

The hospital setting as key sector – Interface management with focus on rational drug prescribing

The Swedish example

*Rickard Malmström, MD PhD
Assoc Professor, Senior Consultant
Head, Drug Safety and Evaluation Sector
Clinical Pharmacology
Karolinska University Hospital



*Conflicts of Interest: none to declare



Swedish healthcare

Financed by taxes

Organized in independent counties* ("landsting")

Healthcare responsibilities divided at the national,
regional and local level

Traditionally most public healthcare providers

Traditionally dominated by hospitals

Sophisticated reimbursement system

Drug budget devolution ongoing

Pharmacy deregulation ongoing

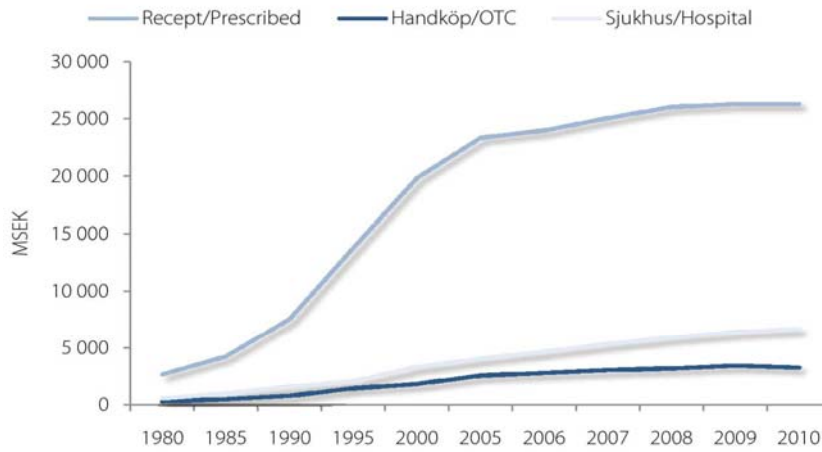
Law on Drug and Therapeutics Committees



* 21 counties, largest is Stockholm County with 2 million inhabitants: one fifth of Sweden's population



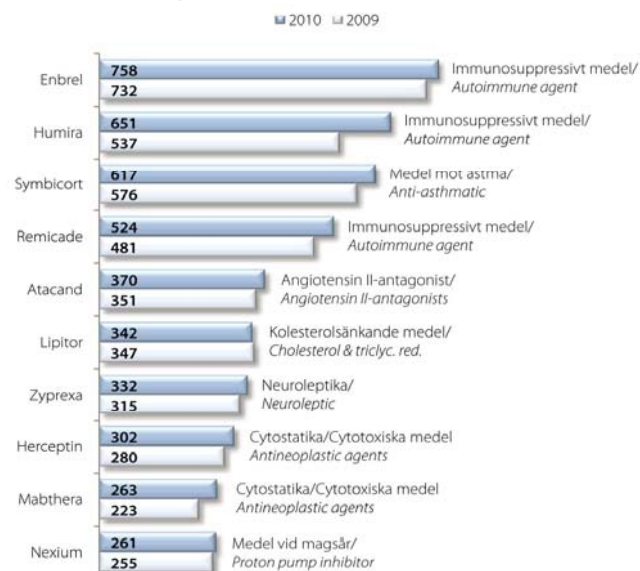
Drug expenditures in Sweden



Källa/Source: Apotekens Service AB



Top-10 drugs by expenditure (mSEK)



Recent Swedish reforms to promote rational drug use

National

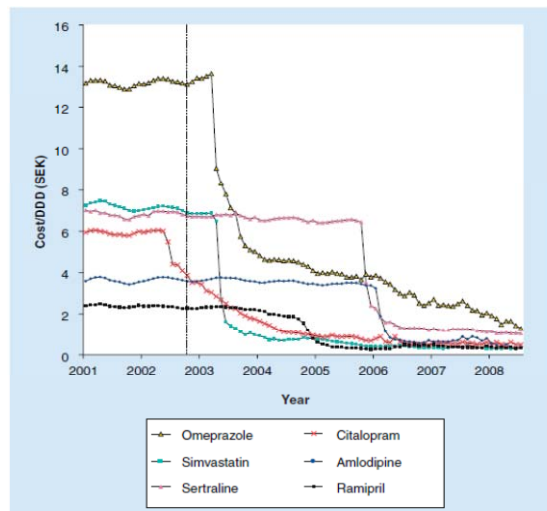
- Transfer of cost-responsibility from state to regions (counties)
- Generic substitution
- TLV (Pharmaceutical Benefits Agency)
 - value based pricing
 - reviewing reimbursement
- National quality registers & quality indicators

Regional

- Drug and Therapeutics Committee
- Wise Drug list
- Electronic decision support systems
- Feedback on prescribing patterns
- Prescribing targets
- Incentives & budgets



Impact of generic substitution



Reimbursement reviews

How we want it to be \neq how it will be
reimbursement restrictions are not always followed...



Difficult for doctors to follow all clinical guidelines

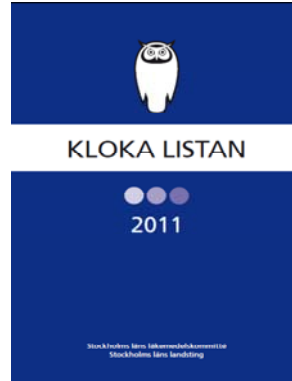


Guidelines

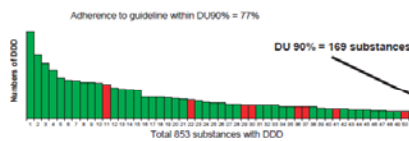


Kloka Listan - the Wise Drug list - Fusing EBM & Drug recommendations w Costeffectiveness

- Issued annually by the regional Drug and Therapeutics Committee
- Focus on the rational choice of drugs for common diseases in outpatient care
- Drugs selected by 20 expert groups, eg cardiovascular, respiratory, GI, psychiatry etc
- Expert groups consist of therapeutic area specialists (hospital consultants), clinical pharmacologists, GPs, & pharmacists
- Information campaigns towards prescribers (and patients/the public)
- Electronic version at www.janusinfo.se



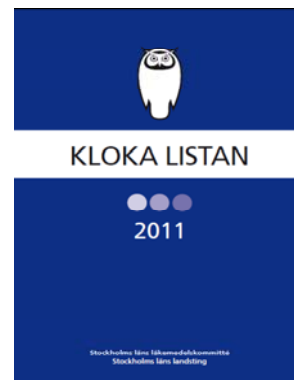
Prescription pattern feedback to hospital clinics and PHCs using eg the DU90% prescribing profiles



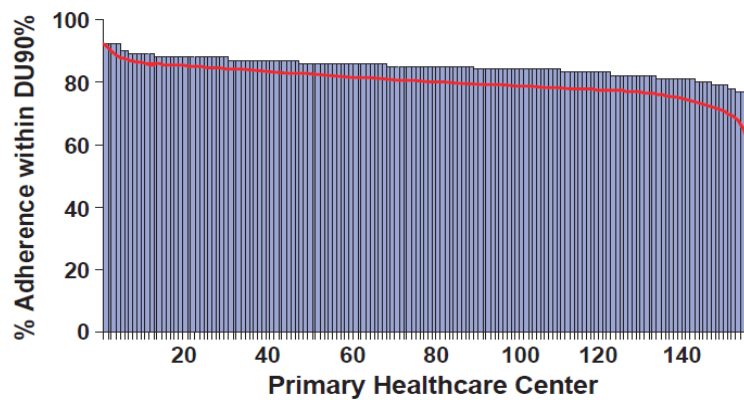
SUBSTANCE	(DDD)	DDD	% TOT	Rx	COST	COST/DDD
1 Acetylsalicylic acid 1 tablet		39 894 732	4,9%	650 808	22 995 814	0,58
2 Simvastatin 30 mg		29 455 125	3,6%	430 022	20 731 306	0,91
3 Enalapril 10 mg		25 832 413	3,2%	296 329	18 111 103	0,71
4 Furosemide 40 mg		22 513 352	2,8%	409 630	18 091 910	0,60
5 Omeprazol 20 mg		19 140 338	2,4%	369 261	36 122 076	1,57
6 Cyanocobalamin 1 mg		18 125 259	2,2%	319 737	11 711 704	0,65
7 Amitodipine 5 mg		17 055 421	2,2%	165 634	10 209 168	0,58
8 Metoprolol 0.15 g		17 160 653	2,1%	490 945	72 421 602	4,22
9 Levothyroxine sodium 0.15 mg		17 030 980	2,1%	405 363	23 094 330	1,36
10 Ramipril 2.5 mg		16 743 668	2,1%	56 412	6 323 952	0,50
11 Felodipine 5 mg		15 807 331	2,0%	177 725	13 801 701	0,88
12 Candesartan 8 mg		14 695 169	1,8%	118 979	59 427 671	4,04
13 Zopiclone 7.5 mg		14 059 803	1,7%	426 876	16 073 546	1,14
14 Paracetamol 3 g		13 597 335	1,7%	621 717	35 916 832	2,64
15 Citalopram 20 mg		13 065 225	1,6%	266 993	12 672 806	0,97
16 Ibrexafungerp 90 mg		10 170 224	1,2%	119 262	11 241 114	1,10
17 Hydroc. thiazide + amitripte *		10 145 923	1,3%	120 927	5 066 822	0,50
18 Calcium combinations		10 047 962	1,2%	209 546	24 983 993	2,49
19 Propiomazine 25 mg		9 729 948	1,2%	174 248	12 173 527	1,25
20 Metformin 2 g		9 297 143	1,2%	152 190	18 415 866	1,98
169						
DU 90% 1 - 169		22 456 520	90,0%	1413456	2448 109 108	3,84
170 - 853		80 552 969	10,0%	2 699 117	2 370 147 340	29,42
TOTAL 1 - 853		808 909 524	100,0%	16 733 173	5 018 346 546	6,21

*Bold = in guideline
* = Different DDD's for various routes of administration
Medicines without DDD excluded (455, corresponding to 511 million SEK)*

Fig. 4. DU 90% (number of substances accounting for 90% of the volume in DDDs) in Stockholm Healthcare Region in 2009. Red = non-recommended drugs; DDD = defined daily dose; DU = drug utilization.



Adherence to the Wise List between different PHCs in Stockholm 2003 & 2009



PHCs: n ~160



Correlation between adherence and expenditure/DDD

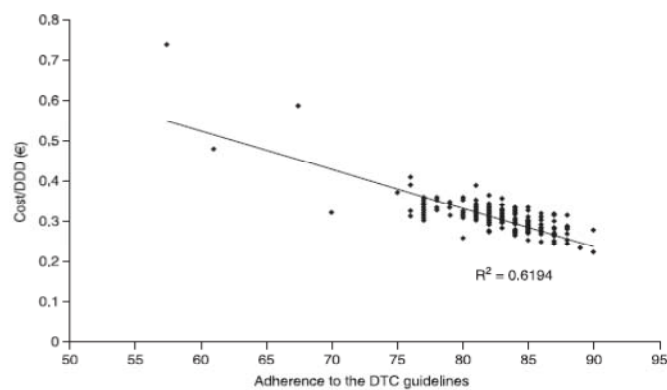


Figure 3 Correlation between adherence to DTC guidelines (within DU90%) and average cost/DDD, October to December 2006 in all PHC centres in the county ($n = 169$)



No correlation between adherence to Wise List recommendations and achieving HbA1c, BP and Cholesterol Targets = **Similar efficacy to a lower cost**

Table 3 Association between the adherence to guidelines and the proportion of patients reaching target levels in each age group in different primary care centres

Effect	OR	Low 95% CI	Up 95% CI	p-Value
% Recommended antidiabetic agents	1.03	0.84	1.26	0.79
% Recommended lipid-lowering agents	1.02	0.92	1.12	0.75
% Simvastatin to all statins	1.00	0.91	1.10	0.99
% ACE-inhibitors of all RAAS	0.95	0.90	1.01	0.07
DU90% adherence antihypertensives	0.94	0.84	1.05	0.31

Presented as odds ratios (OR) per 10 percentage units of the 'prescriptions' following recommendations with 95% confidence intervals (CIs) and p-values for a log-linear trend. RAAS, drugs acting on the renin-angiotensin-aldosterone system; ACE, angiotensin converting enzyme.

Changing landscape

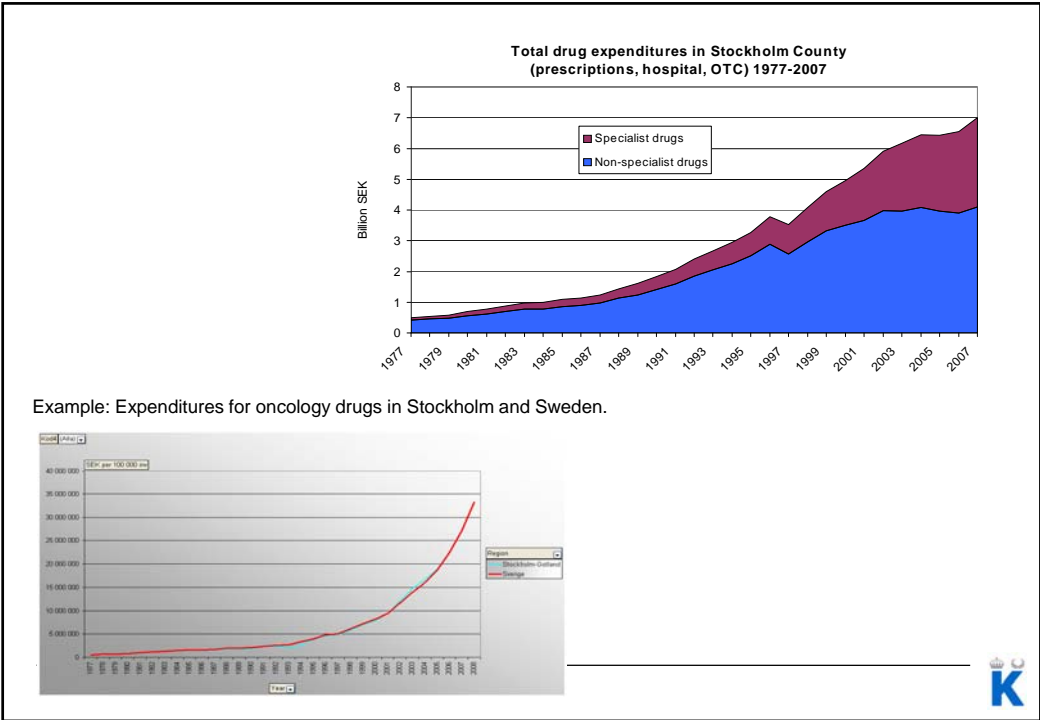
Top 10 by cost – Stockholm County

1999

1. Omeprazol
2. Orlistat
3. *Factor VIII*
4. Citalopram
5. Simvastatin
6. *Somatropin*
7. Budesonide
8. Sumatriptan
9. *Erythropoietin*
10. Metoprolol

2010

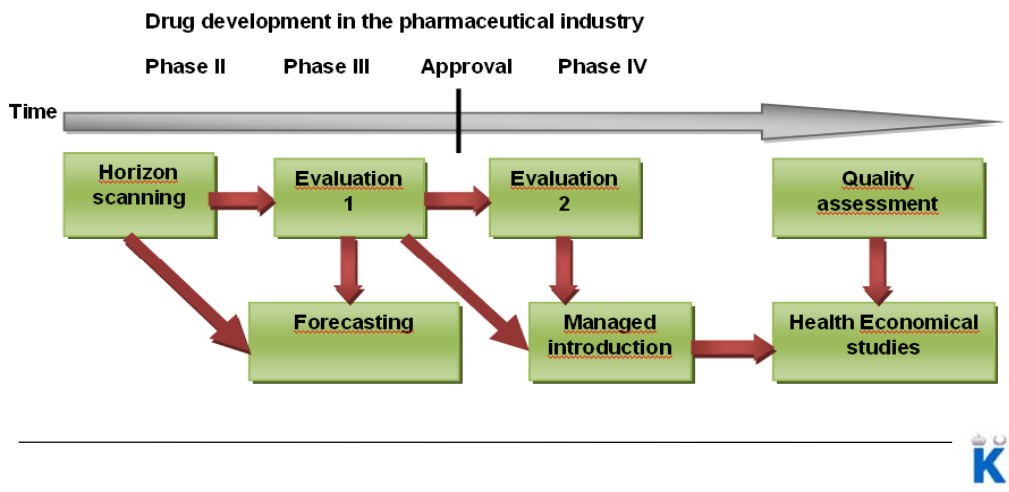
1. *Etanercept*
2. *Adalimumab*
3. *Factor VIII*
4. Formoterol + budesonide
5. *Infliximab*
6. *Olanzapine*
7. *Interferon beta*
8. *Methylphenidate*
9. *Trastuzumab*
10. Candesartan



A way forward..

A new approach
in Stockholm
County to
introduce new
drugs in
healthcare

Stockholm model to introduce new drugs in healthcare



Early warning (Early evaluation)

- Report published 3-6 months pre-launch
- An “early critical drug evaluation incl. consequence analysis”
- Description of the drug & pharmacology, the patient group (population size), current treatment alternatives, clinical efficacy and safety, estimated unit cost for the drug & an estimate of the clinical, service and financial impact

Forecasting

- Expenditures for the coming two years estimated...
- Regression analyses for all pharmacological groups
- Adjusted for newly registered drugs and new indications & drugs expected to be launched during the period
- Adjusted based on position in “life cycle”, patent expiries & introduction of generics, biosimilars



K

Managed introduction of new drugs

Critical Drug Evaluation

Clear guidelines on criteria for using the drug (or when the number of prescribers is limited a consensus agreement)

Information and education

Data collection to determine if the drug is used according to the guidelines

Monitoring of relevant effects and adverse events, in relation to established therapy.

Health economical calculations based on a healthcare- and societal perspective



Introduction of new drugs will likely often occur first in hospital clinics

Highly specialized drugs may only occur there

Trend setters for prescription patterns on a national, regional and local level

A need for collection of real-life data on relevant information, effects (clinical and laboratory data) and adverse events, from patient hospital charts

- Data from Quality Registries is an alternative when applicable.



These thoughts and experiences from other EU countries can be found in:

Frontiers in
PHARMACOLOGY

ORIGINAL RESEARCH ARTICLE
in frontiersin.org

Policies to enhance prescribing efficiency in Europe: findings and future implications

Brian Godman^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000}

- ¹ Centre for Pharmaceutical Innovation, University of Liverpool, Liverpool, United Kingdom
- ² School of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ²⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ³⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁴⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁵⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁶⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁷⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁸⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹¹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹² Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹³ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁴ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁵ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁶ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁷ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁸ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ⁹⁹ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom
- ¹⁰⁰ Department of Pharmacy, University of Liverpool, Liverpool, United Kingdom

Introduction: European countries have been from each other to address prescribing inefficiency in pharmaceutical expenditure. **Objective:** To assess the influence of the many supply and demand side initiatives introduced across Europe to enhance prescribing efficiency in ambulatory care. **Methods:** Cross-national retrospective observational study of utilization (DDOs - defined daily doses) and expenditure (Gross and local currency) in general practice (GPs) and total primary care (TCPC) in European countries and regions principally from 2008 to 2007. Demand side measures categorized under the "4Es" - education, engineering, economic, and enforcement. **Results:** Prescribing supply side initiatives to lower the price of generics combined with demand side measures to enhance their prescribing important to maximize prescribing efficiency. Just adding one component will not produce efficiency gains. The influence of demand side reforms appears modest, with multiple initiatives typically having a greater influence on increasing prescribing efficiency than single measures apart from potentially "enforcement". There are also appreciable differences in expenditure per 1000 inhabitants year between countries. Countries that have not introduced multiple demand side measures to enhance their prescribing efficiency have seen considerably higher expenditure than those that have introduced a range of measures. **Conclusions:** There are considerable opportunities for European countries to enhance their prescribing efficiency, with countries already learning from each other. The 4E methodology allows European countries to concisely capture the range of current demand side measures and plan for the future knowing that initiatives can be added to further enhance their prescribing efficiency.

Keywords: drugs, generic, economic, pharmaceutical, efficiency, ambulatory

ANALYSE

Einführung neuer Arzneimittel in europäische Gesundheitssysteme*

Richard E. Malmgren^{1,2}, Ken Paterson³, Lars L. Gustafsson^{4,5}

ABSTRACT

Die Angaben für Arzneimittel sind in Europa in den vergangenen Jahrzehnten recht geringen Grad fallen sind in einem Land höher Volumen und die Verwendung neuer Arzneimittel. Diese die Arzneimittelmarkt insgesamt als für ein neues hoch spezialisiertes Arzneimittel, die für einen wesentlichen Anteil an den Gesundheitskosten getrieben verantwortlich sind. Dies ist wichtiger für die neue Zulassungsvorfahren zu entwickeln, um den Markt sicher zu gewährleisten und für alle Bürger zugänglichsten Gesundheitsversorgung sicherzustellen. Ein solches Modell einer „Jahren-lange Einführung“ kann ein starker Vorteil für die Gesundheitssysteme sein, und verhindert oder reduziert die Kosten für die Gesundheitssysteme. Alle Innovationen regionaler oder nationaler Märkte von Innovationen Einführung neuer Arzneimittel sollten vorzuziehen werden, um Ausgabengrenzen zu halten und die Versorgung der Bevölkerung zu fördern.

Pharmazeutische Unternehmen hat einen Erfolg in Europa durch die Last abgebaut. Dies hat hauptsächlich durch die Erhöhung des Volumens und der Verwendung von neuen Arzneimitteln. Die steigende Zahl neuer, spezialisierter Arzneimittel, die für einen wesentlichen Anteil an den Gesundheitskosten getrieben verantwortlich sind. Dies ist wichtiger für die neue Zulassungsvorfahren zu entwickeln, um den Markt sicher zu gewährleisten und für alle Bürger zugänglichsten Gesundheitsversorgung sicherzustellen. Ein solches Modell einer „Jahren-lange Einführung“ kann ein starker Vorteil für die Gesundheitssysteme sein, und verhindert oder reduziert die Kosten für die Gesundheitssysteme. Alle Innovationen regionaler oder nationaler Märkte von Innovationen Einführung neuer Arzneimittel sollten vorzuziehen werden, um Ausgabengrenzen zu halten und die Versorgung der Bevölkerung zu fördern.

Keywords: conflict of interest, drug expenditure, drug utilization, health economics, cost of drug, medical health, healthcare assessment, pricing and reimbursement

1 Einleitung

Die Angaben für Arzneimittel sind in den vergangenen Jahrzehnten recht geringen Grad fallen sind in einem Land höher Volumen und die Verwendung neuer Arzneimittel. Diese die Arzneimittelmarkt insgesamt als für ein neues hoch spezialisiertes Arzneimittel, die für einen wesentlichen Anteil an den Gesundheitskosten getrieben verantwortlich sind. Dies ist wichtiger für die neue Zulassungsvorfahren zu entwickeln, um den Markt sicher zu gewährleisten und für alle Bürger zugänglichsten Gesundheitsversorgung sicherzustellen. Ein solches Modell einer „Jahren-lange Einführung“ kann ein starker Vorteil für die Gesundheitssysteme sein, und verhindert oder reduziert die Kosten für die Gesundheitssysteme. Alle Innovationen regionaler oder nationaler Märkte von Innovationen Einführung neuer Arzneimittel sollten vorzuziehen werden, um Ausgabengrenzen zu halten und die Versorgung der Bevölkerung zu fördern.



There is still limited information on how the patients use the drugs...



"Are you sure this is the only way the nicotine patch will work for you?!"

Thank You for your attention!

