



Explaining the decline in coronary heart disease mortality in the Czech Republic between 1985 and 2007

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EUROPREVENT, Prague, 5.5.2010.

Standardized mortality / 100 000

Czech Republic 1985 - 2008

Male	1985	2008	△ %
Total mortality	1590	966,5	- 39
Cardiov. diseases (IX)	850,4	437,1	- 49
CHD (I20-25)	438,8	227,3	- 48
Cerebrov. dis. (I60-69)	252,2	86,5	- 66
Female			
Total mortality	949,6	576,7	- 39
Cardiov. diseases (IX)	551,7	292,3	- 47
CHD (I20-25)	224,1	137,4	- 39
Cerebrov. dis. (I60-69)	203,5	70,8	- 65

Cardiovascular death

Czech Republic, 2008

	<i>Males</i>	<i>Females</i>
CV	23 530	28 750
CHD	12 240	13 600
Cerebrov.	4 615	7 070

CV deaths, prevented or postponed by CV therapy, 1990-2001, compared to 1989

Bruthans J., Report on Development of CV Diseases in the Czech Republic after 1989. Galen, Prague 2001

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
thrombolytics	31	15	6	25	18	29	36	35	43	35	31	23
ASA						221	988	1470	1912	2227	2306	2415
diuretics	3				8	12	27	18	39	57	75	92
beta-blockers	77				130				148	305	404	748
ACEI	3	3	30	97	218	392	593	925	1091	1327	1366	1740
statins	0	0	0	1	4	11	36	58	82	136	140	218
amiodaron		5		3	14	26	36	65	61	87	122	125
PTCA	3	8	19	32	42	68	134	202	258	303	363	475
CABG		1	4	18	27	67	101	134	153	167	180	212
other cardiac surgery		1	5	15	46	29	37	40	41	43	44	52
deaths prevented	117	33	64	191	507	855	1988	2947	3828	4687	5031	6100
decrease in CV mort. (abs)		2354	4788	5856	6710	5891	8697	8508	11445	11556	13650	14338

Sources of Czech IMPACT model data

- **IHD mortality, morbidity and hospitalization data:** *Institute for Medical Information and Statistics*
- **Drug consumption data:** *State Institute for Drug Control*
- **Food consumption, nutrition patterns:** *Czech Bureau of Statistics*
- **CV risk factors:** *Czech MONICA and post-MONICA study, Dept. of Preventive Cardiology, Institute for Clinical and Experimental Medicine, Prague*

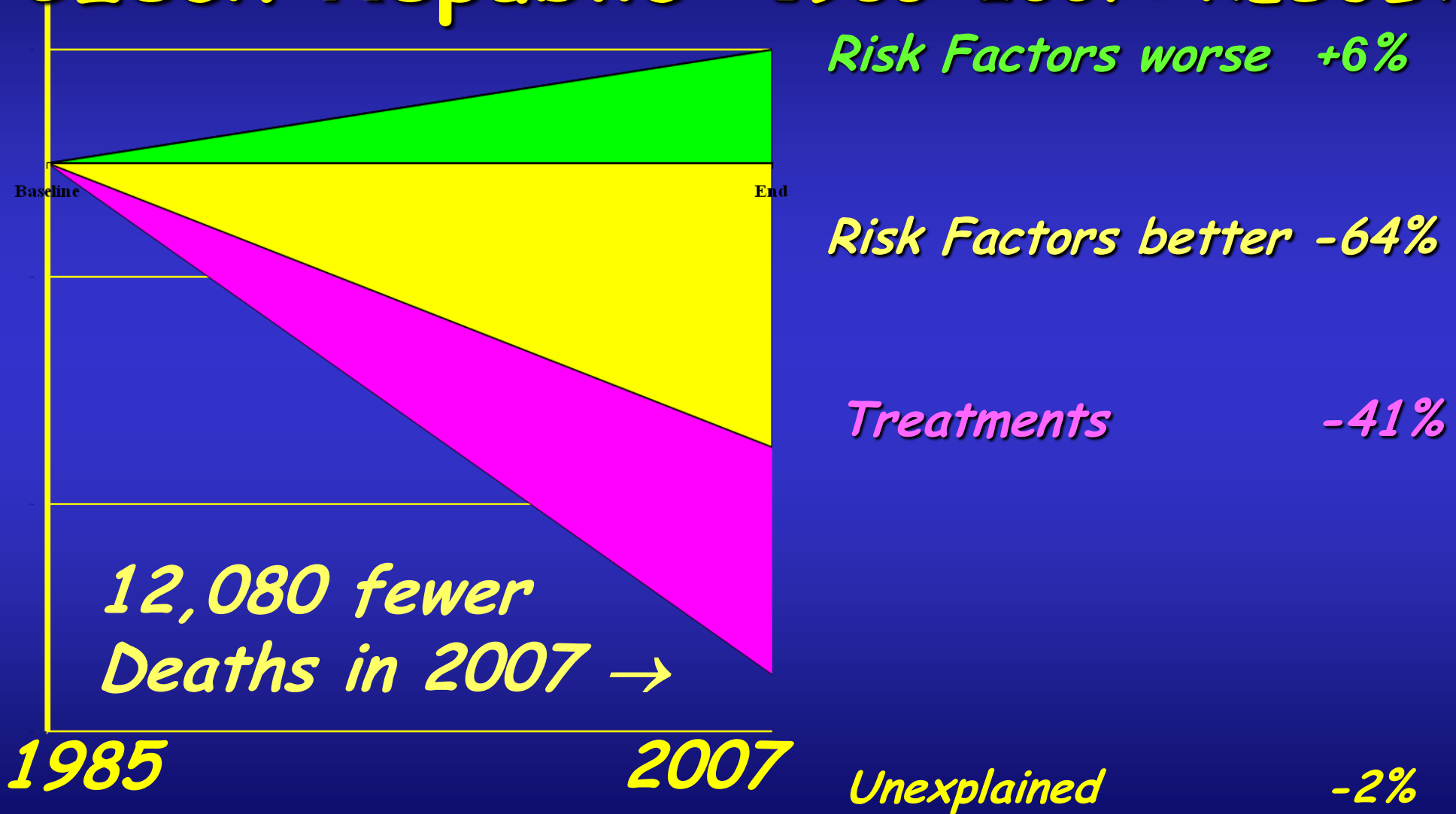
Sources of Czech IMPACT model data

- **AMI, NAP, PCI, ACBG** : *Czech registers of AMI, PCI, cardiosurgery, Czech Societies of Cardiology and Cardiosurgery*
- **Heart failure, AP – community and hospital prevalence and treatment**: *Institute for Medical Information and Statistics*
- **IHD diagnosis and treatment patterns and trends in the Czech Republic**: *Studies carried by authors*

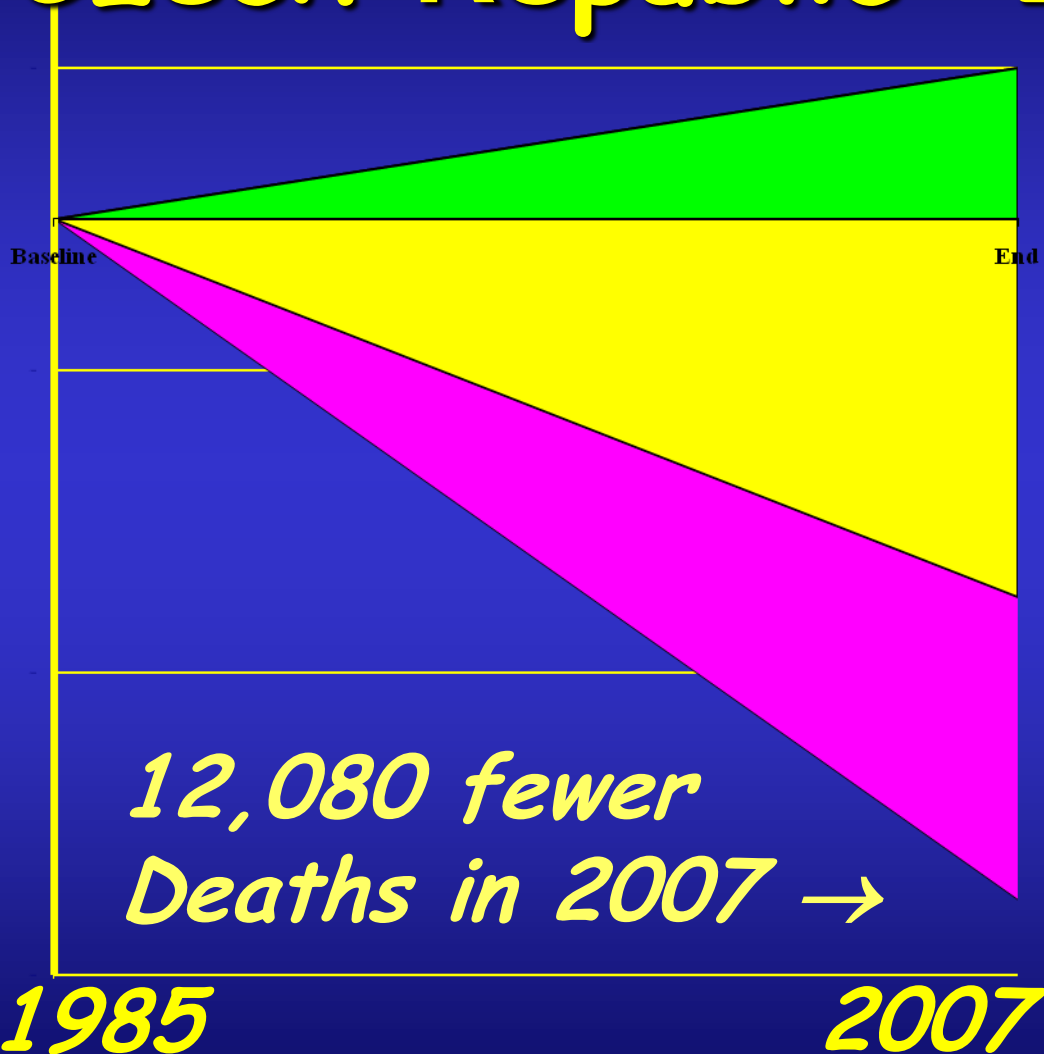
Deaths prevented or postponed (DPPs), CHD

- Indirect age-standardization
- The IMPACT model estimated that there were
- **12 080 fewer CHD deaths** in 2007 than if the 1985 CHD mortality rates had persisted

Explaining the CHD mortality fall in the Czech Republic 1985-2007: RESULTS



Explaining the CHD mortality fall in the Czech Republic 1985-2007: RESULTS



Risk Factors worse +6%

<i>Obesity (increase)</i>	+1%
<i>Diabetes (increase)</i>	+5%

Risk Factors better -64%

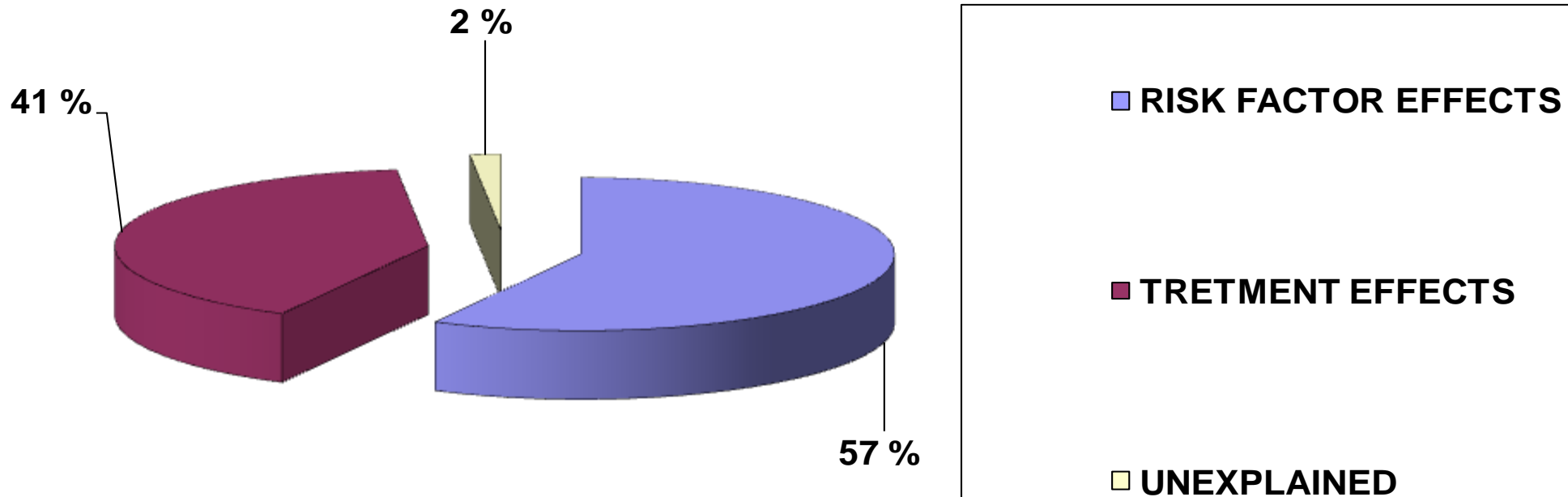
<i>Population SBP fall</i>	-15%
<i>Smoking</i>	-8%
<i>Cholesterol (diet)</i>	-41%

Treatments -41%

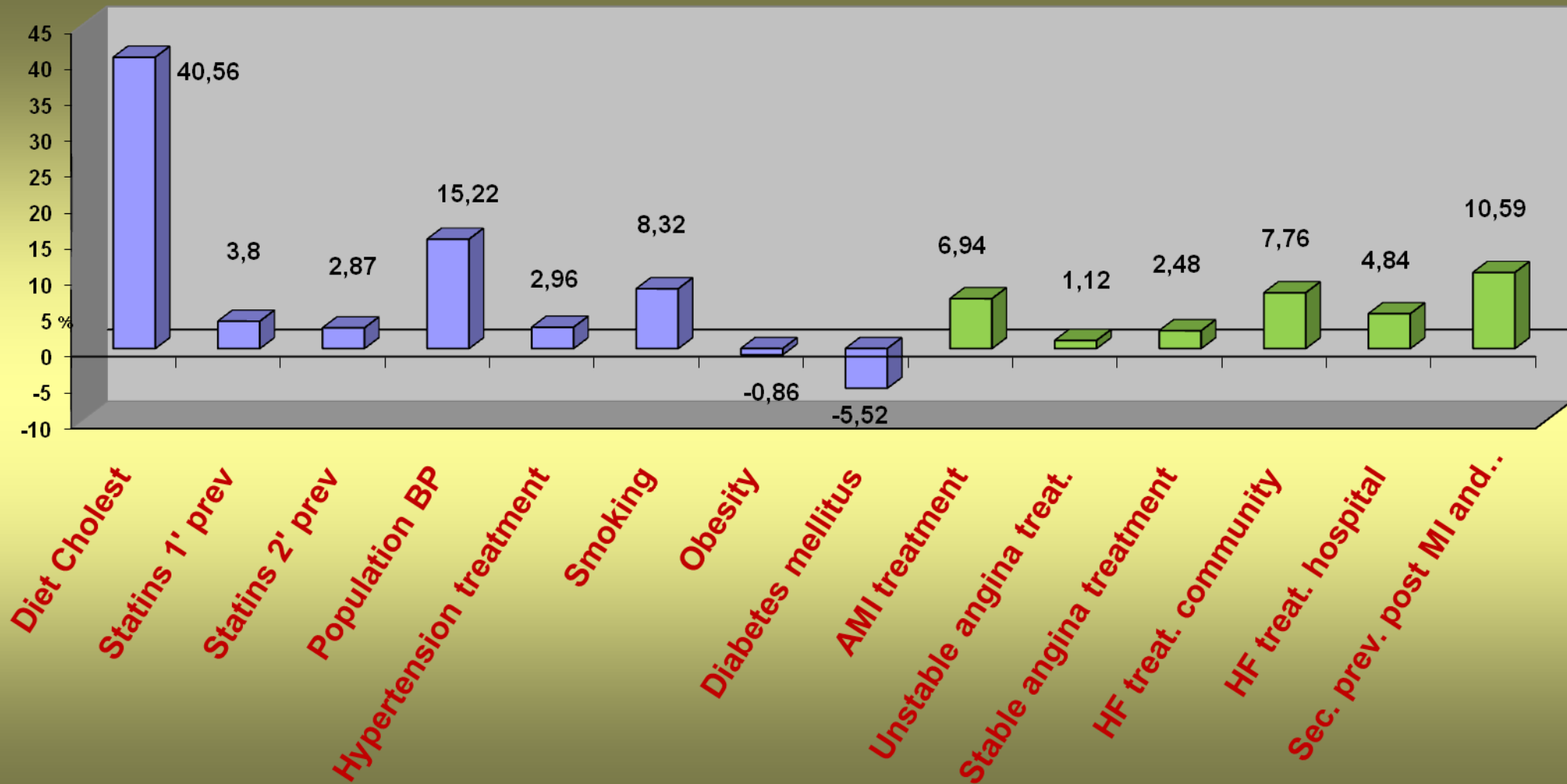
<i>All AMI treatments PTCA etc</i>	-7%
<i>Unstable angina treatments</i>	-1%
<i>Secondary prevention post MI and post revasc./IHD</i>	-11%
<i>Heart failure treatments</i>	-13%
<i>Chronic Angina/IHD: CABG</i>	-2%
<i>Chronic Angina/IHD: ASA</i>	-0,5%
<i>Hypertension treatments</i>	-3%
<i>Statins (primary prevention)</i>	-4%

Unexplained -2%

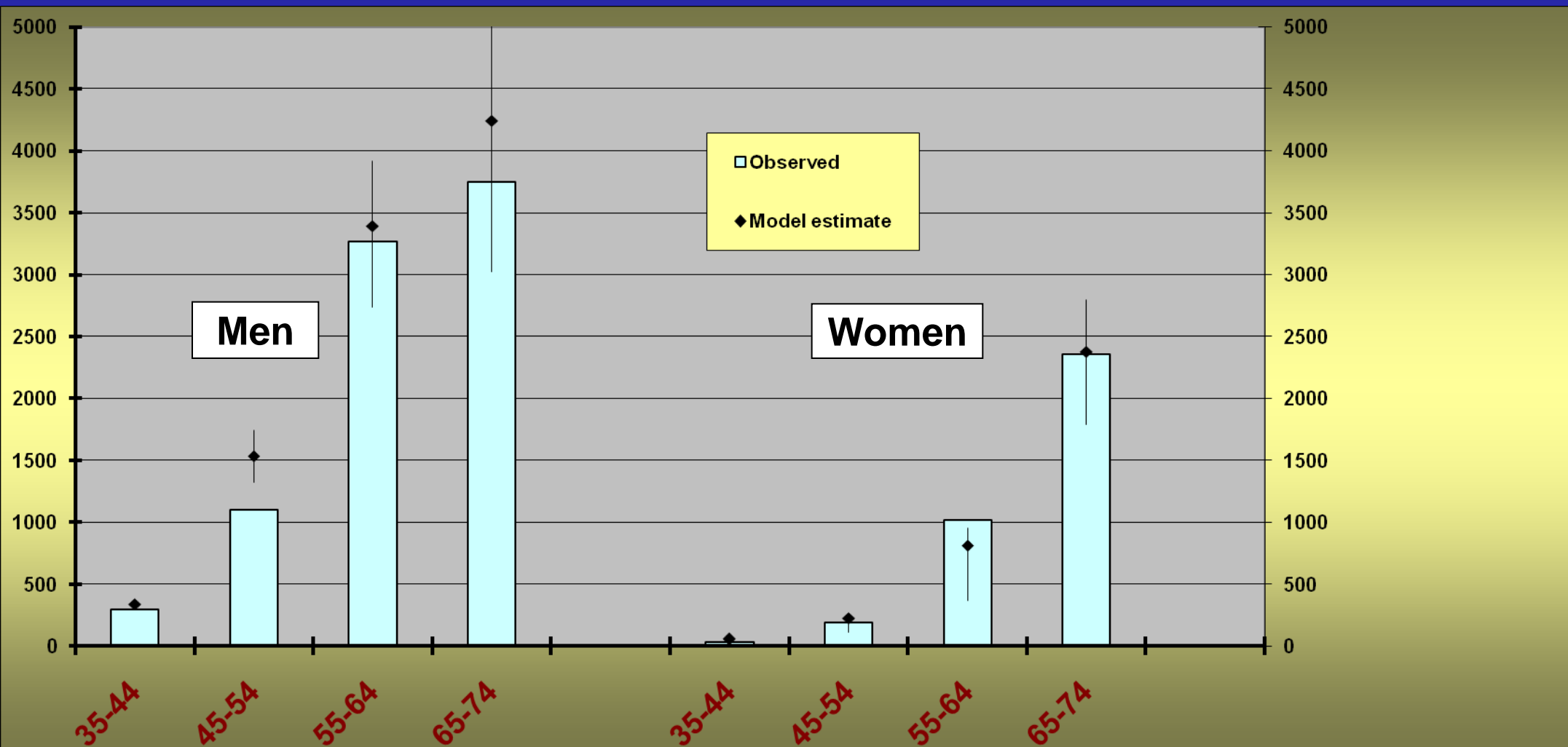
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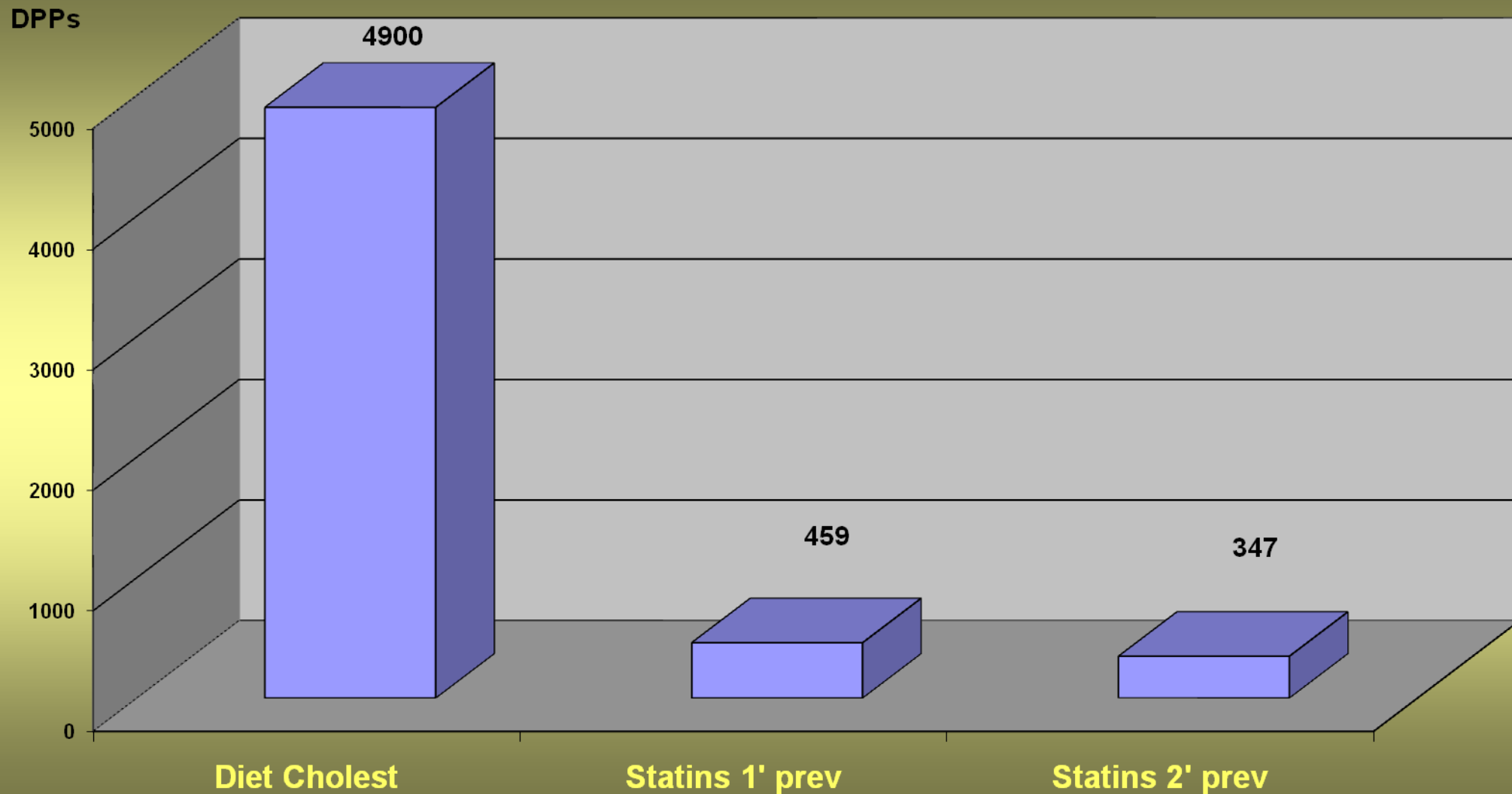
Deaths prevented or postponed by risk factors and treatments changes, Czech Republic between 1985 and 2007 (in %)



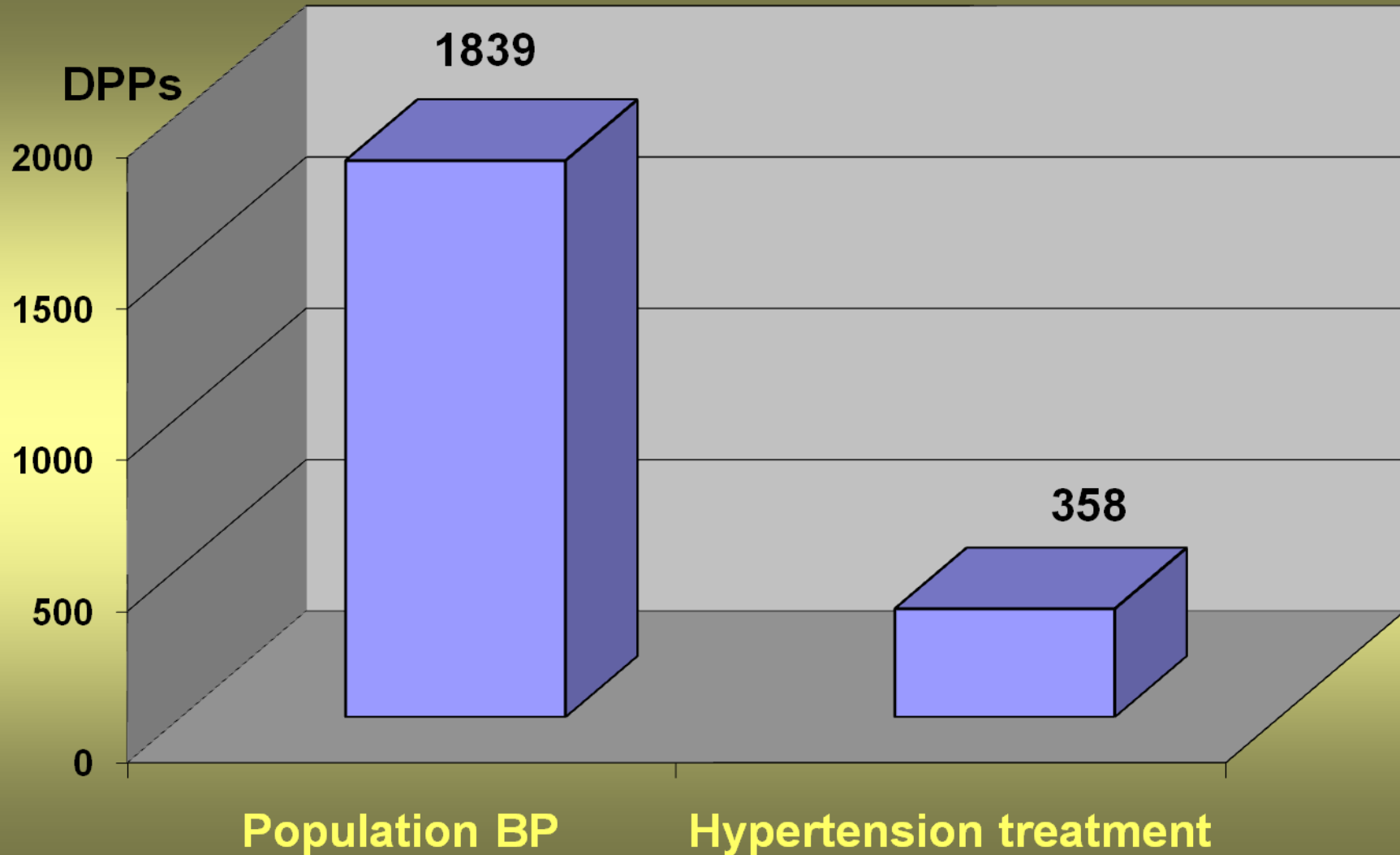
Number of deaths prevented or postponed, Czech Republic between 1985 and 2007. Age – gender strata



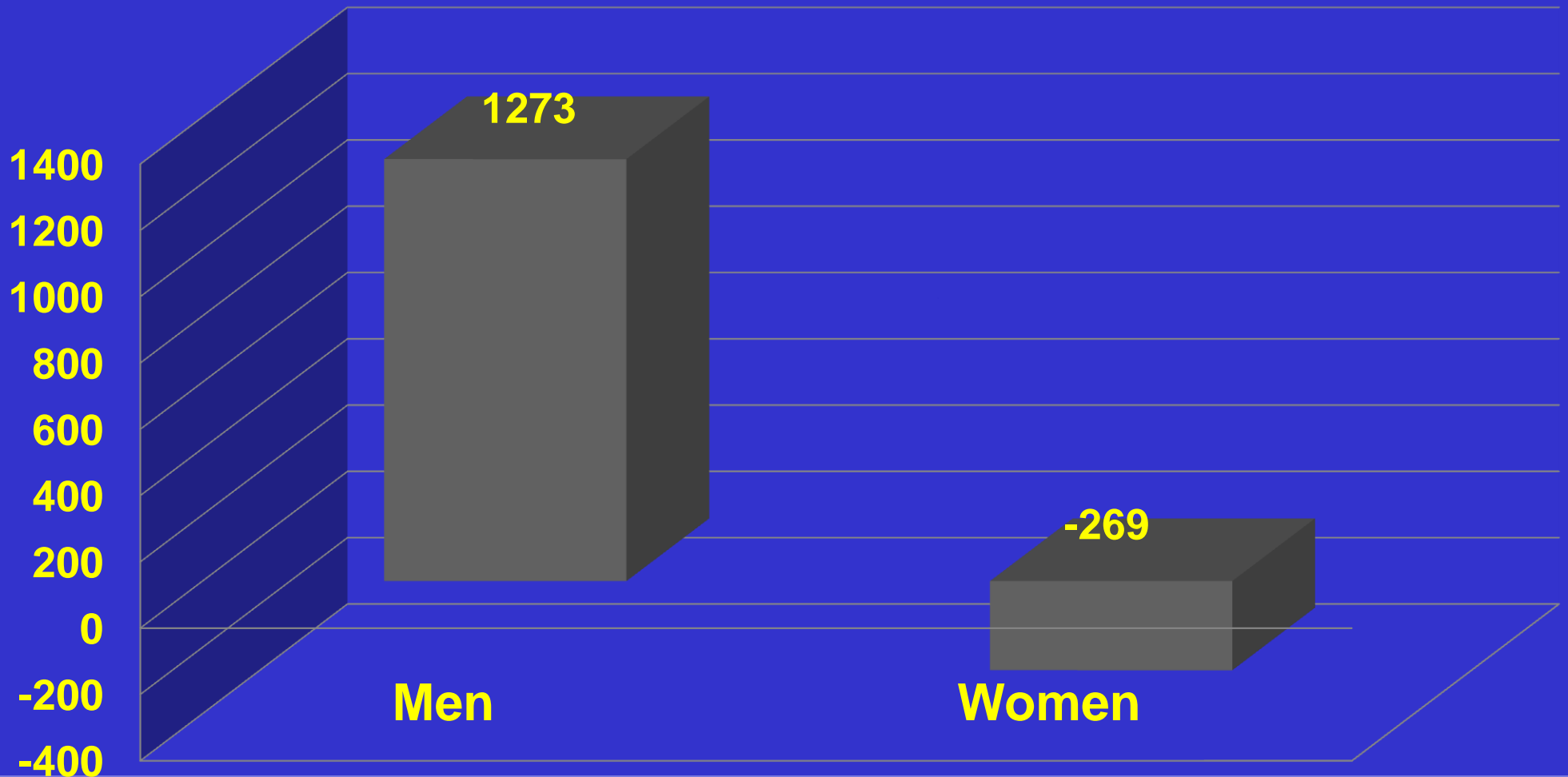
Deaths prevented or postponed - cholesterol



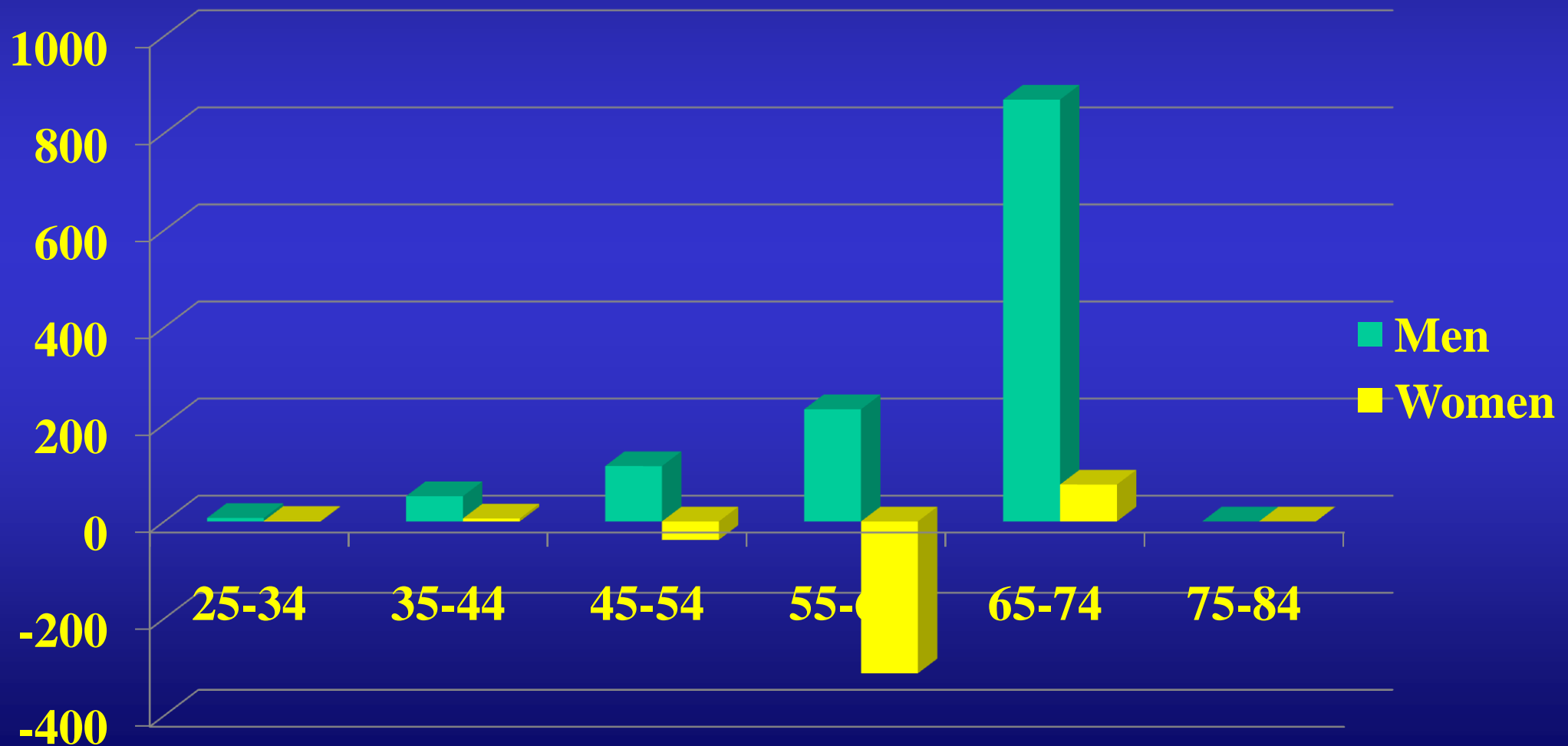
Deaths prevented or postponed – systolic blood pressure



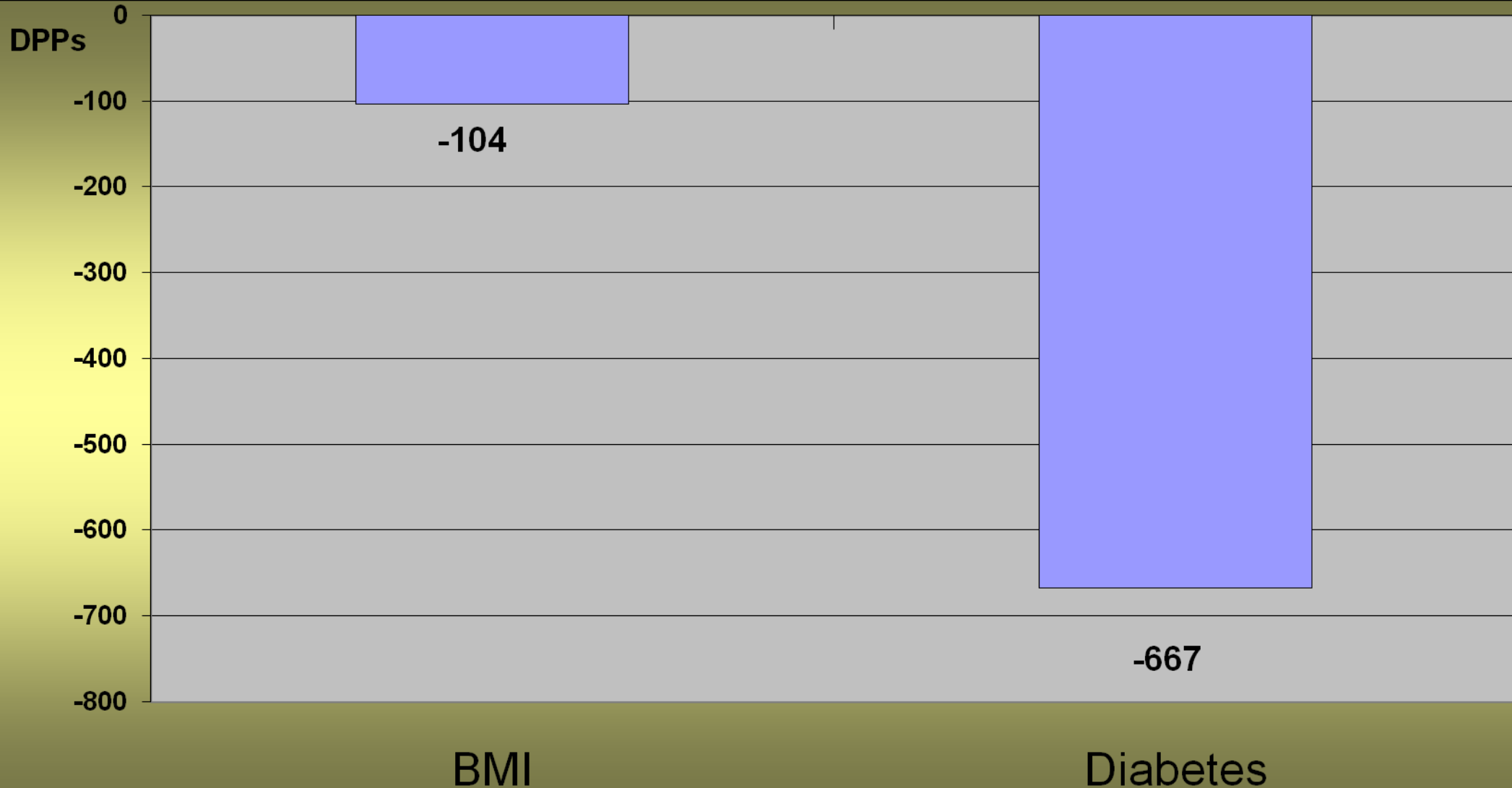
Deaths prevented or postponed - smoking



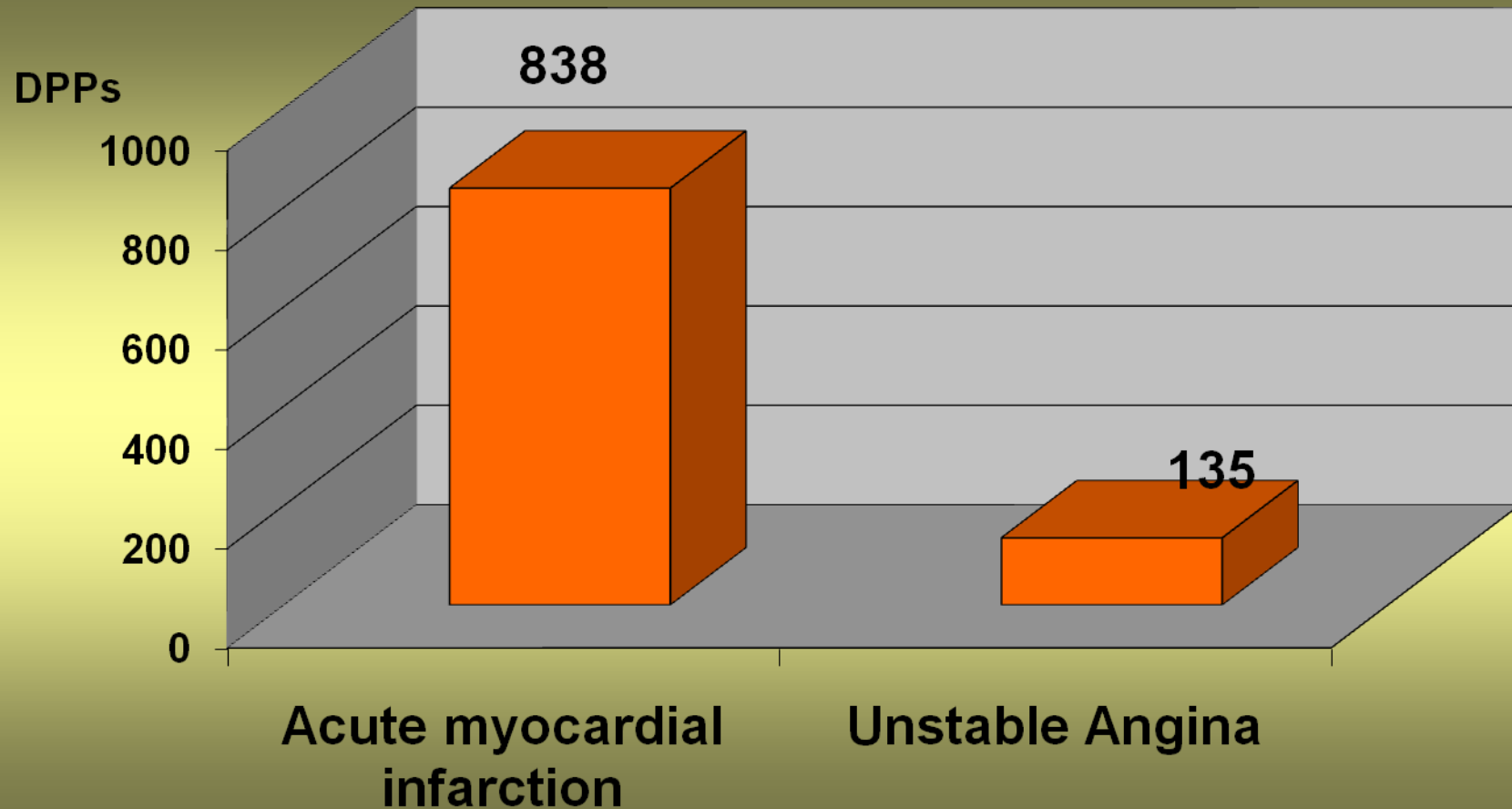
Deaths prevented or postponed - smoking



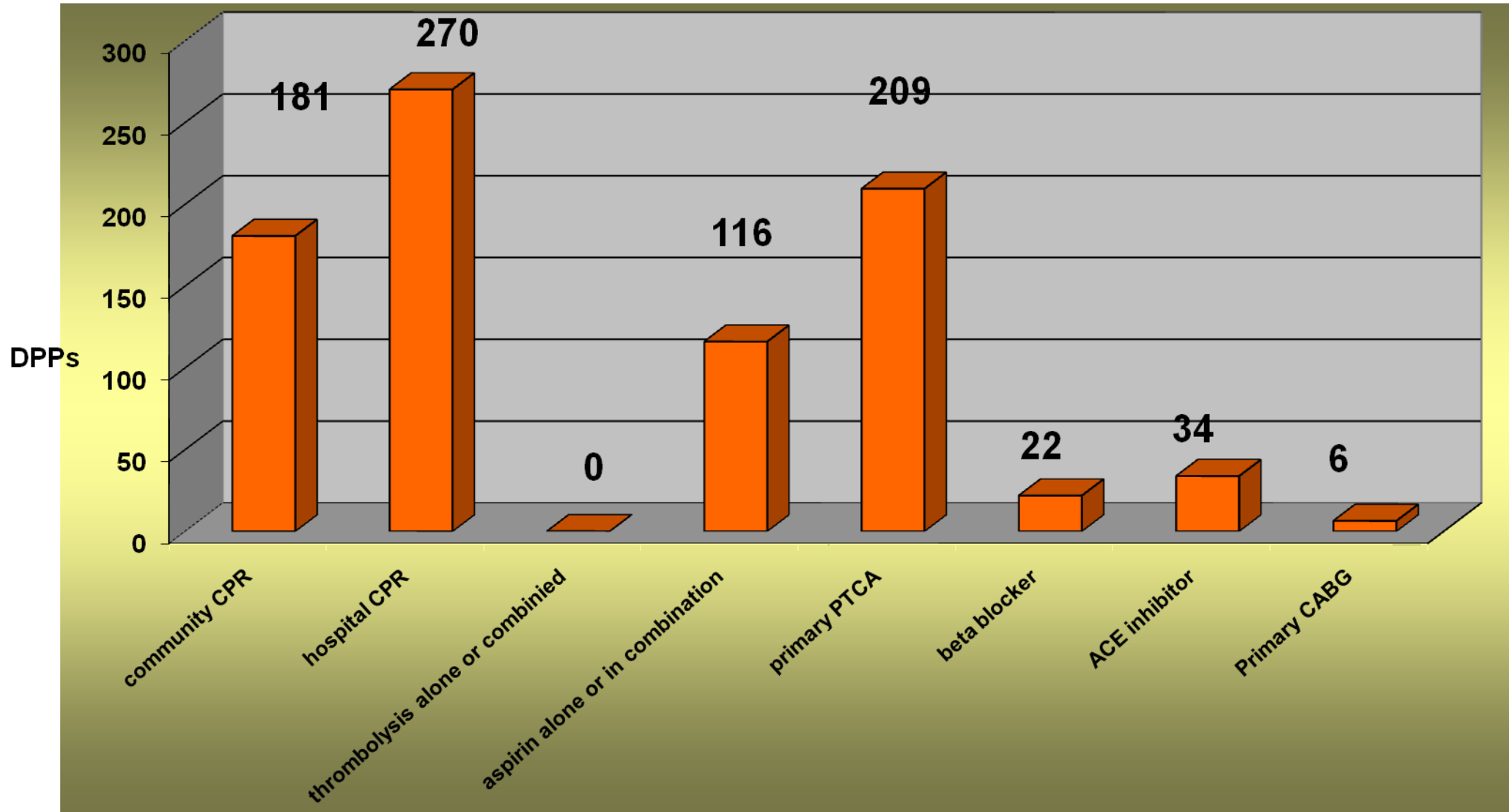
DPPs – obesity, diabetes mellitus



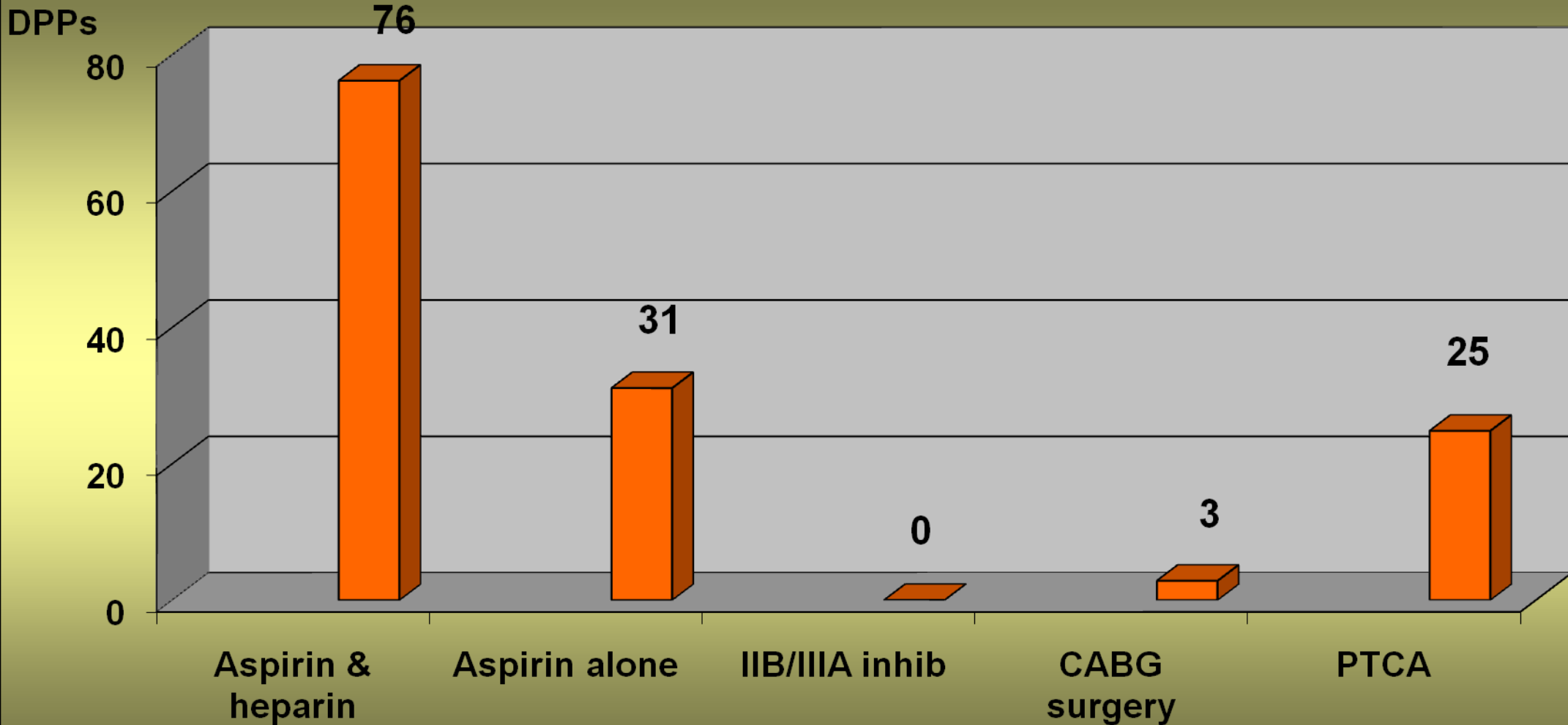
DPPs- treatment of AMI and unstable AP



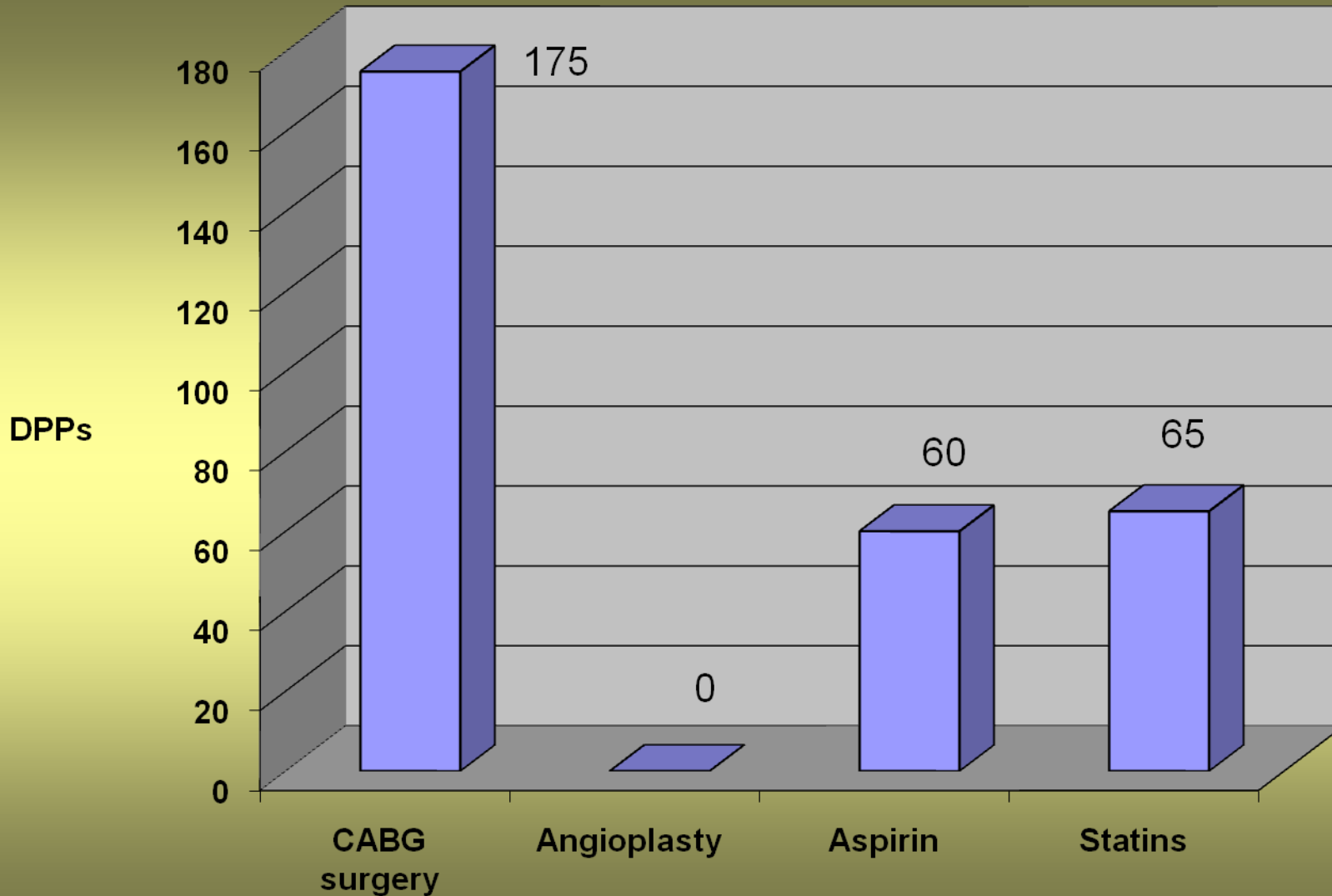
DPPs- treatment of AMI



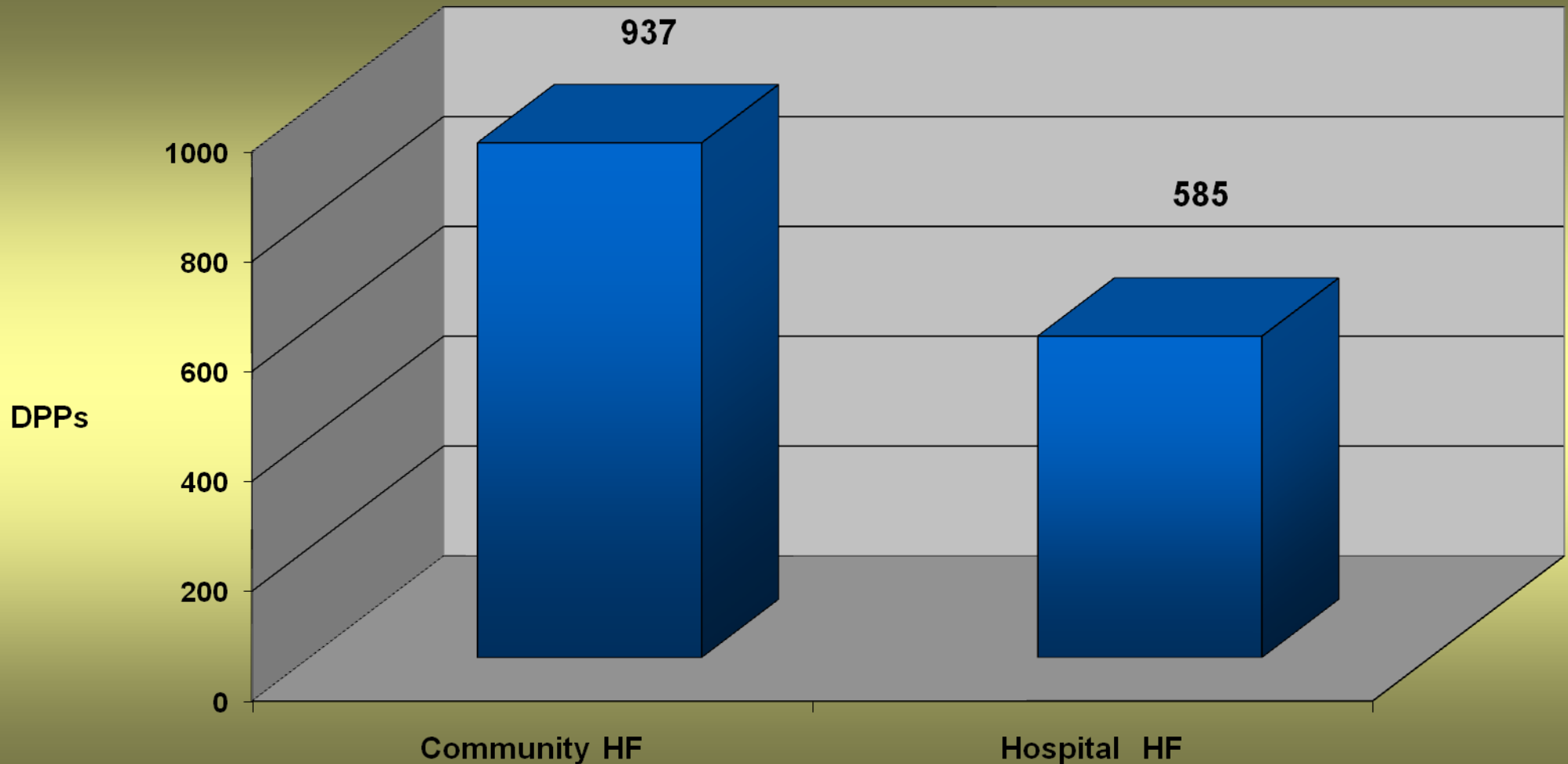
DPPs- treatment of unstable AP



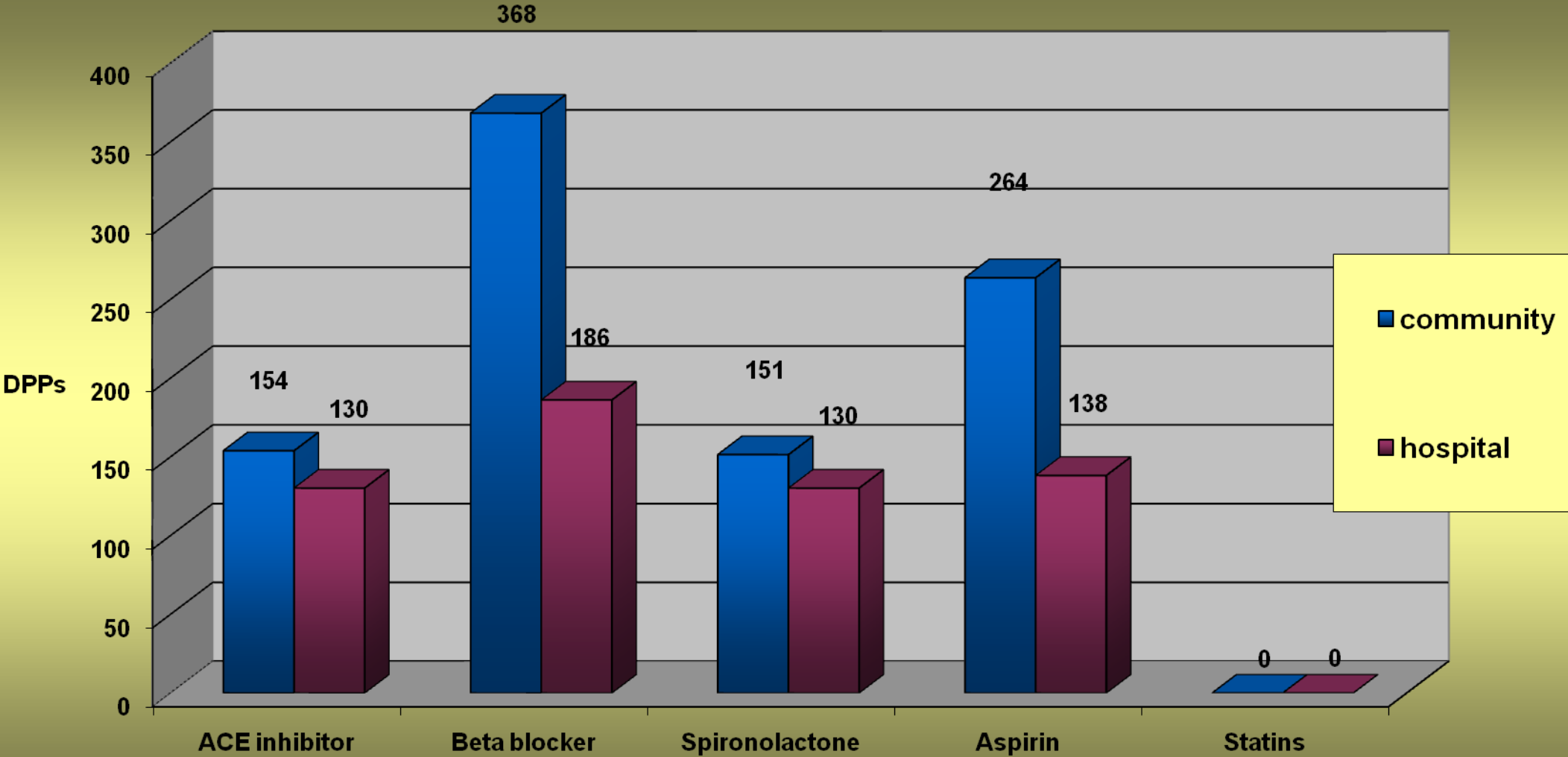
DPPs - stable angina pectoris



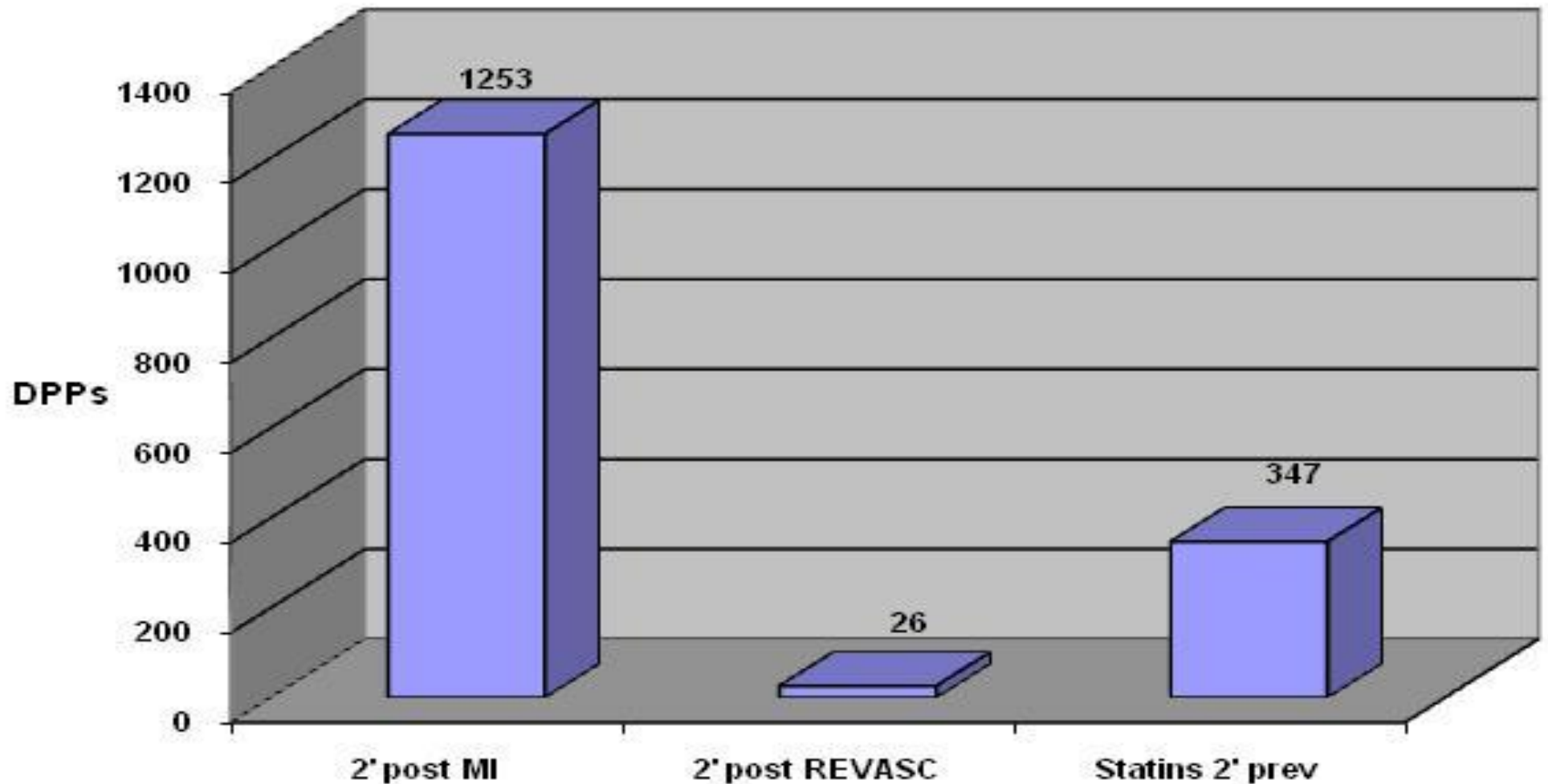
DPPs – heart failure, community and hospital treatment



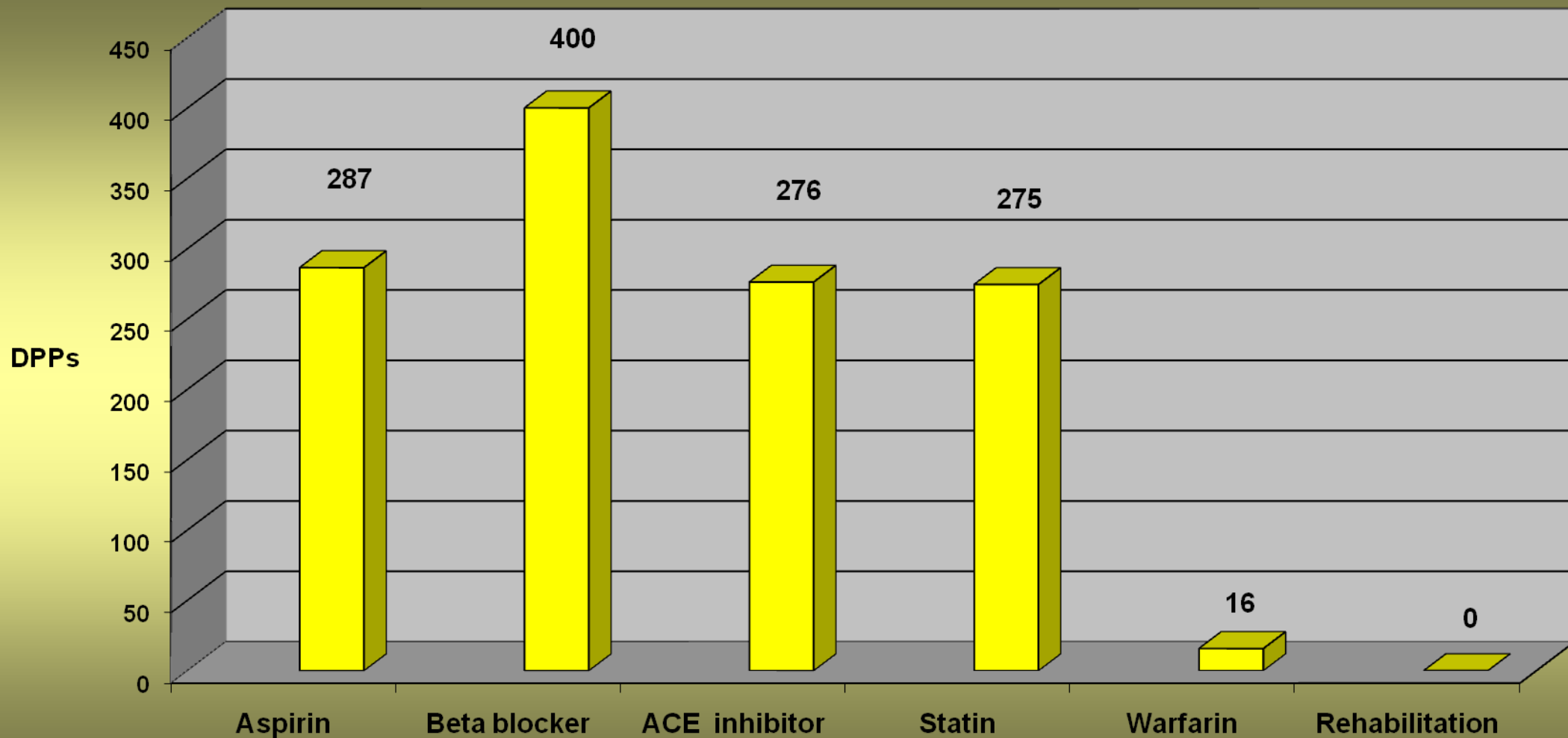
DPPs – drugs in treatment of heart failure



DPPs – secondary prevention



DPPs – secondary prevention post AMI



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Conclusions 1

- **12,080 fewer CHD deaths in 2007 compared with 1985 rates**
- **58% of CHD mortality fall attributable to risk factor decreases** (*especially cholesterol*)
- **41% mortality fall attributable to treatments** (*especially heart failure & AMI*)

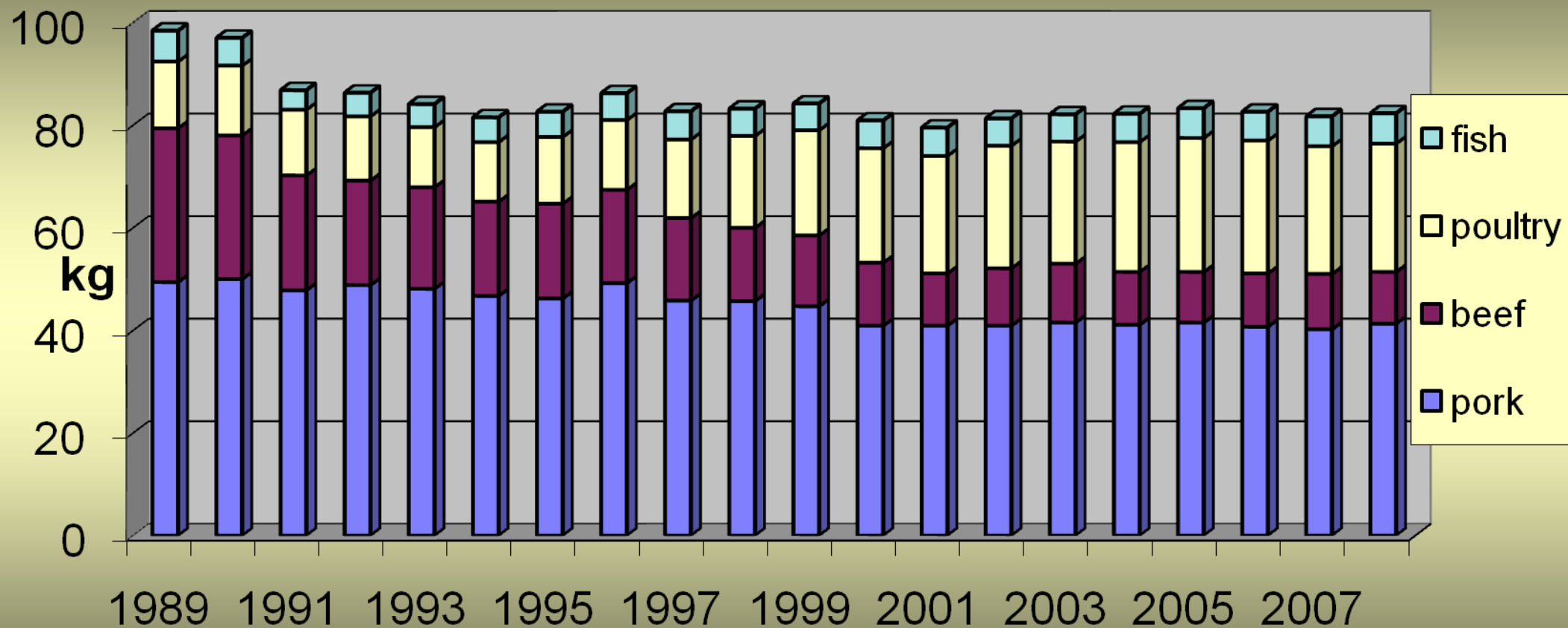
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Conclusions 2

- **Future CHD strategies should support more aggressive policies to promote healthy life style** (*specific targeting tobacco control, diet & physical activity*)
- **Maximise evidence-based drug therapies** (*especially heart failure treatments*)

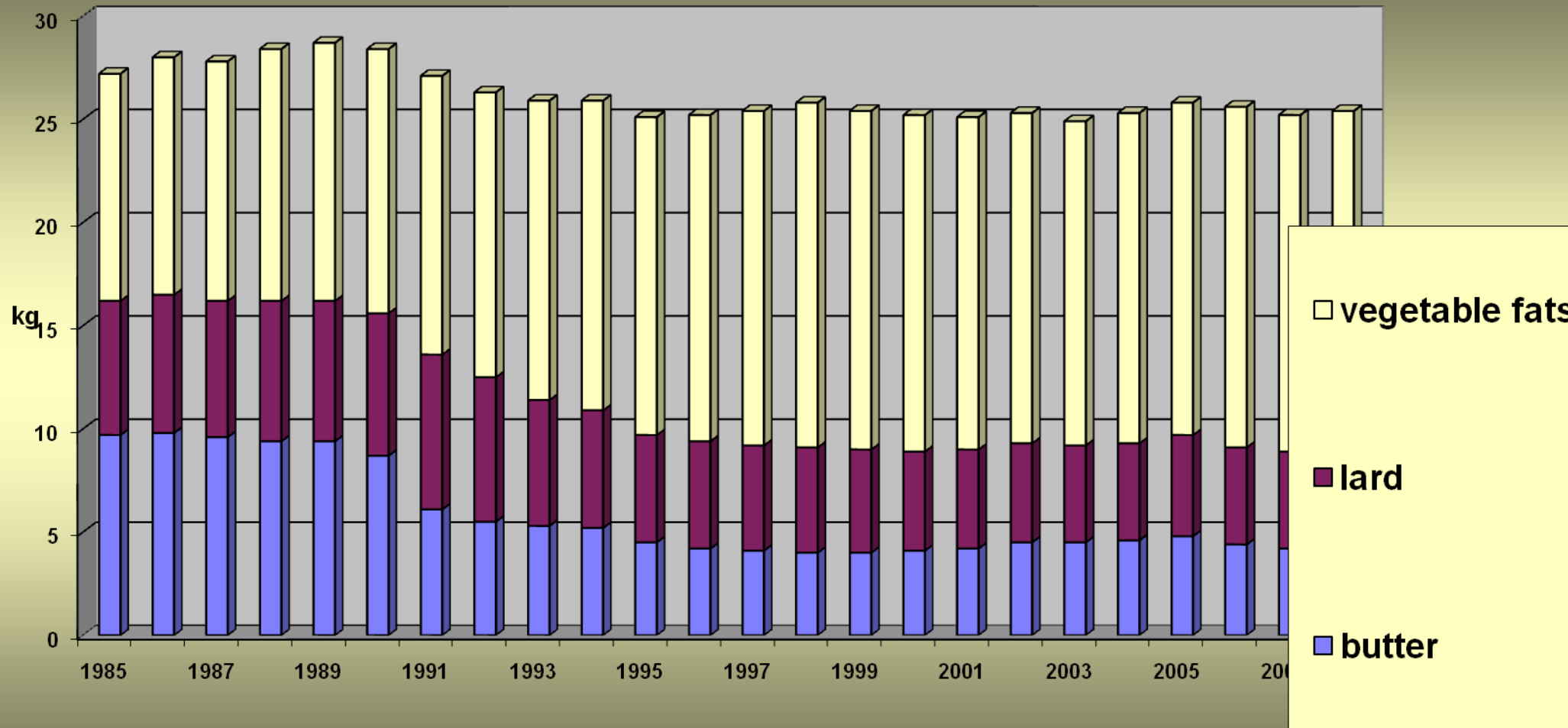
Meat consumption / 1 inhab.

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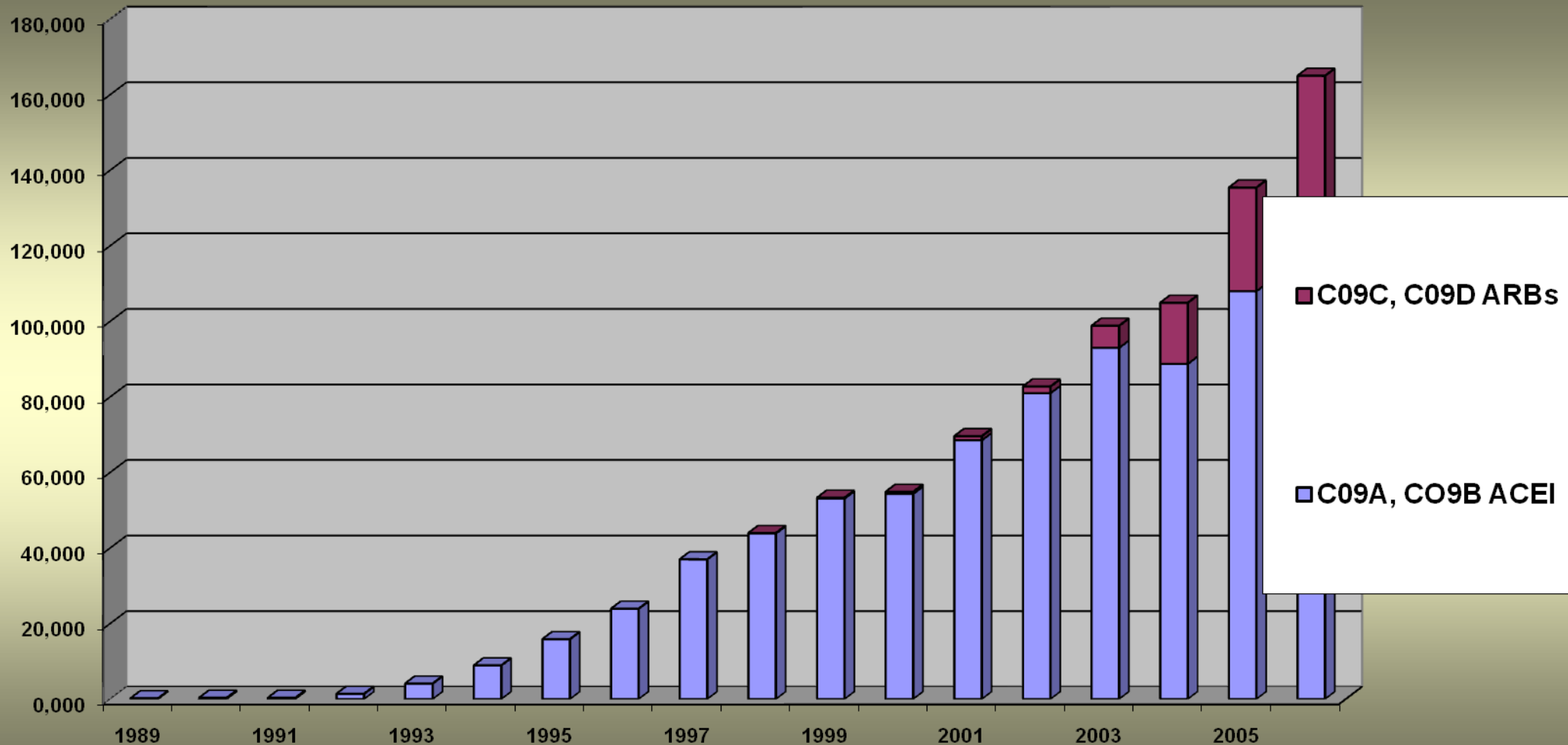


Fat consumption / 1 inhab.

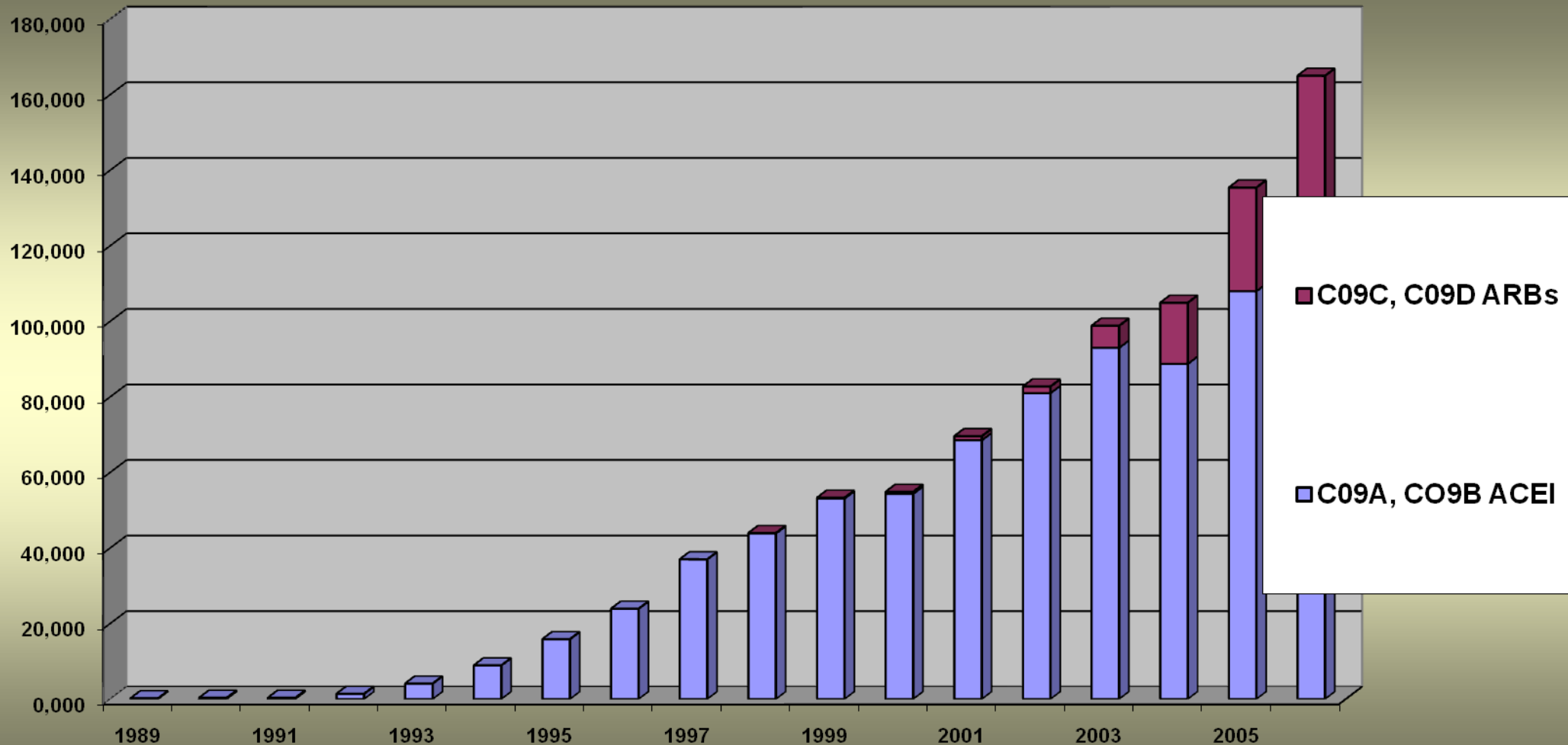
ČSÚ



Uptake of ACEI and ARBs Czech Republic (DDD/1000/d)



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Cardiovascular mortality: acute and chronic forms (Czech Republic, 2005)

Men

Women

