Introduction to Drug Utilization Research
Methodological Framework and Research Skills

Associate Professor Lisa Pont

(University of Technology Sydney, Australia)

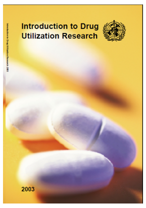
This session was developed
on behalf of the **ISPE Drug Utilization Special Interest Group** by
Associate Professor Lisa Pont (University of Technology Sydney, Australia)
Professor Katja Taxis (University of Groningen, Netherlands)
Associate Professor Bjorn Wettermark (Karolinska Institute, Sweden)

This session

- What is Drug Utilization Research (DUR)?
- How does DUR relate to pharmacoepidemiology?
- DUR Conceptual Framework
- Types of DUR research

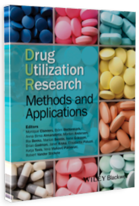
Drug Utilization Research

- "The marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences" (WHO 1977)

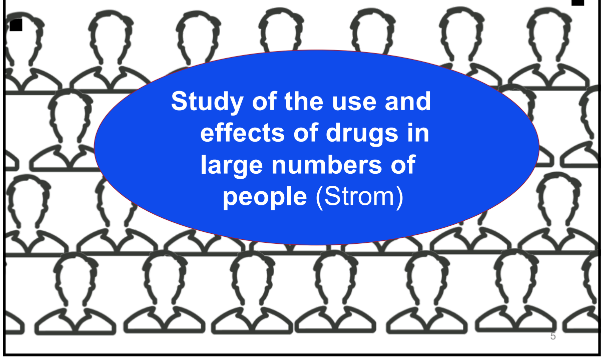


Current definition

"An eclectic collection of descriptive and analytical methods for the quantification, the understanding and the evaluation of the processes of prescribing, dispensing and consumption of medicines, and for the testing of interventions to enhance the quality of these processes." (Wettermark and Vander Stichle, 2008)

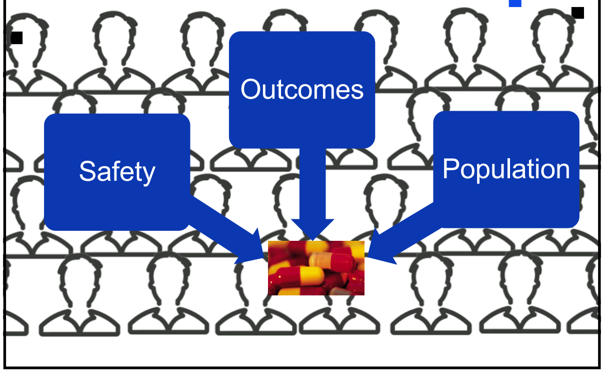


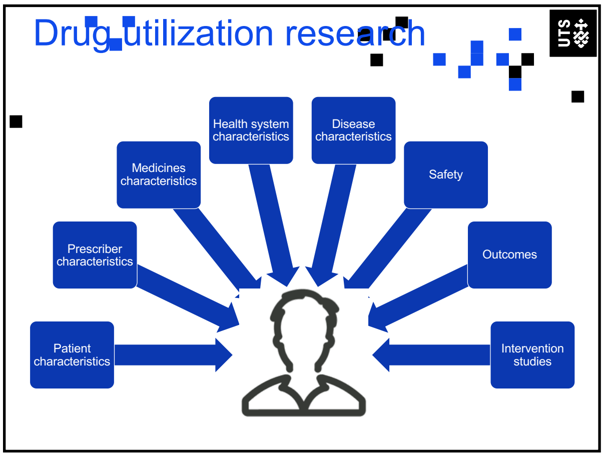
Pharmacoepidemiology



Study of the use and effects of drugs in large numbers of people (Strom)

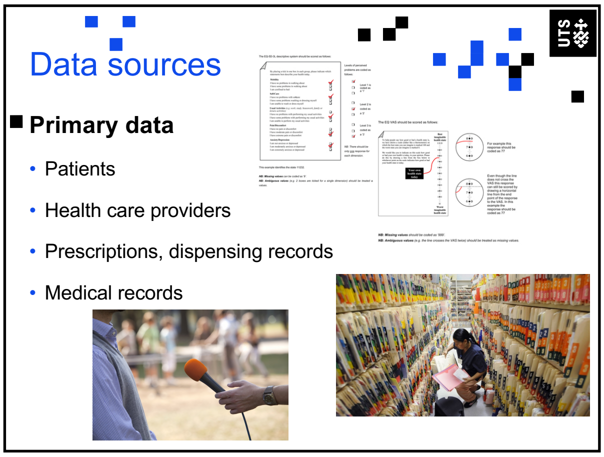
Pharmacoepidemiology





Drug utilization research

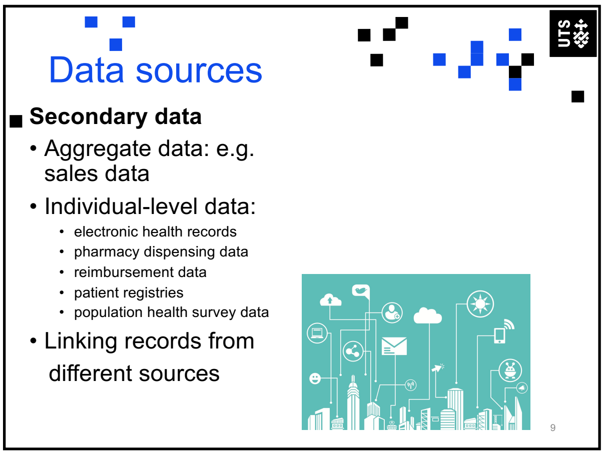
Health system characteristics
Disease characteristics
Medicines characteristics
Safety
Prescriber characteristics
Outcomes
Patient characteristics
Intervention studies



Data sources

Primary data

- Patients
- Health care providers
- Prescriptions, dispensing records
- Medical records



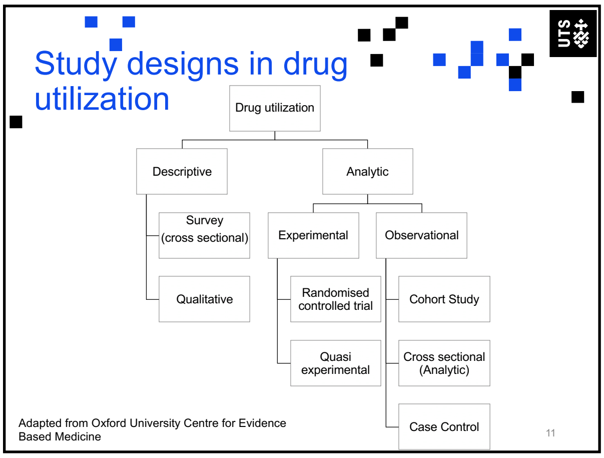
Data sources

Secondary data

- Aggregate data: e.g. sales data
- Individual-level data:
  - electronic health records
  - pharmacy dispensing data
  - reimbursement data
  - patient registries
  - population health survey data
- Linking records from different sources

Taxonomy and terminology

- Classification systems
  - Drug eg World Health Organisation ATC classification
  - Disease eg ICD, SNOWMED
- Measurement units
  - Defined daily dose (DDD)
  - Users
- Usage pattern definitions
  - eg Persistence, switching, commencement, cessation



Study designs in drug utilization

Drug utilization
Descriptive
Survey (cross sectional)
Qualitative
Analytic
Experimental
Randomised controlled trial
Quasi experimental
Observational
Cohort Study
Cross sectional (Analytic)
Case Control

Adapted from Oxford University Centre for Evidence Based Medicine

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Conceptual Framework
Drug Utilization Research

Conceptual Framework

- **To quantify, understand and improve drug use and health outcomes**

Micro level

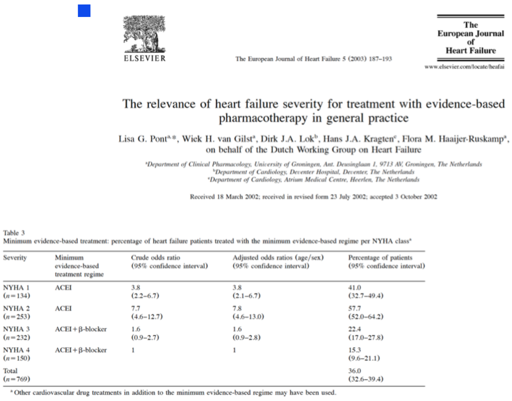
- Prescribing
- Supplying/dispensing
- Consumption

Macro level

- Health System (eg Clinic, hospital, region, country)

DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing	🟦			
Dispensing	🟦			
Consumption	🟦			



ELSEVIER

The European Journal of Heart Failure 5 (2003) 187–193

The European Journal of Heart Failure

www.elsevier.com/locate/heafai

The relevance of heart failure severity for treatment with evidence-based pharmacotherapy in general practice

Lisa G. Pont[a,*], Wiek H. van Gilst[a], Dirk J.A. Lok[b], Hans J.A. Kragten[c], Flora M. Haaijer-Ruskamp[a], on behalf of the Dutch Working Group on Heart Failure

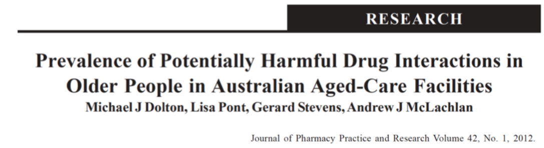
[a] Department of Clinical Pharmacology, University of Groningen, Ant. Deusinglaan 1, 9713 AV, Groningen, The Netherlands
[b] Department of Cardiology, Deventer Hospital, Deventer, The Netherlands
[c] Department of Cardiology, Atrium Medical Centre, Heerlen, The Netherlands

Received 18 March 2002; received in revised form 23 July 2002; accepted 3 October 2002

Table 3
Minimum evidence-based treatment: percentage of heart failure patients treated with the minimum evidence-based regime per NYHA class[a]

Severity	Minimum evidence-based treatment regime	Crude odds ratio (95% confidence interval)	Adjusted odds ratios (age/sex) (95% confidence interval)	Percentage of patients (95% confidence interval)
NYHA 1 ($n=134$)	ACEI	3.8 (2.2–6.7)	3.8 (2.1–6.7)	41.0 (32.7–49.4)
NYHA 2 ($n=253$)	ACEI	7.7 (4.6–12.7)	7.8 (4.6–13.0)	57.7 (52.0–64.2)
NYHA 3 ($n=232$)	ACEI + β-blocker	1.6 (0.9–2.7)	1.6 (0.9–2.8)	22.4 (17.0–27.8)
NYHA 4 ($n=150$)	ACEI + β-blocker	1	1	15.3 (9.6–21.1)
Total ($n=769$)				36.0 (32.6–39.4)

[a] Other cardiovascular drug treatments in addition to the minimum evidence-based regime may have been used.



RESEARCH

Prevalence of Potentially Harmful Drug Interactions in Older People in Australian Aged-Care Facilities

Michael J Dolton, Lisa Pont, Gerard Stevens, Andrew J McLachlan

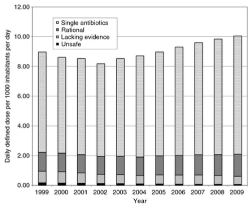
Journal of Pharmacy Practice and Research Volume 42, No. 1, 2012.

3876 Australian nursing home residents in 26 nursing homes

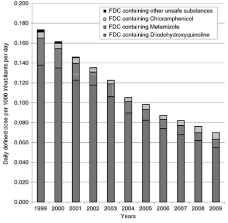
6.1% had a potentially harmful drug interaction

The potential drug interaction with the highest prevalence was co-administration of methotrexate and aspirin (38%)

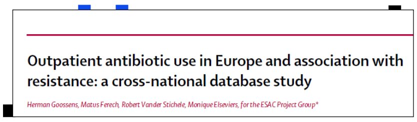
Use of antibacterial fixed-dose combinations in the private sector in eight Latin American Countries between 1999 and 2009



Private-sector sales data, based on information from manufacturers, retail wholesalers and, for some countries, pharmacies,

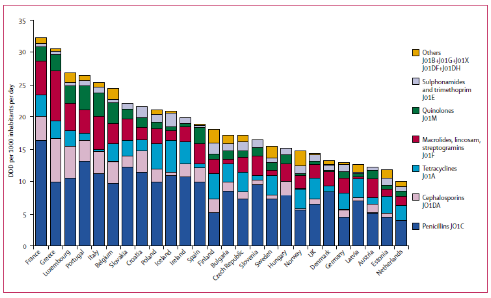


Tropical Medicine & International Health
Volume 18, Issue 4, pages 416-425, 5 FEB 2013 DOI: 10.1111/tmi.12068
http://onlinelibrary.wiley.com/doi/10.1111/tmi.12068/full#tmi12068-fig-0002

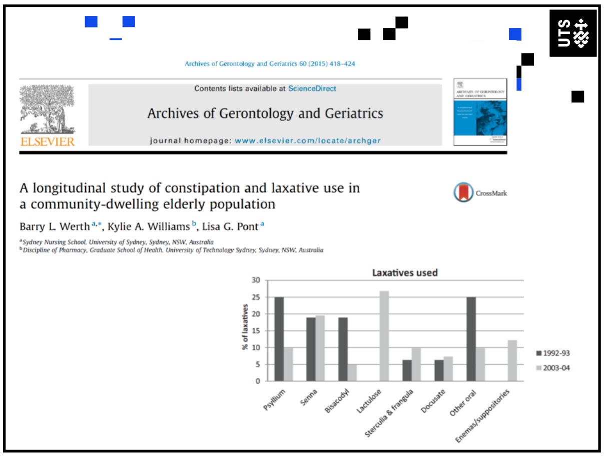


Outpatient antibiotic use in Europe and association with resistance: a cross-national database study

Herman Goossens, Matus Ferech, Robert Vander Stichele, Monique Elseviers, for the ESAC Project Group*



Goosens et al. Lancet 2005



Archives of Gerontology and Geriatrics 60 (2015) 418–424

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

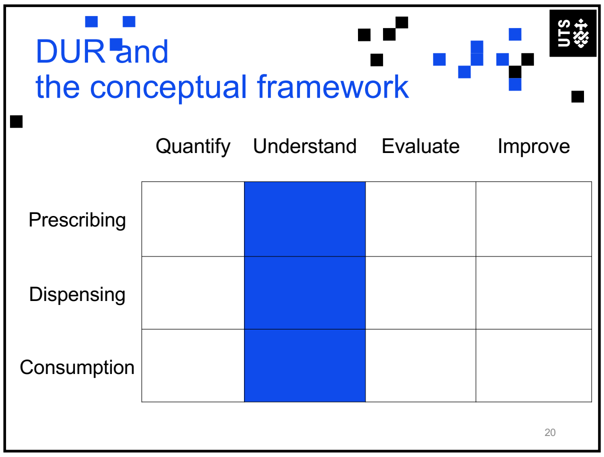
journal homepage: www.elsevier.com/locate/archger

A longitudinal study of constipation and laxative use in a community-dwelling elderly population

Barry L. Werth[a,*], Kylie A. Williams[b], Lisa G. Pont[a]

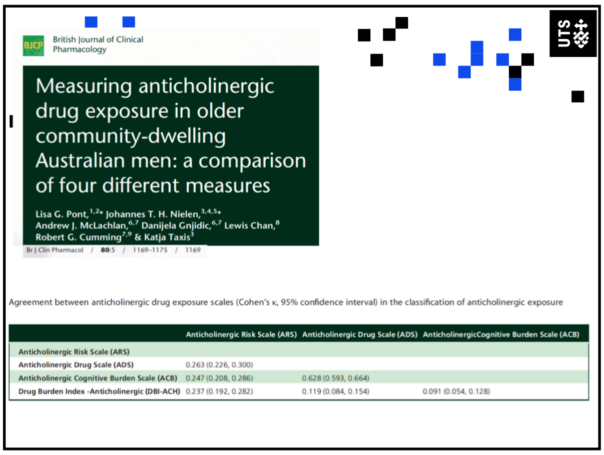
[a] Sydney Nursing School, University of Sydney, Sydney, NSW, Australia
[b] Discipline of Pharmacy, Graduate School of Health, University of Technology Sydney, Sydney, NSW, Australia

Laxatives used
% of laxatives
0
5
10
15
20
25
30
Psyllium
Senna
Bisacodyl
Lactulose
Sterculia & frangula
Docusate
Other oral
Enemas/suppositories
1992-93
2003-04



DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing		■		
Dispensing		■		
Consumption		■		



BJCP British Journal of Clinical Pharmacology

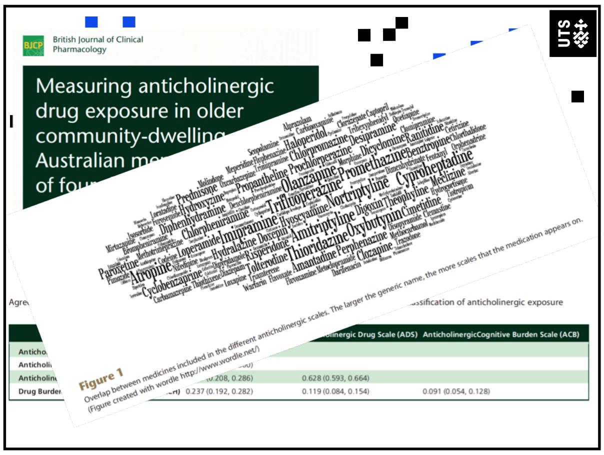
Measuring anticholinergic drug exposure in older community-dwelling Australian men: a comparison of four different measures

Lisa G. Pont,[1,2*] Johannes T. H. Nielen,[3,4,5*] Andrew J. McLachlan,[6,7] Danijela Gnjidic,[6,7] Lewis Chan,[8] Robert G. Cumming[7,9] & Katja Taxis[3]

Br J Clin Pharmacol / 80:5 / 1169–1175 / 1169

Agreement between anticholinergic drug exposure scales (Cohen's κ, 95% confidence interval) in the classification of anticholinergic exposure

	Anticholinergic Risk Scale (ARS)	Anticholinergic Drug Scale (ADS)	AnticholinergicCognitive Burden Scale (ACB)
Anticholinergic Risk Scale (ARS)			
Anticholinergic Drug Scale (ADS)	0.263 (0.226, 0.300)		
Anticholinergic Cognitive Burden Scale (ACB)	0.247 (0.208, 0.286)	0.628 (0.593, 0.664)	
Drug Burden Index -Anticholinergic (DBI-ACH)	0.237 (0.192, 0.282)	0.119 (0.084, 0.154)	0.091 (0.054, 0.128)



BJCP British Journal of Clinical Pharmacology

Measuring anticholinergic drug exposure in older community-dwelling Australian me
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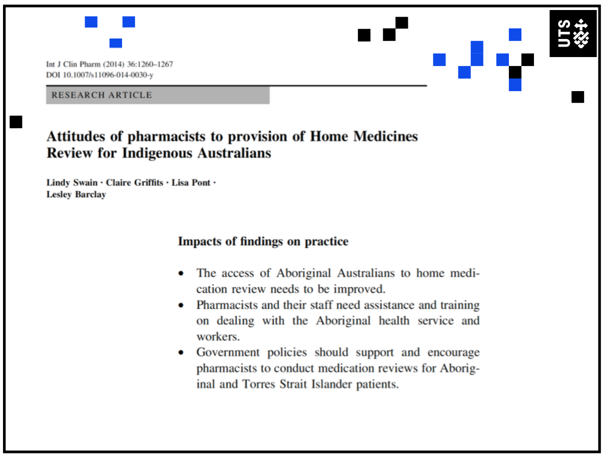
Agre ...ssification of anticholinergic exposure

		...olinergic Drug Scale (ADS)	AnticholinergicCognitive Burden Scale (ACB)
Anticho			
Anticholi			
Anticholin	...(0.208, 0.286)	0.628 (0.593, 0.664)	
Drug Burden	...H) 0.237 (0.192, 0.282)	0.119 (0.084, 0.154)	0.091 (0.054, 0.128)

Alprazolam
Carbinoxamine
Clorazepate
Captopril
Trihexyphenidyl
Quetiapine
Scopolamine
Haloperidol
Chlorpromazine
Desipramine
Clomipramine
Ranitidine
Cetirizine
Chlorthalidone
Orphenadrine
Meperidine
Fluphenazine
Trimipramine
Prochlorperazine
Morphine
Dicyclomine
Benztropine
Fentanyl
Promethazine
Dimenhydrinate
Cyproheptadine
Molindone
Oxcarbazepine
Propantheline
Olanzapine
Meclizine
Hydrocortisone
Tiotropium
Prednisone
Hydroxyzine
Dexchlorpheniramine
Trifluoperazine
Nortriptyline
Theophylline
Loratadine
Furosemide
Diphenhydramine
Hyoscyamine
Digoxin
Cimetidine
Clemastine
Isosorbide
Chlorpheniramine
Imipramine
Amitriptyline
Oxybutynin
Disopyramide
Mirtazapine
Brompheniramine
Methotrimeprazine
Loperamide
Hydralazine
Doxepin
Thioridazine
Perphenazine
Methocarbamol
Trazodone
Paroxetine
Codeine
Nifedipine
Dipyridamole
Risperidone
Clozapine
Pimozide
Atropine
Diazepam
Tolterodine
Amantadine
Metoclopramide
Cyclobenzaprine
Thiothixene
Loxapine
Triamterene
Flavoxate
Fluvoxamine
Darifenacin
Carbamazepine
Warfarin

Figure 1
Overlap between medicines included in the different anticholinergic scales. The larger the generic name, the more scales that the medication appears on.
(Figure created with wordle http://www.wordle.net/)



Int J Clin Pharm (2014) 36:1260–1267
DOI 10.1007/s11096-014-0030-y

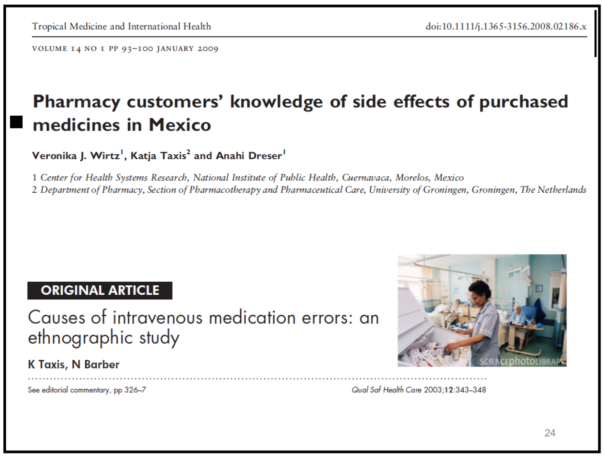
RESEARCH ARTICLE

Attitudes of pharmacists to provision of Home Medicines Review for Indigenous Australians

Lindy Swain · Claire Griffits · Lisa Pont ·
Lesley Barclay

Impacts of findings on practice

- The access of Aboriginal Australians to home medication review needs to be improved.
- Pharmacists and their staff need assistance and training on dealing with the Aboriginal health service and workers.
- Government policies should support and encourage pharmacists to conduct medication reviews for Aboriginal and Torres Strait Islander patients.



Tropical Medicine and International Health doi:10.1111/j.1365-3156.2008.02186.x

VOLUME 14 NO 1 PP 93–100 JANUARY 2009

Pharmacy customers' knowledge of side effects of purchased medicines in Mexico

Veronika J. Wirtz[1], Katja Taxis[2] and Anahi Dreser[1]

1 *Center for Health Systems Research, National Institute of Public Health, Cuernavaca, Morelos, Mexico*
2 *Department of Pharmacy, Section of Pharmacotherapy and Pharmaceutical Care, University of Groningen, Groningen, The Netherlands*

ORIGINAL ARTICLE

Causes of intravenous medication errors: an ethnographic study

K Taxis, N Barber

SCIENCEphotoLIBRARY

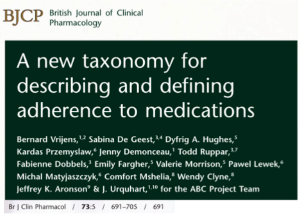
See editorial commentary, pp 326–7

Qual Saf Health Care 2003;**12**:343–348

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing				
Dispensing				
Consumption	Patient compliance/adherence/persistence studies			

A new taxonomy for describing and defining adherence to medications

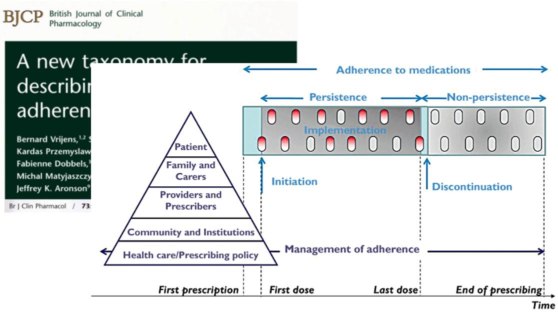

BJCP British Journal of Clinical Pharmacology

A new taxonomy for describing and defining adherence to medications

Bernard Vrijens,[1,2] Sabina De Geest,[3,4] Dyfrig A. Hughes,[5] Kardas Przemyslaw,[6] Jenny Demonceau,[1] Todd Ruppar,[3,7] Fabienne Dobbels,[3] Emily Fargher,[5] Valerie Morrison,[5] Pawel Lewek,[6] Michal Matyjaszczyk,[6] Comfort Mshelia,[8] Wendy Clyne,[8] Jeffrey K. Aronson[9] & J. Urquhart,[1,10] for the ABC Project Team

Br J Clin Pharmacol / 73:5 / 691–705 / 691

A new taxonomy for describing and defining adherence to medications


BJCP British Journal of Clinical Pharmacology
A new taxonomy for
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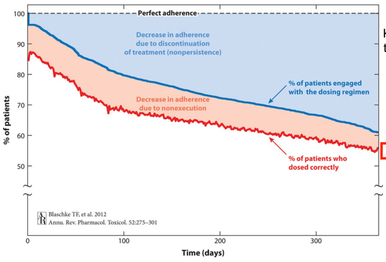
Bernard Vrijens,1,2
Kardas Przemyslaw
Fabienne Dobbels,
Michal Matyjaszczy
Jeffrey K. Aronson
Br J Clin Pharmacol / 73
Adherence to medications
Persistence
Non-persistence
Implementation
Initiation
Discontinuation
Patient
Family and Carers
Providers and Prescribers
Community and Institutions
Health care/Prescribing policy
Management of adherence
First prescription
First dose
Last dose
End of prescribing
Time

Brief Review

Measuring, Analyzing, and Managing Drug Adherence in Resistant Hypertension

Michel Burnier, Gregoire Wuerzner, Harry Struijker-Boudier, John Urquhart

Hypertension. 2013;62:218-225



Blaschke TF, et al. 2012 Annu. Rev. Pharmacol. Toxicol. 52:275–301

Kaplan–Meier plots of the time course of adherence parameters of 36 907 patients prescribed oral medications for one of a variety of medical conditions in 95 studies during the first year of electronic compilation of the patients' dosing histories.

American Heart Association.

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Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing				
Dispensing				
Consumption				

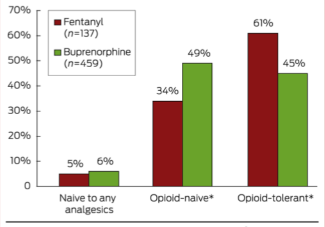
Research

Safety of opioid patch initiation in Australian residential aged care

Svetla Gadzhanova PhD, MSc[1]
Elizabeth E Roughead BPharm, MAppSc, PhD[2]
Lisa G Pont PhD, BPharm, BSc[3]

MJA 203 (7) • 5 October 2015

2 Analgesic use prior to patch initiation



* $P < 0.05$ for difference between fentanyl and buprenorphine initiators (χ^2 test). ◆

International Journal of Clinical Pharmacy (2018) 40:428–435
https://doi.org/10.1007/s11096-017-0583-7

RESEARCH ARTICLE

Antihypertensive-related adverse drug reactions among older hospitalized adults

Tariq M. Alhawassi[1,2] · Ines Krass[2] · Lisa G. Pont[3]

Received: 2 May 2017 / Accepted: 20 December 2017 / Published online: 1 February 2018
© Springer International Publishing AG, part of Springer Nature 2018

This study shows that antihypertensive medications are associated with an increased risk of an ADR leading to hospital admission for older adults.
In our cohort of 500 older adults, one in ten experienced an ADR that was potentially related to their antihypertensive medication either leading to or during their hospital admission.

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frontiers in Pharmacology

ORIGINAL RESEARCH
published: 23 January 2018
doi: 10.3389/fphar.2017.00990

Changes in Prescribing Symptomatic and Preventive Medications in the Last Year of Life in Older Nursing Home Residents

Helene G. van der Meer[1]*, Katja Taxis[1] and Lisa G. Pont[2]

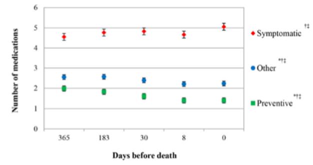


FIGURE 2 | Number of symptomatic, preventive, and other medication in the last year of life. Estimated marginal means (EMMs), adjusted for number of bed days in facility* age†, and number of medication at 365 days before death‡.

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing			**Prescribing quality indicators**	
Dispensing				
Consumption				

Eur J Clin Pharmacol (2004) 59: 833– 840
DOI 10.1007/s00228-003-0696-x

PHARMACOEPIDEMIOLOGY AND PRESCRIPTION

Lisa G. Pont · Petra Denig · Thys van der Molen
Willem Jan van der Veen · Flora M. Haaijer-Ruskamp

Validity of performance indicators for assessing prescribing quality: the case of asthma

Validation process

We validated indicators that targeted sub-optimal treatment patterns related to four steps included in the 1997 National Institutes of Health (NIH guidelines) [12].

Step 1. Under-treatment of short-acting inhaled β-agonists for all asthma patients
Step 2. Under-treatment of inhaled corticosteroids for mild, moderate or severe persistent asthma
Step 3. Inadequate dose of inhaled corticosteroids for moderate or severe persistent asthma
Step 4. Under-treatment of inhaled long-acting β-agonists for severe persistent asthma

Indicator	Relevant asthma severity classes targeted by each indicator (number of patients)	Sensitivity	Positive predictive value
Step-1 indicator	All severity classes (n = 146)	0.86 (0.71–0.95)	0.52 (0.38–0.65)
Step-2A indicator	Severity classes 2, 3 & 4 (n = 95)	0.74 (0.57–0.88)	0.46 (0.33–0.60)
Step-2B indicator	Severity classes 2, 3 & 4 (n = 95)	0.37 (0.19–0.58)	0.71 (0.42–0.92)
Step-3 indicator	Severity classes 3 & 4 (n = 86)	0.07 (0.00–0.32)	0.20 (0.00–0.72)
Step-4 indicator	Severity class 4 (n = 16)	Not validated due to inadequate sample size	

Eur J Clin Pharmacol (2002) 57: 819–825
DOI 10.1007/s00228-001-0395-4

PHARMACOEPIDEMIOLOGY AND PRESCRIPTION

Lisa G. Pont · G.Th. van der Werf
P. Denig · F.M. Haaijer-Ruskamp

Identifying general practice patients diagnosed with asthma and their exacerbation episodes from prescribing data

Table 3 Sensitivity, specificity and predictive values for criteria to identify asthma exacerbation from prescribing data (95% confidence intervals in parentheses)

Asthma exacerbation identification criteria	Sensitivity (95% CI)	Specificity (95% CI)	Positive predictive value (95% CI)	Negative predictive value (95% CI)
Short-course oral corticosteroid	0.23 (0.20–0.28)	0.99 (0.99–0.99)	0.67 (0.59–0.75)	0.93 (0.92–0.94)
Short-course oral corticosteroid or short-course antibiotic	0.55 (0.50–0.60)	0.96 (0.96–0.97)	0.58 (0.53–0.63)	0.95 (0.95–0.96)

IJPP INTERNATIONAL JOURNAL OF Pharmacy Practice
ROYAL PHARMACEUTICAL SOCIETY

IJPP
International Journal of
Pharmacy Practice
International Journal of Pharmacy Practice 2017, 25, pp. 66–74

Research Paper

Validity of prescribing indicators for assessing quality of antibiotic use in Australian general practice

Lisa G. Pont[a], Tessa K. Morgan[b], Margaret Williamson[b], Flora M. Haaijer[c] and Mieke L. van Driel[d]

[a]Centre for Health Systems and Safety Research, Australian Institute of Health Innovation, Macquarie University, North Ryde, [b]NPS MedicineWise, Sydney, NSW, Australia, [c]University of Groningen, Groningen, The Netherlands and [d]University of Queensland, Brisbane, QLD, Australia

	Drug-specific indicators	Validity for monitoring antibiotic resistance	Validity for monitoring benefit to individual patients	Validity for monitoring value for money	Validity fo policy makers
1	Consumption of all antibiotics for systemic use	7 (1.5)	**6** (1.9)	7 (26.8)	8 (5.5)
2	Consumption of penicillins	7 (5.5)	7 (3.8)	8 (67.8)	8 (5.6)
3	Consumption of cephalosporins	7 (2.4)	7 (3.8)	8 (1.5)	8 (3.2)
4	Consumption of macrolides	7 (2.7)	7 (4.3)		
5	Consumption of quinolones	8 (2.6)	6.5 (2.5)		
6	Consumption of combination penicillins	7 (4.1)	**6** (1.9)		
7	Consumption of third- and fourth-generation cephalosporins	8 (6.1)	7 (2.6)		
8	Consumption of quinolones	8 (4.1)	**6** (1.7)		
9	Ratio broad-spectrum to narrow-spectrum antibiotics	7 (3.4)	7 (3.5)		
10	Consumption of antibiotics commonly used for upper respiratory tract infections (URTIs)	7 (1.5)	7 (1.5)		

Antibiotics are indicated for acute cystitis. There is no value in monitoring their use in terms of quality of prescribing. Monitoring which ones are used would be of value. GP 4

Not sure how relevant this is, as it is common practice to give antibiotics for urinary tract infection, the type and duration of treatment much more relevant. GP 1

Mixed methods analysis

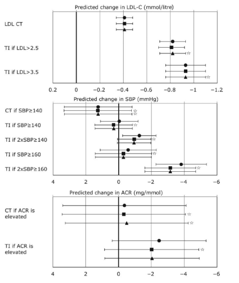
Downloaded from http://qualitysafety.bmj.com/ on August 3, 2015 - Published by group.bmj.com

ORIGINAL RESEARCH

Treatment quality indicators predict short-term outcomes in patients with diabetes: a prospective cohort study using the GIANTT database

Grigory Sidorenkov,[1,2] Jaco Voorham,[1,2] Dick de Zeeuw,[1]
Flora M Haaijer-Ruskamp,[1,2] Petra Denig[1,2]

Prescribing indicator: “a measurable element of prescribing performance for which there is evidence or consensus that it can be used to assess quality”



☆ - adjustment explains significantly more variation in the outcome

Figure 2 Estimated changes (with 95% CIs) in risk factor levels observed per quality indicator, where for each indicator the crude estimate is presented (●), the one adjusted for general characteristics (■), and the change adjusted also for comorbidity (▲). The indicator labels correspond with table 3. ACR, albumin:creatinine ratio; CT, current treatment; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; TI, treatment intensification.

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing				Intervention studies
Dispensing				
Consumption				

Research

Effect of humour therapy on psychotropic medication use in nursing homes

IMAGE: VALDA & JOANNA IN PLAY UP SESSION (LYNNE MALCOLM)

IMAGE: VALDA ENJOYING A SING ALONG (LYNNE MALCOLM)

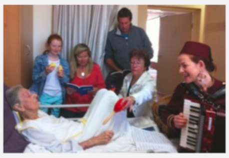


IMAGE: AILEEN & HER FAMILY DURING A PLAY UP SESSION (LYNNE MALCOLM)

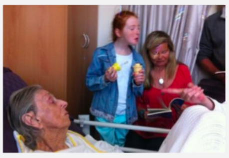


IMAGE: AILEEN WITH HER FAMILY (LYNNE MALCOLM)

DOI: 10.1111/ajag.12319

Research

Effect of humour therapy on psychotropic medication use in nursing homes

Australasian Journal on Ageing, Vol 35 No 4 December 2016, E7–E12
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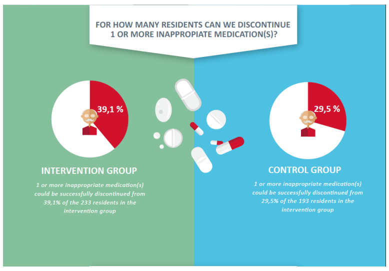
Faculty of Health Sciences, The University of Sydney, Sydney, New South Wales, Australia

Table 1: Prevalence (%) of psychotropic medication use in Australian nursing homes before Play Up program and after Play Up program

	Any psychotropic	Antipsychotics	Benzodiazepines	Antidepressants
Pre-Play Up ($n = 361$)	169 (46.8%)	94 (26.0%)	63 (17.5%)	65 (18.0%)
Post-Play Up ($n = 361$)	151 (41.8%)	82 (22.7%)	52 (14.4%)	61 (16.9%)
Change (%)	−5.00	−3.30	−3.1	−1.1
P value	0.002*	0.024*	0.001*	0.289

*Indicates significant decrease ($P < 0.05$) in prevalence from pre- to post-Play Up period.

Discontinuation of inappropriate medication in nursing home residents (DimNHR study)



Wouters et al, 2014; Wouters et al, Ann Int Med, in press

Reducing the anticholinergic and sedative load in older patients on polypharmacy by pharmacist-led medication review: A randomized controlled trial

Helene G. van der Meer*[1], Hans Wouters*[1], Lisa G. Pont*[2], Katja Taxis*[1]

BMJ Open (in press)

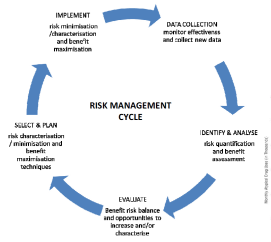
Table 2 Primary outcome - Proportion of patients having a decrease in DBI ≥ 0.5

	Proportion with decrease of DBI ≥ 0.5 (%, n)		Odds ratio (95% CI) *	p-value
	Intervention	Control		
Intention to treat (n=157)	17.3% (13)	15.9% (13)	1.04 [0.47-2.64]	0.927
Per protocol analysis (n=145)	18.5% (12)	16.3% (13)	1.09 [0.45-2.63]	0.857

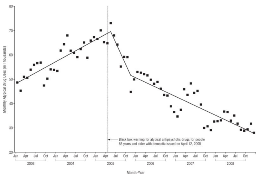
* Binary logistic regression, adjusted for age, gender, number of medication at baseline, level of DBI at baseline.

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing				Risk management
Dispensing				
Consumption				


IMPLEMENT
risk minimisation /characterisation and benefit maximisation
DATA COLLECTION
monitor effectivenss and collect new data
RISK MANAGEMENT CYCLE
IDENTIFY & ANALYSE
risk quantification and benefit assessment
EVALUATE
Benefit risk balance and opportunities to increase and/or characterise
SELECT & PLAN
risk characterisation / minimisation and benefit maximisation techniques

The risk management cycle,
Guideline on Good Pharmacovigilance Practices (Module V) of EMA.

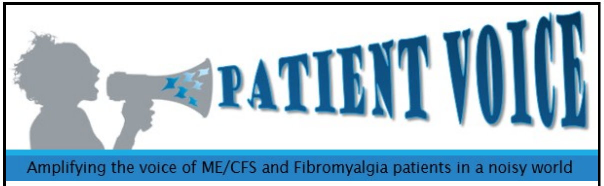


Joinpoint Regression Program analysis for atypical antipsychotics use among elderly patients with dementia. The data points represent patients 65 years and older with dementia (smoothed 6-month averages); the solid line, fitted joinpoint time series. IMS data.

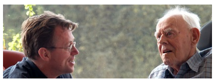
Dorsey et al. Impact of FDA Black Box Advisory on Antipsychotic Medication Use. Arch Intern Med. 2010 January 11; 170(1): 96–103

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing				
Dispensing				
Consumption				Patient education


PATIENT VOICE
Amplifying the voice of ME/CFS and Fibromyalgia patients in a noisy world

Debate & Analysis
Solutions to problematic polypharmacy:
learning from the expertise of patients



British Journal of General Practice, June 2015 | **319**

Article

health:

Lay knowledge, social movements and the use of medicines: Personal reflections

Health
2016, Vol. 20(2) 77–93
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DOI: 10.1177/1363459315619021
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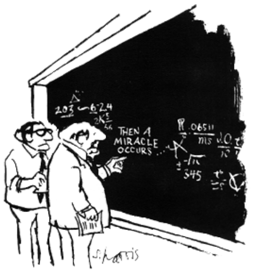
Nicky Britten and Kath Maguire
University of Exeter, UK

Examples of DUR and the conceptual framework

	Quantify	Understand	Evaluate	Improve
Prescribing	Comparisons, benchmarking Health services and policy research			
Dispensing				
Consumption				

Challenges in Drug Utilization Research


THEN A MIRACLE OCCURS

"I think you should be more explicit here in step two."

Challenges in drug utilization research

Descriptive quantitative studies may have problems with poor data validity and limited generalizability

Analytical studies may suffer from the same problems as all pharmacoepidemiological studies, i.e., variation by chance, bias and confounding

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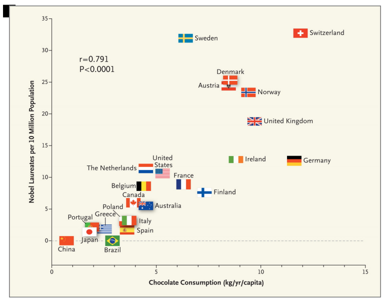
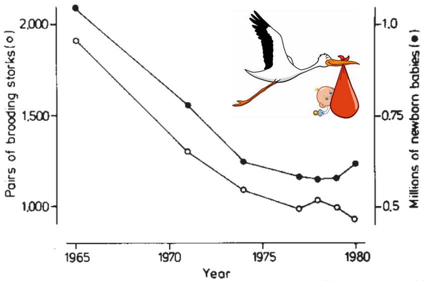


Correlation between Annual Per Capita Chocolate Consumption and the Number of Nobel Laureates per 10 Million Population.

Messerli FH. N Engl J Med 2012;367:1562-1564.

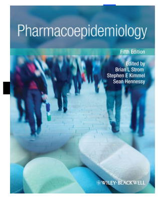
Association between storks and newborn babies in Western Germany 1965-1980



Sies H. Nature 332;495

Final thoughts

- **Drug utilization research**
- explores practice based issues
- using varied methodologies and data sources
- putting the prescriber, supplier and consumer at the centre of the research
- to inform and improve health practice, policy and patient outcomes.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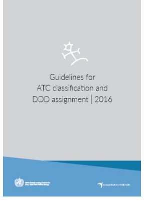
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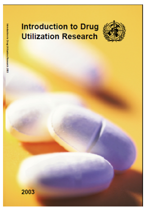
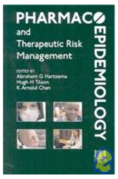
DDD assignment | 2016


Introduction to Drug
Utilization Research
2003


PHARMACOEPIDEMIOLOGY
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Drug Utilization Research
Methods and Applications

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WILEY Blackwell

Monique Elseviers, Björn Wettermark, Anna Birna Almarsdóttir , Morten Andersen, Ria Benko, Marion Bennie, Irene Eriksson, Brian Godman, Janet Krska, Elisabetta Poluzzi, Katja Taxis, Vera Vlahovic-Palcevski, Robert Vander Stichele

Drug Utilization Research (DUR) is an eclectic scientific discipline, integrating descriptive and analytical methods for the quantification, understanding and evaluation of the processes of prescribing, dispensing and consumption of medicines and for the testing of interventions to enhance the quality of these processes. The discipline is closely related and linked mainly to the broader field of pharmacoepidemiology, but also to health outcomes research, pharmacovigilance and health economics.

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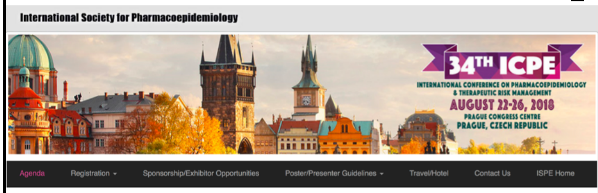
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