Technische Universität Berlin

Chronic Disease Prevention & Control – Cost-effective interventions and treatments: evidence for action in Europe

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& European Observatory on Health Systems and Policies

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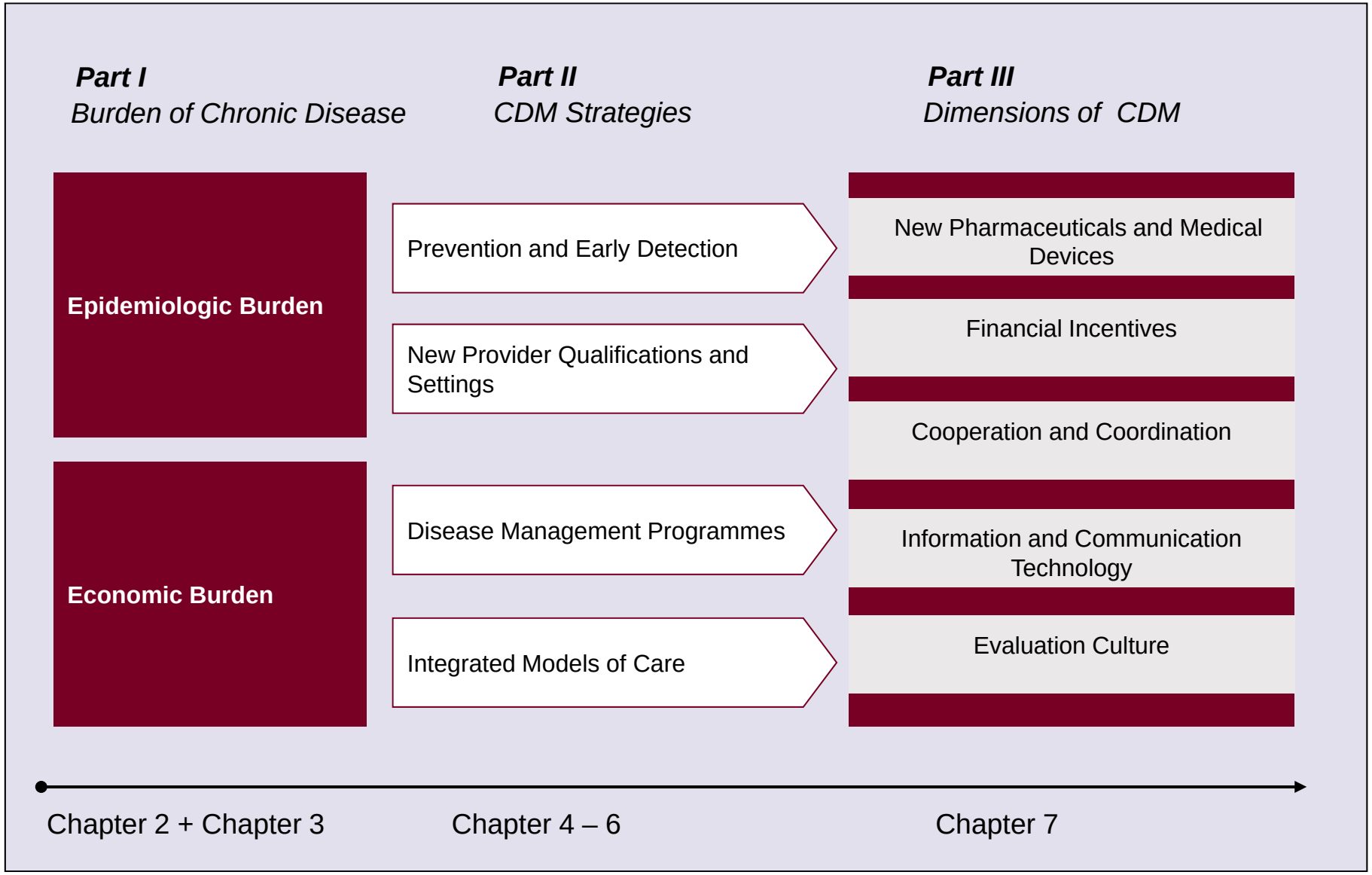
Structure of the Report „Managing Chronic Disease in Europe“ (in your folder)



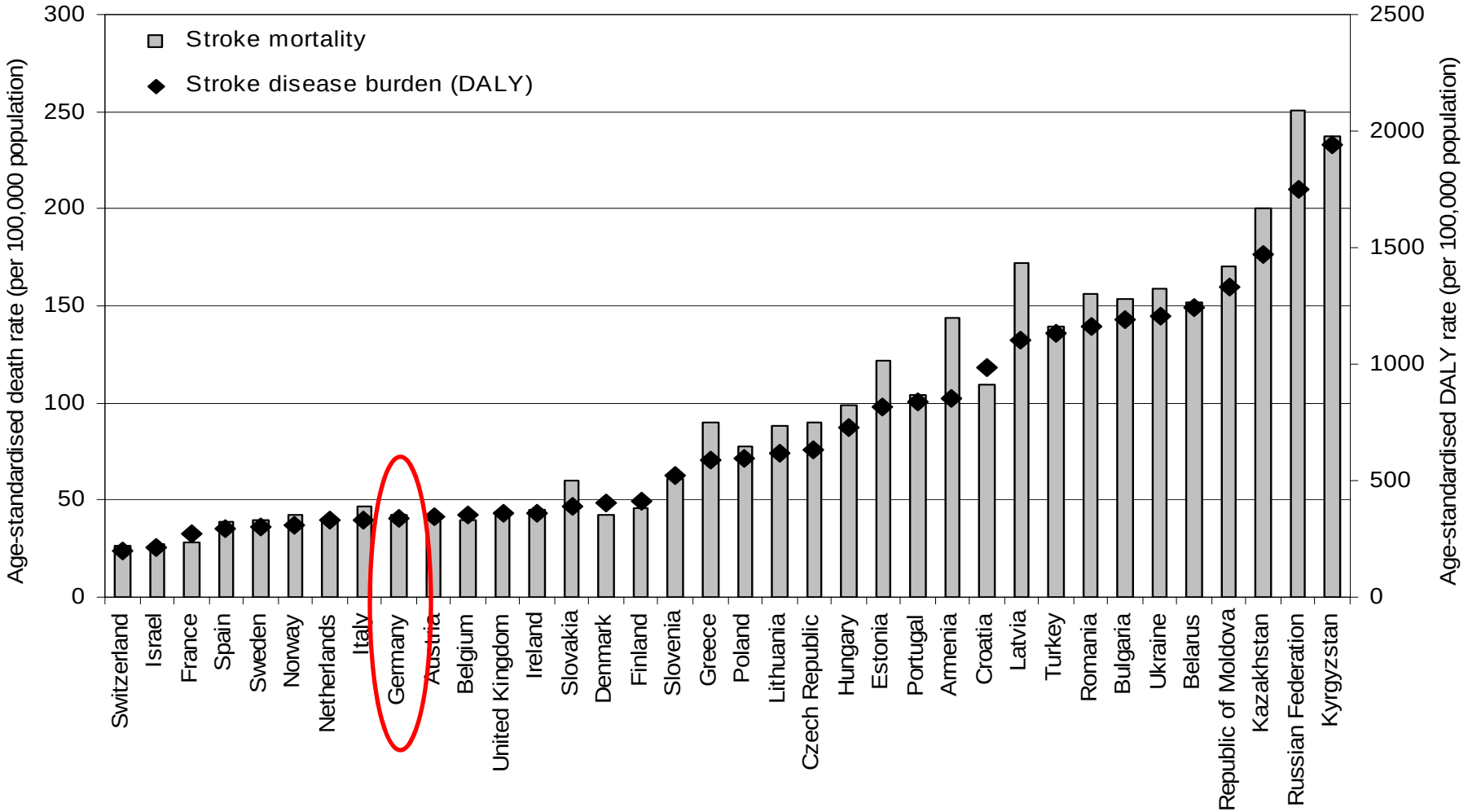
Disease burden and deaths from non-communicable diseases in the WHO Euro ean re ion b cause 2005

Groups of causes	Disease Burden		Deaths	
	DALYs (x 1000)	Proportion from all causes (%)	Number (x 1000)	Proportion from all causes (%)
Selected noncommunicable diseases				
Cardiovascular diseases	**34.421**	**23**	**5.067**	**52**
Neuropsychiatric conditions	**29.370**	**20**	264	3
Cancer (malignant neoplasms)	17.025	11	**1.855**	**19**
Digestive diseases	7.117	5	391	4
Respiratory diseases	6.835	5	420	4
Sense organ diseases	6.339	4	0	0
Musculoskeletal diseases	5.745	4	26	0
Diabetes mellitus	2.319	2	153	2
Oral conditions	1.018	1	0	2
All noncommunicable diseases	**115.339**	**77**	**8.210**	**86**
All causes	**150.322**	**100**	**9.564**	**100**

Deaths and burden of disease attributable to common risk factors, in absolute numbers and percentages of all deaths/ DALYs, sorted by contribution to world-wide deaths (2001)

Chronic disease risk factors	Low- and middle-income		High-income		World	
	Deaths	DALYs	Deaths	DALYs	Deaths	DALYs
High blood pressure	6,223 **(12.9%)**	78,063 (5.6%)	1,392 **(17.6%)**	13,887 (9.3%)	7,615 (13.5%)	91,950 (6.0%)
Smoking	3,340 (6.9%)	54,019 (3.9%)	1,462 **(18.5%)**	18,900 **(12.7%)**	4,802 (8.5%)	72,919 (4.7%)
High cholesterol	3,038 (6.3%)	42,815 (3.1%)	842 **(10.7%)**	9,431 (6.3%)	3,880 (6.9%)	52,246 (3.4%)
Low fruit and vegetable intake	2,308 (4.8%)	32,836 (2.4%)	333 (4.2%)	3,982 (2.7%)	2,641 (4.7%)	36,819 (2.4%)
Overweight and obesity	1,747 (3.6%)	31,515 (2.3%)	614 (7.8%)	10,733 (7.2%)	2,361 (4.2%)	42,248 (2.8%)
Physical inactivity	1,559 (3.2%)	22,679 (1.6%)	376 (4.8%)	4,732 (3.2%)	1,935 (3.4%)	27,411 (1.8%)

Burden of death and disease attributable to stroke in selected countries in the WHO European region (2002) – not primarily a high-income problem!



Strategies against chronic disease: what is being done?

- Prevention and early detection: at least regarding tobacco now taken seriously, obesity recognised but not tackled comprehensively (conflict health / agricultural/ industry policy), cancer screening on the rise (e.g. mammography)
- Treatment interventions: important for cancer, HIV, dementia but well-established drugs for diabetes and hypertension (issue is to manage cost-ineffective new drugs)

-> main focus on
Service provision and coordination issues

A word of warning on academics advisin olic -makers:

- ‘integrated care’
- ‘co-ordinated care’
- ‘collaborative care’
- ‘managed care’
- ‘disease management’
- ‘case management’
- ‘patient-centred care’
- ‘chronic (illness) care’
- ‘continuity of care’
- ‘seamless care’

“academic quagmire of definitions and concept analyses”

General practitioner

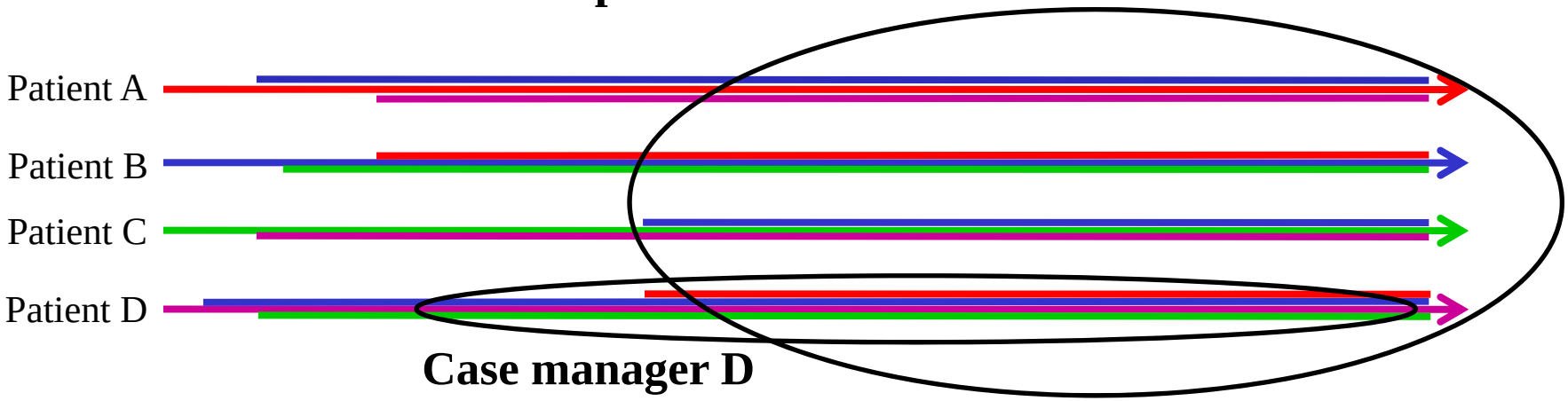
Specialist I

Specialist II

Specialist III

Provider settings combining expertise for red disease, blue disease …

Nurse practitioner



Case manager D

Integrated models of care (Chronic Care Model)

Disease Management Program RED DISEASE

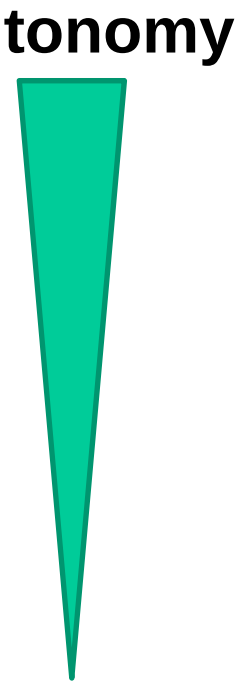
Disease Management Program BLUE DISEASE

Disease Management Program GREEN DISEASE

Disease Management Program PURPLE DISEASE

New provider qualifications and settings

- Focus on developing highly-qualified nurses (no standard name yet)
- Nurse-led clinics in Sweden
- Nurse practitioners in the Netherlands
- Community matrons as case managers in England
- Nurses as extended arms of GPs in Germany



Disease management programmes: key elements

- comprehensive care: multidisciplinary care for entire disease cycle
- care continuum, i.e. coordination of the different components
- population orientation (defined by a specific condition)
- active client-patient management tools (health education, empowerment, self-care)
- evidence-based guidelines, protocols, care pathways
- information technology
- continuous quality improvement

DMPs are popular – at least in Germany, where they were tied to financial incentives until 2008

DMP	Number of patients enrolled in DMP 2008
Diabetes mellitus type 2	2.7 mn
Diabetes mellitus type 1	0.1 mn
Coronary heart disease	1.2 mn
Asthma	0.3 mn
COPD	0.3 mn
Breast cancer	0.1 mn
Total	**4.7 mn (7% of SHI-insured)**

Strategies against chronic disease: how effective?

- *Crucial and weak point!*
- Most publications report on relatively small-scale interventions without control group or inadaequate control (e.g. no randomization, no risk adjustment
- (As for pharmaceuticals etc.:) the weaker the study design, the larger the published effects
- Logic of Evidence-based Medicine applies: best available evidence counts

Effects of anti-smoking measures on smoker prevalence

Measure	Effect on smoker prevalence
Price increase by 10 percent	Decline by 4 percentage points in countries with high per capita income
Ban on smoking at work	Decline by 5-10 percentage points
Bans on smoking in pubs, restaurants and other public places	Decline by 2-4 percentage points
Advertising ban	Decline by 6 percentage points if ban is absolute
Health warning on cigarette packs	In the Netherlands, 28 percent of all 13- to 18-year-olds said they smoked less as a result of the health warnings; in Belgium, 8 percent of those asked said they smoked less because of warnings.
Media campaigns	Percentage of smokers declines by 5-10 percentage points, depending on how the campaigns are targeted at specific groups
Withdrawal measures; subsidies for treatment	Decline by 1-2 percentage points after 2 years, depending on the spectrum of people registered

Source: European Network for Smoking Prevention. Effective tobacco control in 28 European countries, October 2004. www.ensp.org/files/effectivefinal2.pdf

How effective are Disease Management Programmes?

Disease	Clinical Processes: Adherence to Evidence-based Guidelines	Health-related: Changes in Behaviors	Disease Control: Changes in Intermediate Measures	Clinical Outcomes	Healthcare Utilization: Changes in Utilization of Services	Financial Outcomes	Patient Experience: Satisfaction, Quality of Life, Etc
CHF	**Improved**	Inconclusive evidence	**Improved**	Inconclusive evidence	**Reduced hospital admission rates**	Inconclusive evidence	**Improved**
CAD	**Improved**	Evidence for no effect	**Improved**	Evidence for no effect	Inconclusive evidence	Inconclusive evidence	Insufficient evidence
Diabetes	**Improved**	Evidence for no effect	**Improved**	Insufficient evidence	Inconclusive evidence	Inconclusive evidence	Insufficient evidence
Asthma	Inconclusive evidence	Inconclusive evidence	Inconclusive evidence	Evidence for no effect	Inconclusive evidence	Evidence for no effect	Insufficient evidence
COPD	Insufficient evidence	Insufficient evidence	Inconclusive evidence	Insufficient evidence	Insufficient evidence	Insufficient evidence	Insufficient evidence
Depression	**Improved**	N/A	**Improved**	Inconclusive evidence	Increased utilization	Increased cost	**Improved**

Codes: N/A: not applicable, as no relevant health-related behaviors for depression exist.
Disease-end point combinations in which disease management seems to achieve the intended result are shaded.
Source: RAND analysis using identified articles.
CHF indicates congestive heart failure; CAD, coronary artery disease; COPD, chronic obstructive pulmonary disease.

Mattke et al. *Am J Manag Care. 2007; 13: 670-676*

Summary of evidence on effectiveness of Chronic Care Model (CCM) components

CCM component	*Interventions shown to be effective*	*Outcome measures affected*
Patient self-management support	• Patient educational sessions • Patient motivational counselling • Distribution of educational materials	• Physiological measures of disease • Patient – quality of life – health status – functional status – satisfaction with service – risk behaviour – knowledge – service use – adherence to treatment
Delivery system design	• Multidisciplinary teams	• Physiological measures of disease • Professionals adherence to guidelines • Patient service use
Decision support	• Implementation of evidence-based guidelines • Educational meetings with professionals • Distribution of educational materials among professionals	• Professionals adherence to guidelines • Physiological measures of disease
Clinical information systems	• Audit and feedback	• Professionals adherence to guidelines
Delivery system	Little published experimental evidence	
Community resources	Little published experimental evidence	

Strategies against chronic disease: how costly and how cost-effective?

- Even less published evidence; if costs are reported in evaluations, the methodology is usually flawed!
- On macro-economic implications, we have to rel_ on models and _ro_ections!
- Managing CD costs additional money (-> not effective for cost-containment in short run),
  but may be cost-effective (data missing!).

Cost per Quality-Adjusted Life Year (QALY) saved by interventions to reduce or prevent obesity

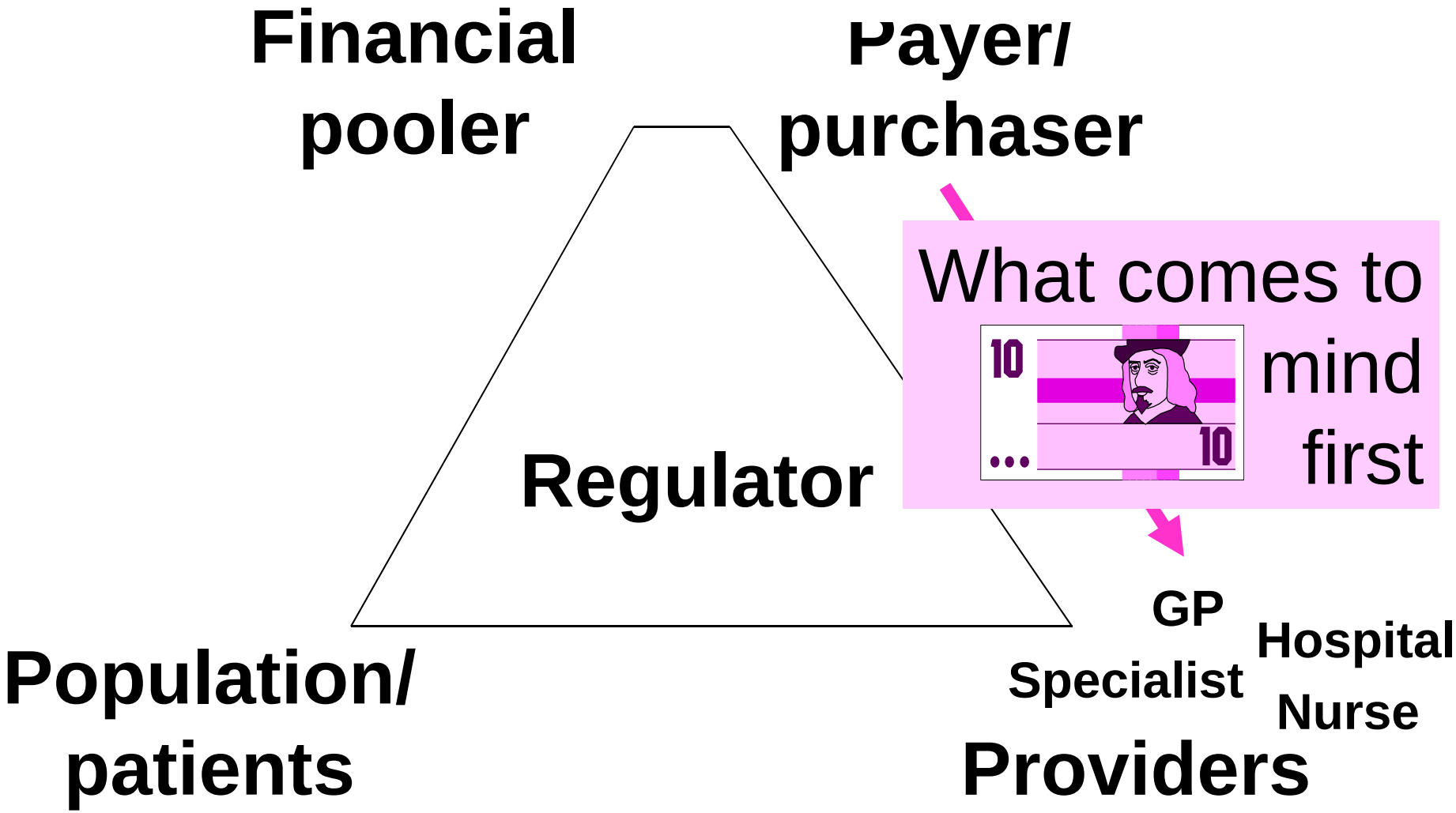
Intervention	Target population	Estimated cost per QALY, US$	Source
Planet health (a school-based intervention to improve nutrition and increase h sical activit	Middle-school children	**In girls, 4,305**	(Wang et al., 2003)
Orlistat (a pharmaceutical intervention)	Overweight and obese patients with type 2 diabetes mellitus	**8,327**	(Maetzel et al., 2003)
Bariatric surgery	Middle-aged men and women who are morbidly obese	**Women: 5,400-16,100**	(Craig & Tseng, 2002)
		Men: 10,000-35,600	
Diet, exercise, and behaviour modification	Adult women	**12,640**	(Roux et al., 2006)

The evidence on the four strategies …

- Relatively good evidence on **preventive "technologies"** to reduce risk factors (tobacco, obesity …) – best in comprehensive approaches, which however are nowhere fully utilised; prevention also cost-effective (but may require resources in the order of curative technologies)
- Developing **new professions** promising but evidence limited to certain countries, examples
- **DMPs** improve processes but evidence on outcomes still to come, no cost savings but possibly cost-effective
- Integrated care (**CCM**): sounds necessary and promising, but hardly any solid evidence beyond some individual components

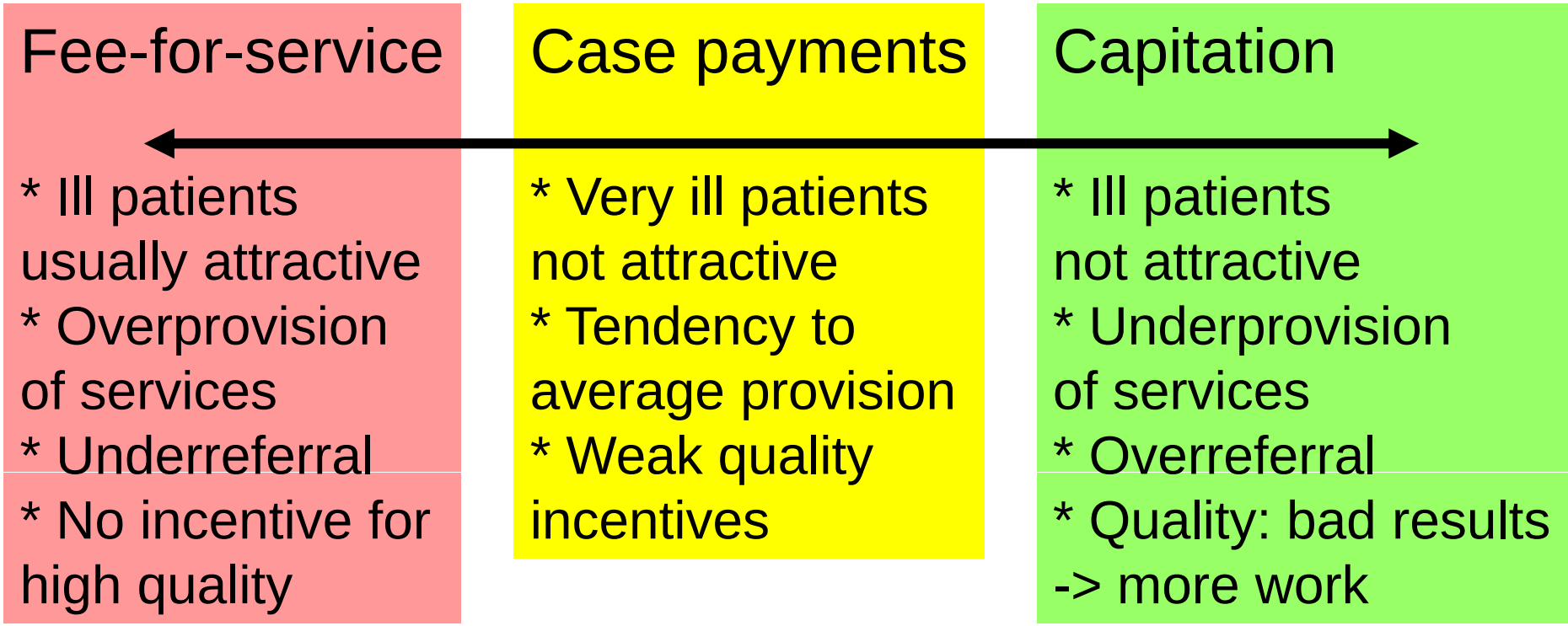
Shaping the future of managing chronic diseases in Europe

- Right mix of **financial incentives** very important (for insured/ patients, payers, providers …)
- Strengthen **coordination** (in access, orientation, provision of information, continuity/coordination/communication among professionals)
- Elaborated **information and communication technologies** crucial, but agreement on international technical stabdards necessary
- Establish **evaluation** culture without exceptions



Right mix of financial incentives

Weaknesses of traditional ways of a in roviders for chronic care



* No incentives for appropriate continuity of care across providers

Examples of new payment measures

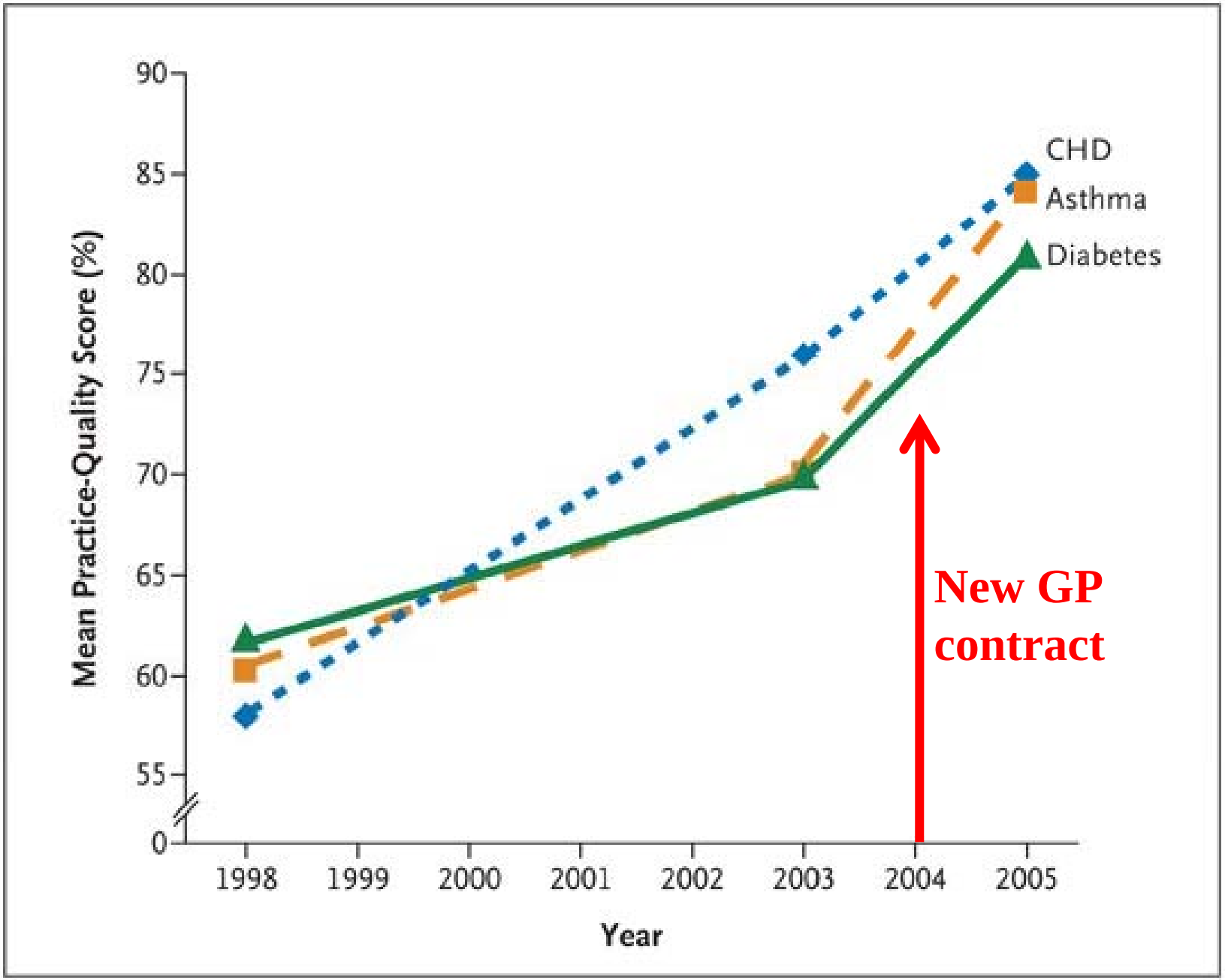
- ‘year of care’ payment for the complete service package required by individuals with chronic conditions (DK)
- Per patient bonus for physicians for acting as gatekeepers for chronic patients and for setting care protocols (F)
- bonus for DMP recruitment and documentation (D)
- 1% of overall health budget available for integrated care (D)
- bonuses for reaching structural, process and outcome targets (UK)
- ‘pay-for-performance‘ bonuses (US)

Paying for chronic care quality in the UK:

bonus of GBP 125 per quality point up to 1050 points

Examples of indicators, targets and point values in the GP contract

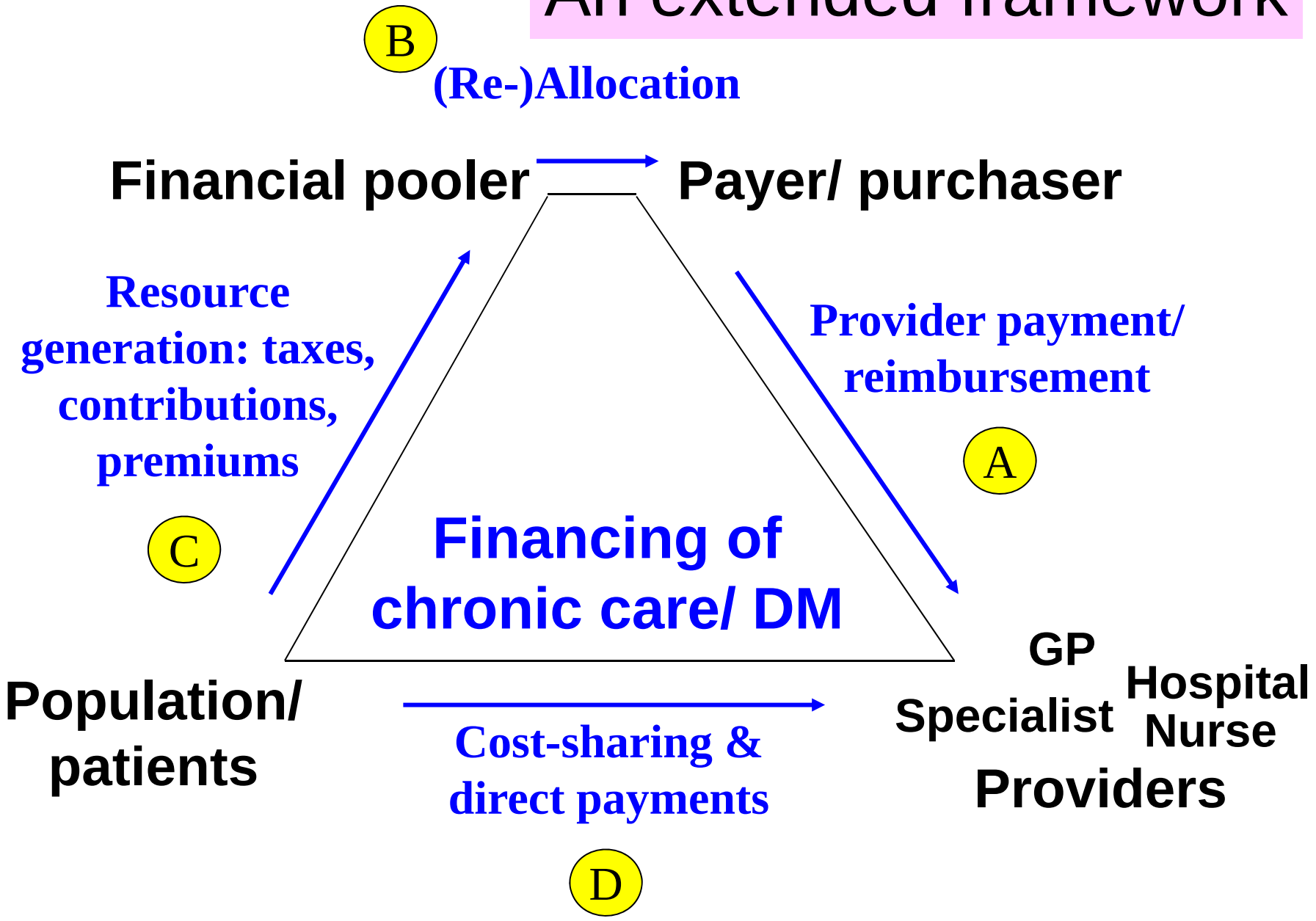
Type	Indicator	Points	Target Range
Structural	Patients are able to access a receptionist via telephone and face to face in the practice, for at least 45 hours over 5 days, Monday to Friday.	1.5	yes/no
Structural	The practice establish a register for patients with stroke or TIA	4	yes/no
Process	The percentage of patients with history of myocardial infarction who are currently treated with an ACE inhibitor.	7	25%-70%
Process	Patient Survey: The practice will have undertaken an approved patient survey each year	40	yes/no
Outcome	The percentage of patients with diabetes in whom the last blood pressure is 145/85 or less.	17	25%-55%
Outcome	The percentage of patients age 16 and over on drug treatment for epilepsy who have been convulsion-free for last 12 months recorded in last 15 months	6	25%-70%


Mean Practice-Quality Score (%)
90
85
80
75
70
65
60
55
0
1998
1999
2000
2001
2002
2003
2004
2005
Year
CHD
Asthma
Diabetes
New GP contract

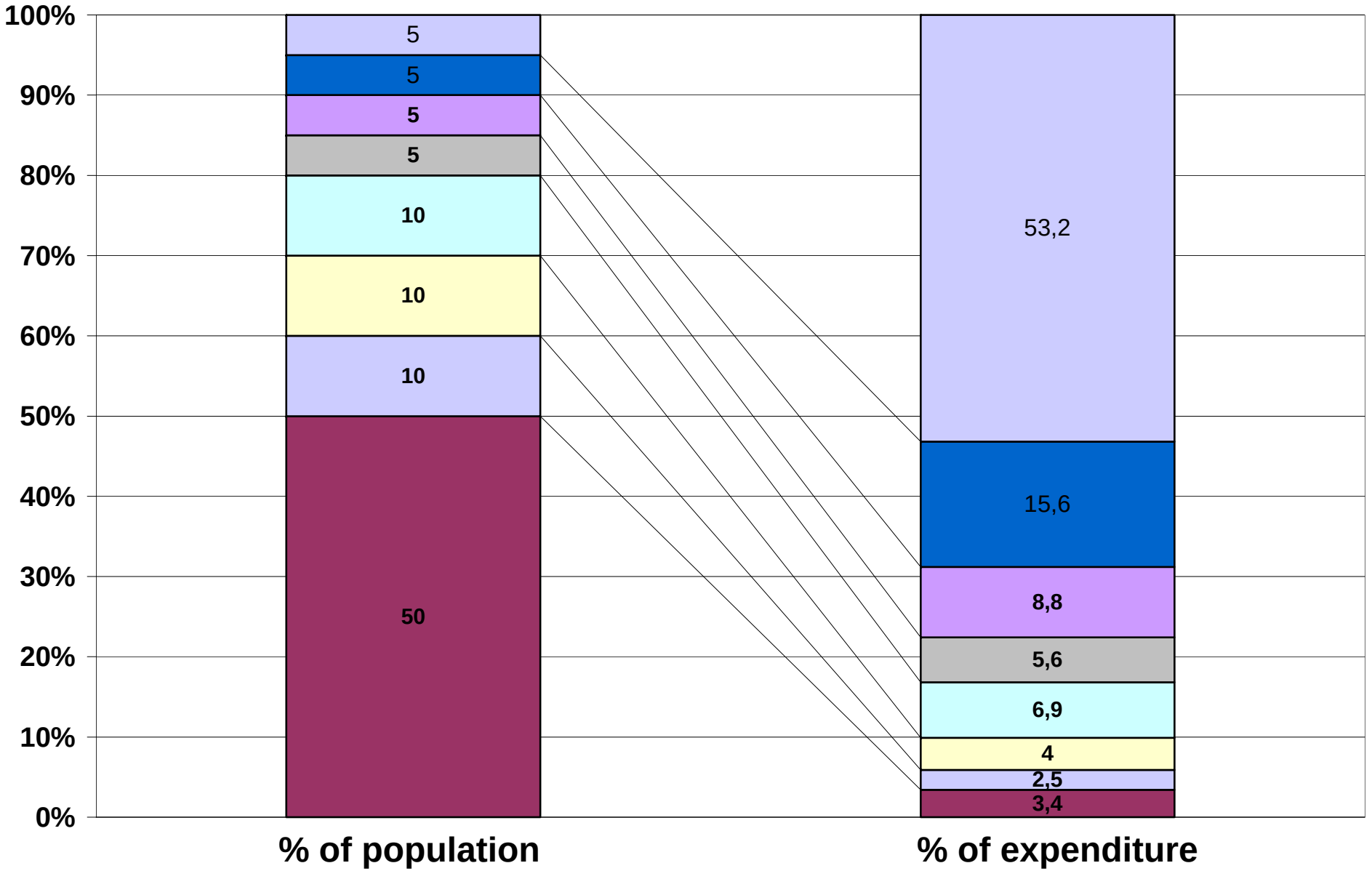
Paying for chronic care quality in the UK

- Practices reached 91% of all points in first year, 96% in the second year
- for an average bonus of GBP >100,000/ year (= > 1 billion for the NHS)!
- i.e. documented “quality“ went up, e.g. 100,000 persons were newly diagnosed with diabetes: prevalence from 3.3 to 3.6%
- Younger, middle-class patients more popular with GPs ¸hi¸her com¸ liance¸ -> access problem

An extended framework



Insurers need the right financial incentives, too: the well-known 20/80 distribution (better: 5/50 or 10/70 problem)



Chronic patients‘ cost-snarıng – traditional approaches

- no co-payments for services related to their disease, e.g. ‘ALD’ (30 mainly chronic diseases) in France
- lower annual limits on co-payments
- certain drugs require lower cost-sharing if the indication is deemed serious

Chronic patients‘ cost-snarıng – newer approaches

- ‘ALD’ exemption only if care protocol is established for each patient by their GP and signed by patient (France since 2004)
- cost-sharing may be reduced or waived if patients enrol in DMPs
- patients with chronic conditions/complex needs managed via a care plan/ inscribed in DMP receive rebates (Australia) or additional services (Germany)

STRUCTURAL QUALITY

- ‘ALD’ exemption only if protocol is presented to every treating physician at each visit (France)
- lower cost-sharing limit applies only if patient is compliant (Germany from 2007)

PROCESS QUALITY

Structural barriers to coordination

- Competing operation cultures and management approaches in different sectors
- Different ownership structures
- Separate and competing providers with no incentives to cooperate
- Rivalries between professional groups
- Lack of clarity about competencies and accountability

-> Policy-makers must recognise that well-organised interests tend to benefit from fragmented care, so reforms aimed at improving coordination should be well- re ared, and supported by strong political will.

Evaluation culture

- Many aspects of managing CD are not properly *evaluated* -> effectiveness and cost-effectiveness of various prevention and treatment interventions not well established.
- Policy-makers are therefore not best equipped to make informed decisions.

-> Policy-makers must ensure that evaluation based on rigorous methodology is an integral art of all strategies.
Existing data should be made available for research and review across different technologies, settings and providers.

Conclusions

- challenge of managing CD better is serious
- “proof“ that various strategies are effective in terms of health outcomes yet to come
  -> inbuilt evaluation important
- consideration of various strategies and dimensions important
- but: one size will not fit all -> local implementation
- *Managing CD will <u>not</u> lead to immediate health expenditure savings but better health (if proven)*
  -> economic growth -> more money available for health care

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Presentation and further material at:

http://mig.tu-berlin.de

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