	2
HYDROCHLOROTHIAZIDE	141,139,129	3
FELODIPINE	99,905,614	4
METOPROLOL	88,354,378	5
FOSINOPRIL	80,642,875	6
DILTIAZEM	57,679,765	7
NIFEDIPINE	43,208,736	8
VERAPAMIL	33,179,937	9
AMLODIPINE	20,546,957	10

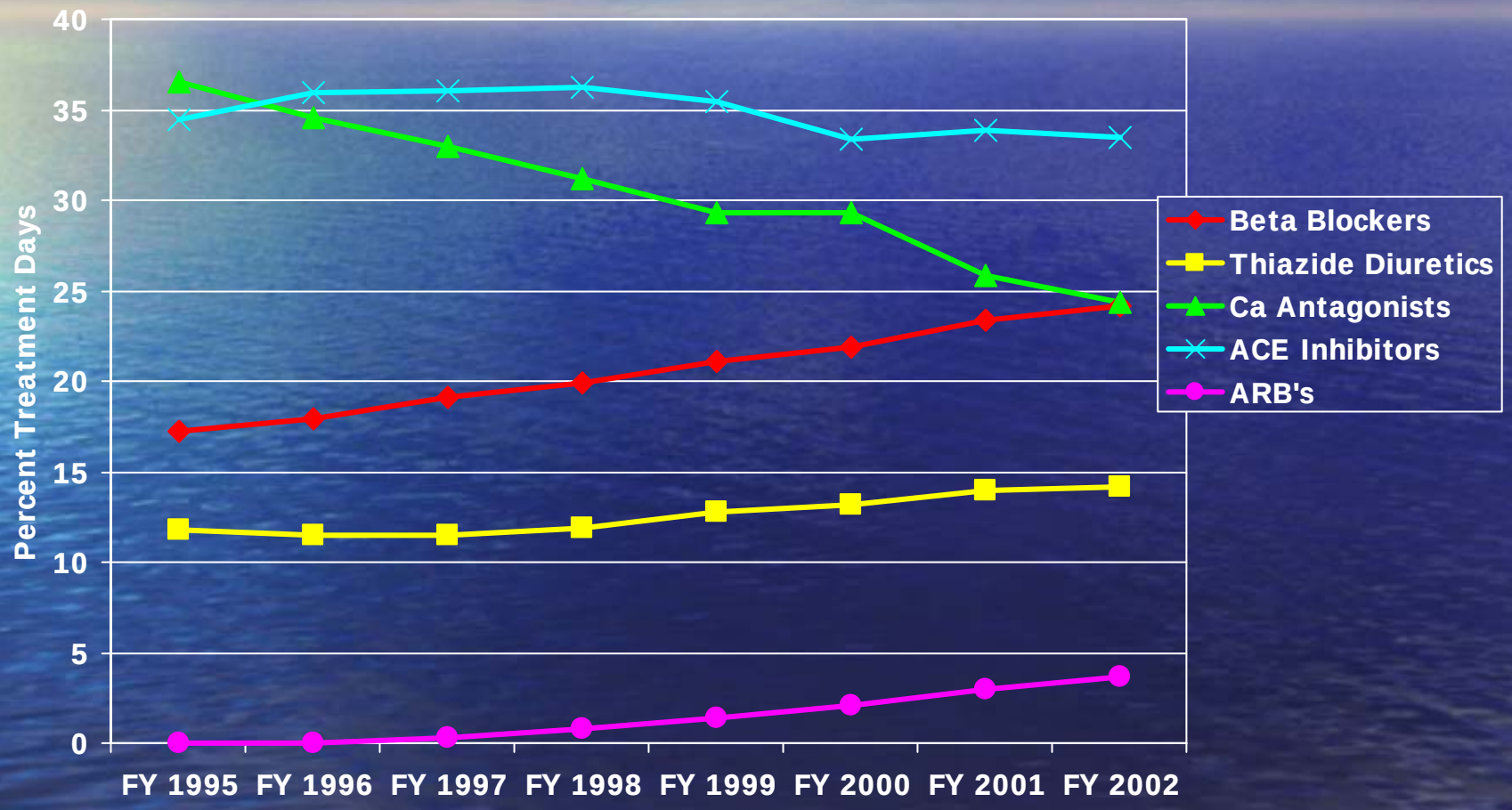
Results

Tx Days	FY 2000	FY 2001	FY 2002
ACE Inhibitors	240,740,016	289,057,353	350,539,329
Ca Antagonists	210,948,370	219,835,030	254,778,286
Beta Blockers	157,945,229	199,248,394	252,981,666
Thiazide Diuretics	95,166,245	119,739,174	148,769,509
ARB's	15,066,503	25,348,867	39,189,187
Total Tx Days	719,866,364	853,228,818	1,046,257,978

Antihypertensive Drug Classes

Percents	FY 2000	FY 2001	FY 2002
ACE Inhibitors	33.4%	33.9%	33.5%
Ca Antagonists	29.3%	25.8%	24.4%
Beta Blockers	21.9%	23.4%	24.2%
Thiazide Diuretics	13.2%	14.0%	14.2%
ARB's	2.1%	3.0%	3.7%
ACE/ARB	35.5%	36.8%	37.2%

Antihypertensive Drug Use Trends



VISN Analysis

Drug Class	Highest	Lowest
Beta Blockers	VISN 1 (28.6%)	VISN 7 (19.9%)
Thiazide Diuretics	VISN 18 (16.5%)	VISN 3 (11.2%)
Ca Antagonists	VISN 8 (28.1%)	VISN 19 (20.1%)
ACE Inhibitors	VISN 2 (38.3%)	VISN 12 (28.9%)
ARB's	VISN 11 (5.5%)	VISN 8 (1.5%)

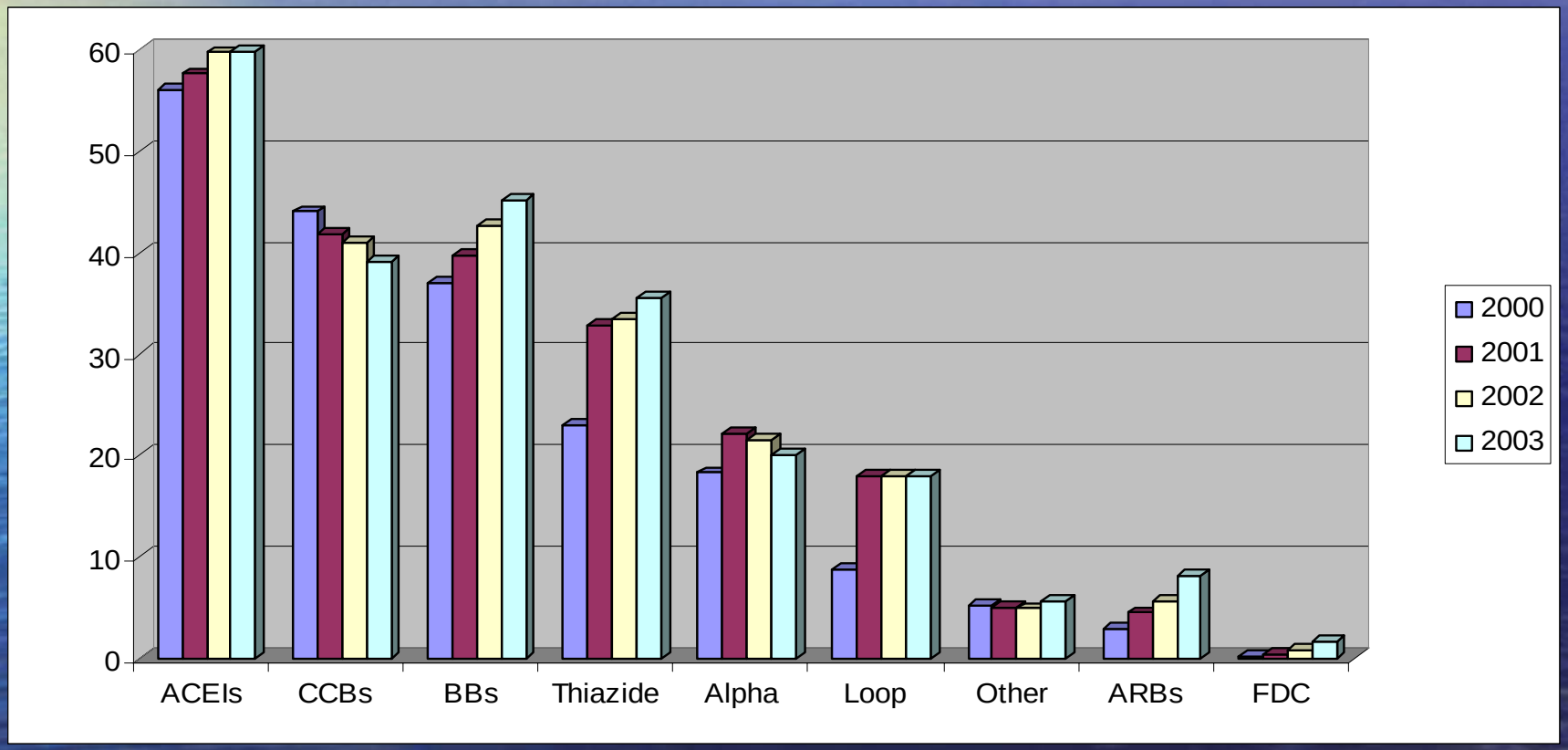
Antihypertensive Medication Use and Blood Pressure Control in VHA

VA Pharmacy Benefits Management-Strategic Healthcare Group
PBM Pharmacoepidemiologic Outcomes Research
VA Hypertension Field Advisory Committee

March 2004

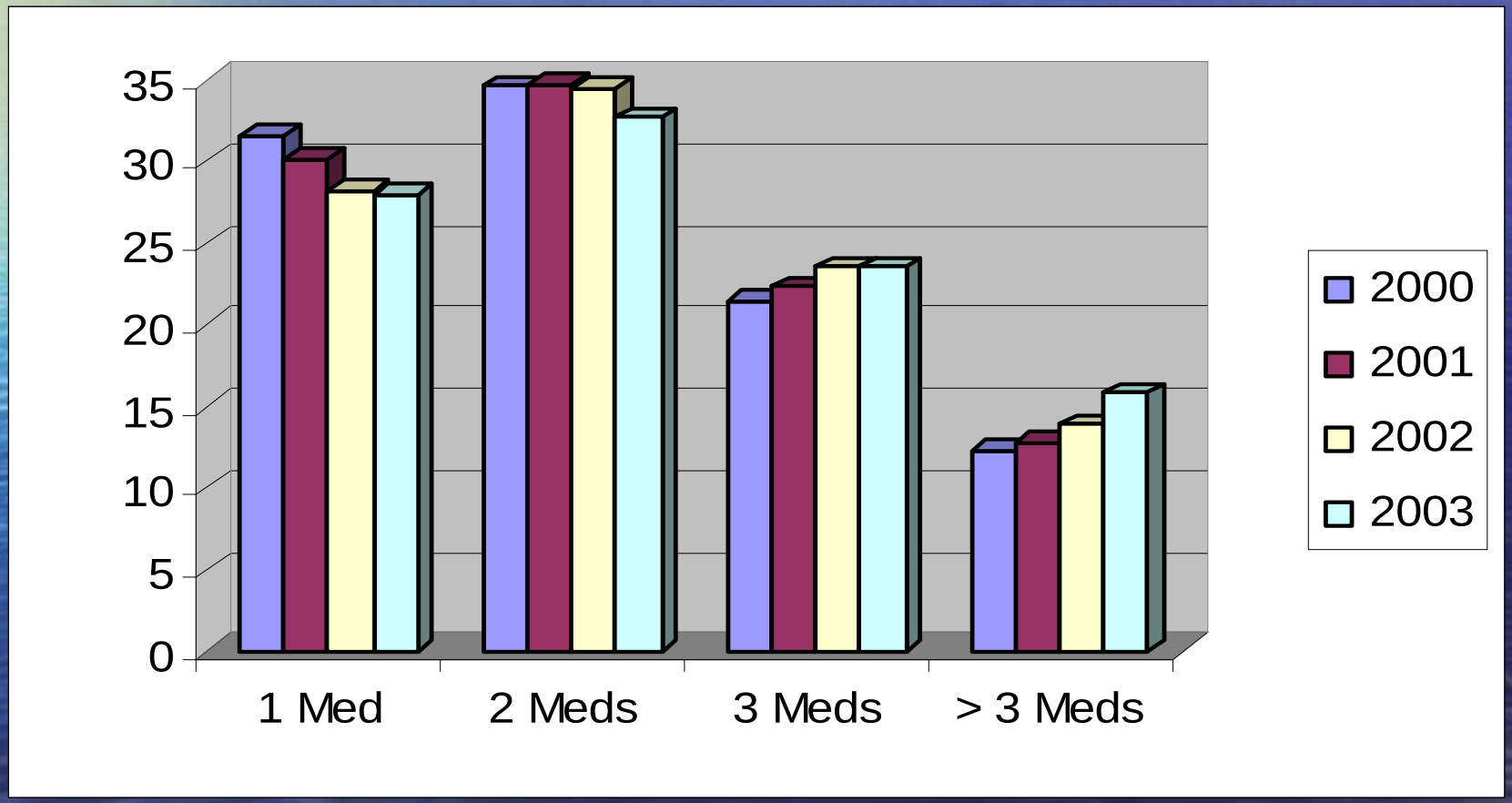
Antihypertensive Medications

Patient Utilization



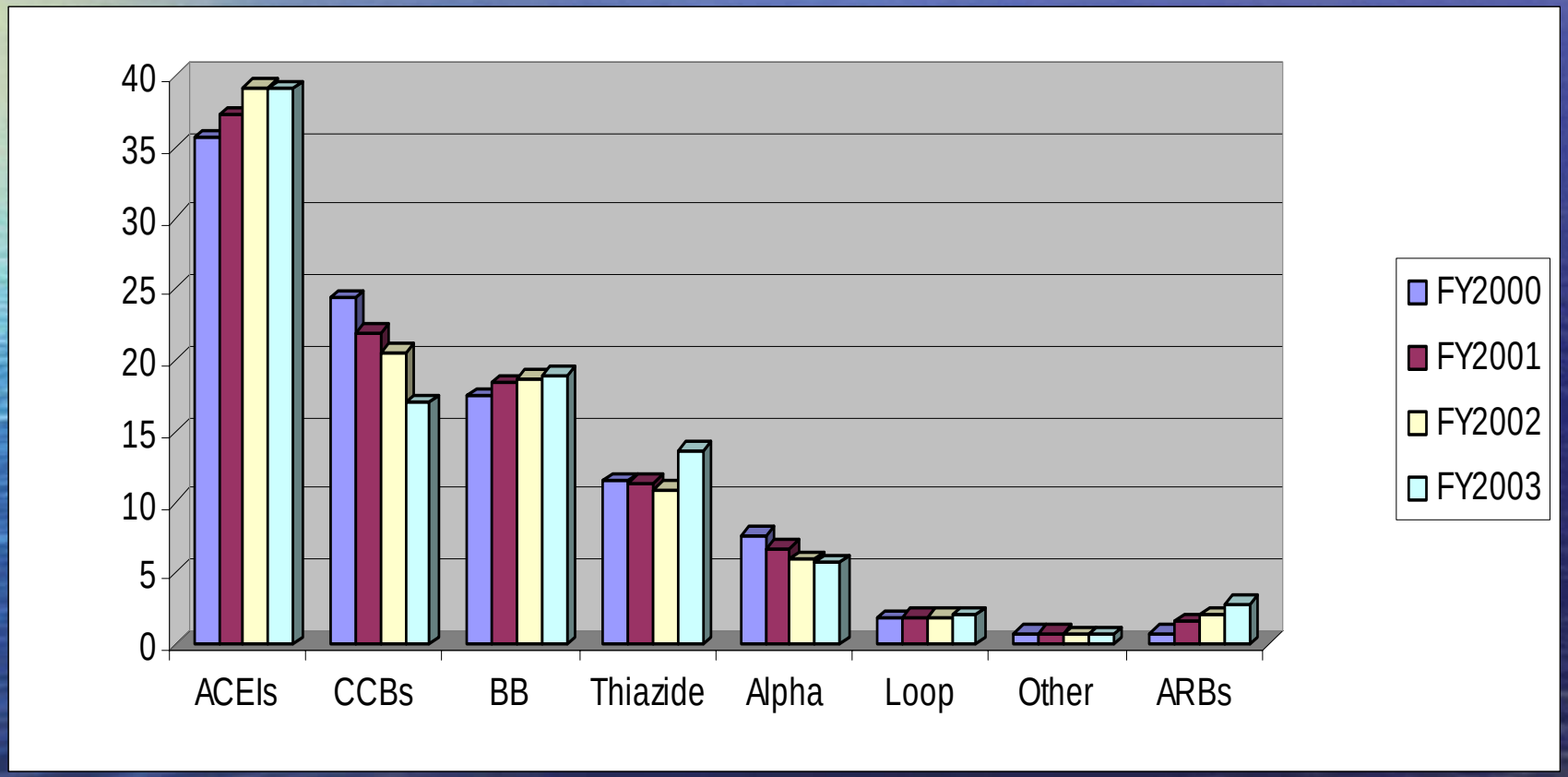
Antihypertensive Medications

Number Prescribed



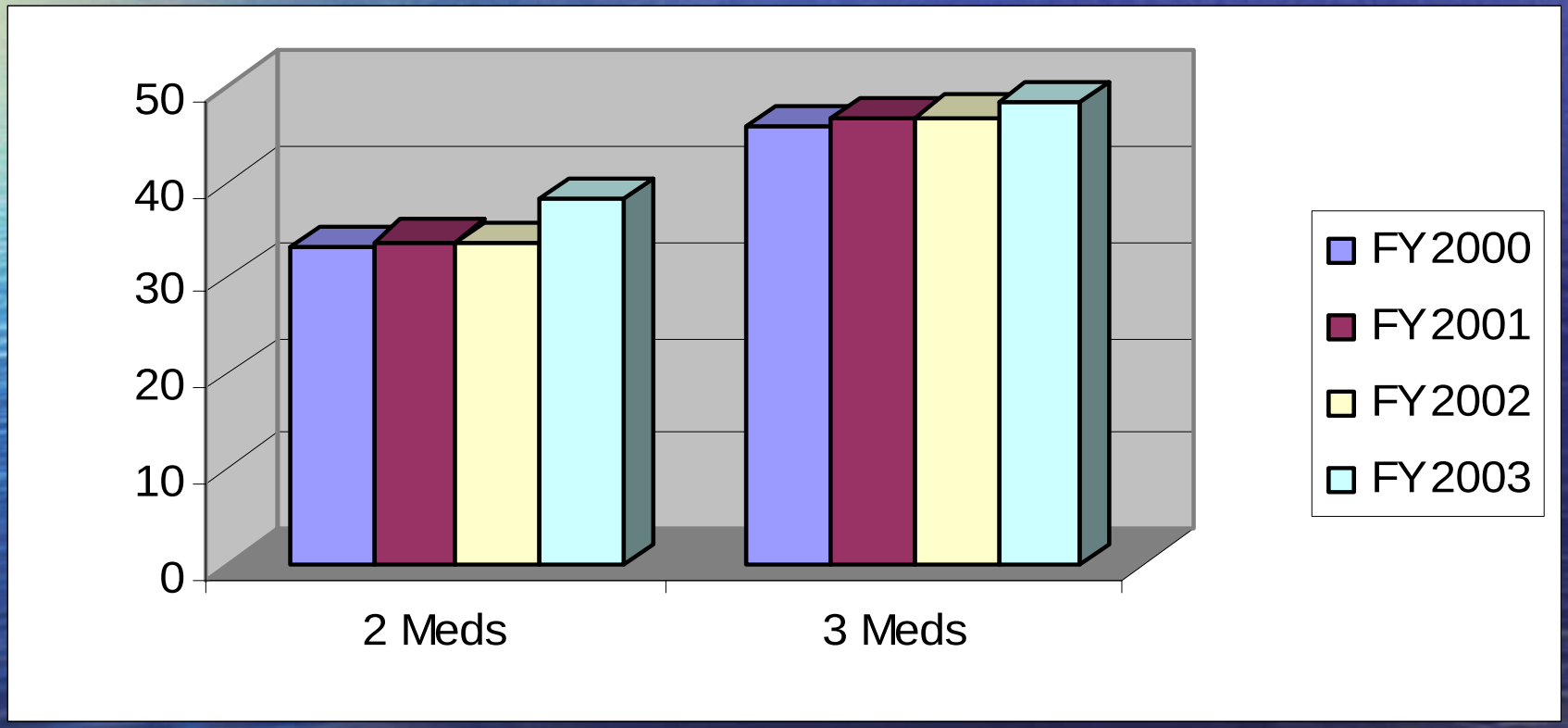
Antihypertensive Medications

Patients on Monotherapy

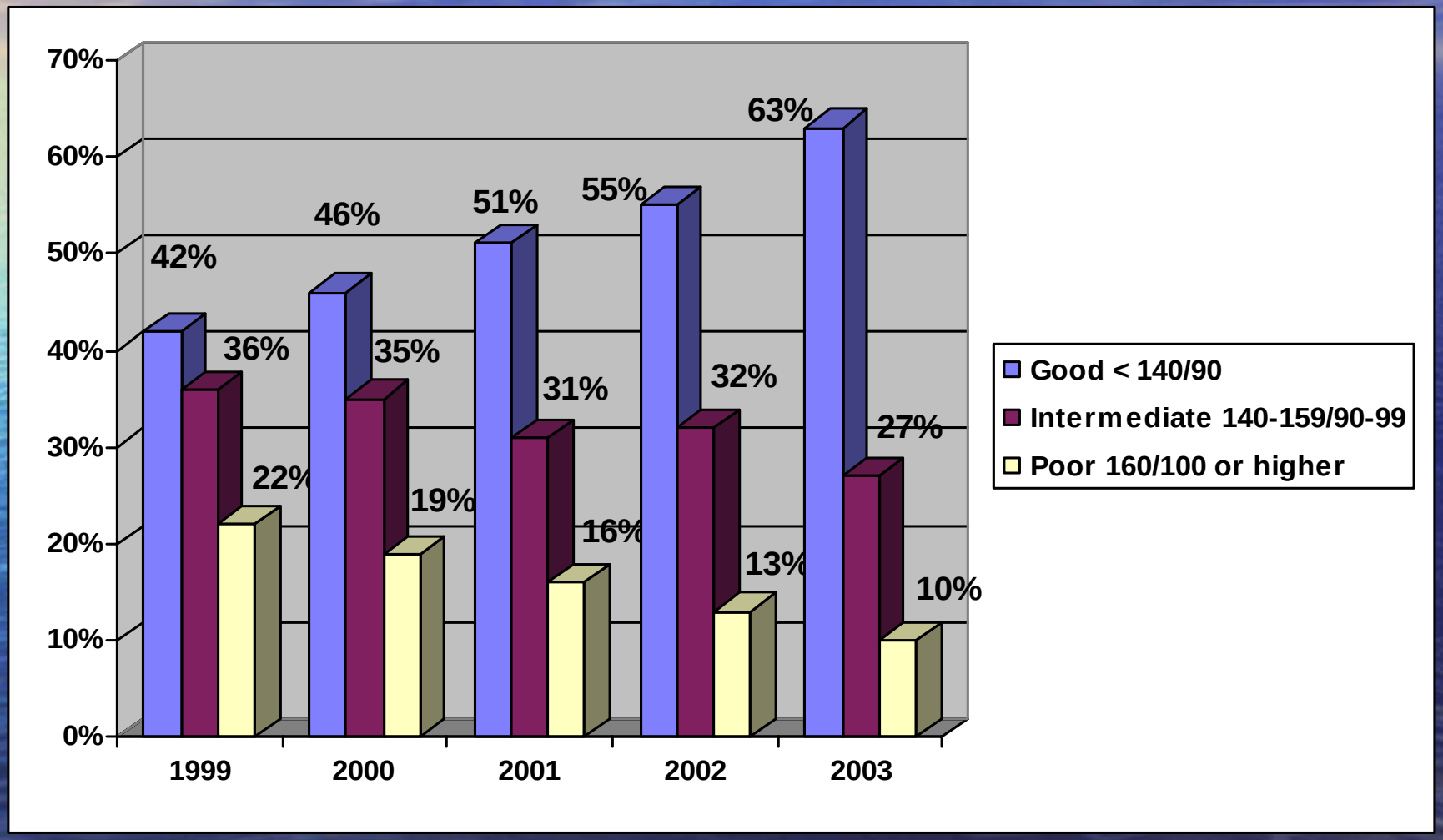


Antihypertensive Medications

Percent on Thiazide Diuretic



BP Control in VHA



Summary

Utilization Data

- ACEI most common: 60% patients
- ~ 70% on ≥ 2 RX
- Thiazide:
  - Prescribed 35-37% patients
  - Monotherapy: 11% 2002; 14% 2003
  - Combination: 38% 2-RX; 48% 3-RX

Conclusion

- ACEI's most common cardiovascular drugs in VA
- Increase in beta-blocker and thiazide use
- Decrease in calcium antagonist use correlated with increase in beta-blocker use
- Greater adherence to hypertension treatment guidelines
- Thiazide use remains low despite guideline recommendations
- Regional variation

Questions?