The Next Era of Care: Key Roles of the Pharmacist

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A typical Monday?

65 year old woman with chest infection and signs of pneumonia needing admission to hospital

34 year old woman in for repeat prescription of her long term SSRI

Mother at the end of her tether trying to deal with tantrums in her 2 year old, has heard iron deficiency can cause behavior problems

A 85 year old woman who is confused, bought in by her daughter with a bag with 9 medicines in it

A 90 year old woman recently discharged after carpal tunnel release, started on a statin in hospital and anxious about her 'heart condition'
The first era

Professional autonomy

*characterised by protectionism*

The second era

Accountability and market theory

*characterised by measurement & reductionism*

The Problem
The Invisible Pandemic
Original Investigation

**Antihypertensive Medications and Serious Fall Injuries in a Nationally Representative Sample of Older Adults**

Mary E. Tinetti, MD; Ling Han, MD, PhD; David S. H. Lee, PharmD, PhD; Gall J. McAvay, PhD; Peter Podzuwski, PhD; Cary P. Gross, MD; Bingqiang Zhou, PhD; Huaqin Lin, PhD

Original Investigation

**National Trends in US Hospital Admissions for Hyperglycemia and Hypoglycemia Among Medicare Beneficiaries, 1999 to 2011**

Kasia J. Lipska, MD, MHS; Joseph S. Ross, MD; Yun Wang, PhD; Silvio E. Inzucchi, MD; Karl Minges, MPH; Andrew J. Karter, PhD; Elbert S. Huang, MD; Mayo M. Desai, PhD, MPH; Thomas M. Gill, MD; Harlan M. Krumholz, MD, SM

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**Importance.** The increasing intensity of diabetes mellitus management over the past decade may have resulted in lower rates of hyperglycemic emergencies but higher rates of hospital admissions for hypoglycemia among older adults. Trends in these hospitalizations and subsequent outcomes are not known.
Specific Problems

**Morbidity**
falls, balance and strength, cognition and memory problems, sleep, nutrition, fatigue......
LESS IS MORE
Feasibility Study of a Systematic Approach for Discontinuation of Multiple Medications in Older Adults
Addressing Polypharmacy

Doron Garfinkel, MD; Derelie Mangin, MBChB

Arch Intern Med. 2010;170(18):1648-1654

• Over half of drugs discontinued
• 4/5 didn’t have to be restarted
• 80% reported a global improvement in health
• No adverse events from the discontinuations
Evidence-based medicine is the integration of best research evidence with clinical expertise and patient values

*Sackett & Straus* BMJ 1996

Dave Sackett
Research evidence

Clinical state and circumstances

Patients’ preferences and actions

Improved health outcomes

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Focus on the disease

Guidelines, targets and pay for performance structures designed to drive this along single disease lines

Aim for standardisation and adherence

Premise that it doesn’t matter who does it as long as it gets done
The rise of technovigilance

- Quality metrics and pay-for-performance models.
- Aimed at health improvements and professional pride, these requirements have triggered professional passivity, learned helplessness, cynicism, and an industry of compliance, coding and electronic support.
Comparative efficacy and acceptability of 12 new-generation antidepressants: a multiple-treatments meta-analysis

Andrea Cianni, Toshio A Furukawa, Georgia Salanti, John R Geddes, Julian P T Higgins, Rachel Churchill, Hisao Watanabe, Atsuo Nakagawa, Ichiro M Omoori, Hugh McGuire, Michele Tansella, Comado Rambaut

Summary

Background Conventional meta-analyses have shown inconsistent results for efficacy of second-generation antidepressants. We therefore did a multiple-treatments meta-analysis, which accounts for both direct and indirect comparisons, to assess the effects of 12 new-generation antidepressants on major depression.

Methods We systematically reviewed 117 randomised controlled trials (25,928 participants) from 1991 up to Nov 30, 2007, which compared any of the following antidepressants at therapeutic dose range for the acute treatment of unipolar major depression in adults: bupropion, citalopram, duloxetine, escitalopram, fluoxetine, fluvoxamine, mirtazapine, paroxetine, reboxetine, sertraline, and venlafaxine. The main outcomes were the proportion of patients who responded to or dropped out of the allocated treatment. Analysis was done on an intention-to-treat basis.

Findings Mirtazapine, escitalopram, venlafaxine, and sertraline were significantly more efficacious than duloxetine (odds ratios [OR] 1.39, 1.33, 1.30 and 1.27, respectively), fluoxetine (1.37, 1.32, 1.28, and 1.25, respectively), fluvoxamine (1.41, 1.35, 1.30, and 1.27, respectively), paroxetine (1.35, 1.30, 1.27, and 1.22, respectively), and reboxetine (2.03, 1.95, 1.89, and 1.85, respectively). Reboxetine was significantly less efficacious than all the other antidepressants tested. Escitalopram and sertraline showed the best profile of acceptability, leading to significantly fewer discontinuations than did duloxetine, fluvoxamine, paroxetine, reboxetine, and venlafaxine.

Interpretation Clinically important differences exist between commonly prescribed antidepressants for both efficacy and acceptability in favour of escitalopram and sertraline. Sertraline might be the best choice when starting treatment for moderate to severe major depression in adults because it has the most favourable balance between benefits, acceptability, and acquisition cost.

Funding None.
Breakdown by drug -- Journal view

With permission of Dr Erick Turner 2010
Breakdown by drug -- FDA view

With permission of Dr Erick Turner 2010
70-year-old Woman

- COPD
- Diabetes
- High blood pressure
- Arthritis
- Osteoporosis

Boyd C et al JAMA 2005
Guideline Based Disease Treatment

• 19 doses of 12 different medications
• Taken at five times during the day
• 14 non pharmacological activities

10 different possibilities for significant medicine interactions either with other medicines or other diseases

Boyd C et al JAMA 2005
Guideline Based Disease Treatment

• 19 doses of 12 different medications
• Taken at five times during the day
• 14 non pharmacological activities

16 different possibilities for significant medicine interactions either with other medicines or other diseases

Mangin D, in: Prescribing for Women in Primary Care
Risk Society

“A society increasingly preoccupied with the future (and also with safety), which generates the notion of risk”
Antony Giddens

“A systematic way of dealing with the hazards and insecurities imposed by modernisation itself”
Ulrich Bech
PLEASE FEAR ABSOLUTELY EVERYTHING. THANK YOU.

A PUBLIC SERVICE MESSAGE Brought TO YOU BY:

CITIZENS UNITED BY NOTORIOUS TRAUMA STATISTICS.
High blood pressure increases the risk of #KidneyCancer. Learn how to reduce your risk with #MyCancerIQ.

KEEPING YOUR BLOOD PRESSURE WITHIN A HEALTHY RANGE CAN HELP REDUCE THE RISK OF KIDNEY CANCER.
MyCancerIQ.ca

What's your kidney cancer risk?
mycancerIQ.ca
Zygmunt Bauman
“The big carcass of mortality has been sliced from head to tail into thin rashers of fearful, yet curable (or potentially curable) afflictions; they can be now fit neatly into every nook & cranny of life.”

Mortality, Immortality and Other Life Strategies 1992
“Now the whole of life serves the purpose of war against 'causes of death'. The permanent horror can only be dispelled in the bustle of 'doing something about it'........... The outcome, is an 'excessive preoccupation with the risk of death' - as if what was at stake was more than replacing one 'cause' of death by another.”

Mortality, Immortality and Other Life Strategies 1992
Infectious diseases
Heart disease
Cancer

Proportion of total deaths
Patient priorities:
Perverse incentives, unethical outcomes
Cholesterol drugs over age 70

Shepherd J et al. Lancet 2002;360
Pravastatin in elderly individuals at risk of vascular disease (PROSPER): a randomised controlled trial


Summary

Background Although statins reduce coronary and cerebrovascular morbidity and mortality in middle-aged individuals, their efficacy and safety in elderly people is not fully established. Our aim was to test the benefits of pravastatin treatment in an elderly cohort of men and women with, or at high risk of developing, cardiovascular disease and stroke.

Methods We did a randomised controlled trial in which we assigned 5824 men (n=2894) and women (n=3930) aged 70–82 years with a history of, or risk factors for, vascular disease to pravastatin (n=2913). Baseline 4.0 mmol/L to 5.0 mmol/L average and our risk of coronary death or non-fatal stroke. All findings Pravastatin by 34% and reduce to 488 events per 1000. However, incorporation of this finding in a meta-analysis of all pravastatin and all statin trials showed no overall increase in risk. Mortality from coronary disease fell by 2.4% (p=0.045) in the pravastatin group. Pravastatin had no significant effect on cognitive function or disability.

Interpretation Pravastatin given for 3 years reduced the risk of coronary disease in elderly individuals. PROSPER therefore extends to elderly individuals the treatment strategy currently used in middle-aged people.

http://image.thelancet.com/extra/03/Jan25/Fig2.pdf

Interpretation Pravastatin given for 3 years reduced the risk of coronary disease in elderly individuals. PROSPER therefore extends to elderly individuals the treatment strategy currently used in middle-aged people.
OK Grandad, You Look Out the Window and I’ll be Back in 3 Hours

T. Moffitt

With kind permission of Moffitt family
BMJ Open Is there an association between disease ignorance and self-rated health? The HUNT Study, a cross-sectional survey

Pål Jørgensen, Arnulf Langhammer, Steinar Krokstad, Siri Forsmo


ABSTRACT

Objective: To explore whether awareness versus unawareness of thyroid dysfunction, diabetes mellitus or hypertension is associated with self-rated health.

Design: Large-scale, cross-sectional population-based study. The association between thyroid function, diabetes mellitus and blood pressure and self-rated health was explored by multiple logistic regression analysis.


Strengths and limitations of this study

- Sample from a large-scale general population.
- High-prevalent diseases under study; ensuring statistical power in subgroup analyses.
- Study mainly based on self-reported data.
- Cross-sectional study; susceptibility to confounding and impossibility to assume causal relationships.
Risk is different as you age

• 85+ year olds with no history of cardiovascular disease
• Classic risk factors included in the famous Framingham risk score did not predict those at high risk of cardiovascular mortality

De Ruijter et al. BMJ. 2009
• The association of high lipids with mortality flattens out around age 70 then reverses

• Lower BP is associated with poorer cognitive function and falls

• Blood sugar targets suitable for younger individuals may no longer be appropriate in older age. Glucose elevations in older people may be clinically adaptive, protecting from fatigue1

• Hypoglycaemia is a major threat to cognition in older age

1Golomb 2013
Therapeutic positivism

Most people taking long term medicines are not benefiting.

In order for half to benefit the NNT must $\leq 2$. 

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One thing we found during the study was clinicians saying, ‘hey I never thought about stopping people’s statins’
Illness Disease
“Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing ever happened”
Leaping into the void

Era 3
The Moral Era
The principles and practice of whole person medical care. In contrast to the principles and practice of condition, disease or organ specific care.

‘My role is to look after patients and their illnesses, which is very much a counterpoint to what happens in secondary care, where the systems are set up to look after people's diseases.’

In: Reeve J et al JRSM 2013
• There are no trials of the health effects of this approach
• In essence this is a global experiment with no data collection
• Unanticipated consequence of EBM
“If we want more evidence-based practice, we need more practice-based evidence.”

Green, L W. Am J Public Health 2006
Legacy Drugs
Legacy Drugs

Antidepressants  46%
Bisphosphonates  14%
PPIs  45%

Current prescription >60%

Mangin D, Lawson J, Cuppage J et al 2017
The map is not the territory

Alfred Korzybski: Science and Sanity 1933
The map is not the territory....... 

“In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it.”

Jorge Luis Borges Del rigor en la ciencia

In: Ficciones
Clement Valla: Postcards from Google Earth
A life worth living:

“Not least do people differ in their attitude to life. Some cling to it as a miser to his money, and to as little purpose. Others wear it lightly-ready to risk it for a cause, a hope, a song, the wind on their face.

When so many people think of it as a means, the doctor, surely, would be wrong to insist that it is always the first of ends.

Life is not really the most important thing in life.”

Theodore Fox
The Purpose of Medicine
Lancet 1965
Tools for eliciting patient priorities for care?
Making patient values visible in healthcare: a systematic review of tools to assess patient treatment priorities and preferences in the context of multimorbidity

Dee Mangin, Gaibrue Stephen, Verdah Bismah, Cathy Risdon

ABSTRACT
Objectives: To identify studies of existing instruments available for clinicians to record overall patient preferences and priorities for care, suitable for use in routine primary care practice in patients with multimorbidity. To examine the data for all identified tools with respect to validity, acceptability and effect on health outcomes.

Strengths and limitations of this study

- Descriptions of good medical care for people with multimorbidity commonly include terms such as patient centered care and person-focused care.
- Identifying patient priorities and preferences for care is important in providing patient-centred
Patient experiences

• Clinician initiated discussion of preferences & priorities rare
• Requests for medication discontinuation/dose reduction/ observations of side effects: largely negative response
• Multiple clinician issues:
  • Lack of communication: patients felt they were the proxy communicator
  • Managing differing views of different clinicians
• Powerlessness and anxiety:
  Lack of power in hospital / nursing home settings
  Fears for effects on overall care if they raise medication issues
Patient Responses

Self-experimentation with pause and monitor

“I reduced the dose and recorded the effects and I took this back to the doctor, and she wasn’t too pleased but she said ...oh well....”

B 70 years, caregiver for partner at home with dementia
Patient Perspectives

• Patient / caregiver as expert in observation of medication effects
• The necessity for trade-offs: “it doesn’t have to be perfect”
• Need for a medicines co-ordinator who is a generalist
• Need for strong advocacy by, or for, the patient
  “Not everyone is as assertive or can advocate...be informed (like me). I wonder what do they do”  T 78 year old male
No one knows a prescription drug's side effects like the person taking it.

Make your voice heard.
RxISK is a free, independent drug safety website to help you weigh the benefits of any medication against its potential dangers.

Could it be my meds?
All drugs have side effects, but people often don't think the effect they are experiencing is drug-related. This exists even when drugs are being used as prescribed. RxISK provides tools to access information and tools to help you assess the connection between a drug and a side effect.

RxISK 2.0
After months of planning and effort, we are pleased to introduce RxISK 2.0 to replace the wonderful site launched in 2012. Our goal was to make RxISK easier to use, faster, and to narrow the requirements to log in for certain functionality. (Read more)

From the blog...
What Matters to You?

• What are the things you’d like to be able to do that your health stops you?
• Which symptoms do you most want your treatments to help with?
• What don’t you want?
• Which medicine do you want to stop the most?
Fear
The Vision

TAPER

A systematic approach to reducing the burden of polypharmacy for routine prevention in older adults
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“the brilliance with which the mind makes and remakes expectations in a way that makes life worth living”

Young L and Cullen M
“A Good Death: Conversations with East Londoners” 1996
• Person focussed care over time
• Continuity of care
• Access
• Comprehensiveness
P4 Quaternary prevention

Mangin D, Heath I. Multimorbidity and Quaternary Prevention RBMFC 2015
Trust
There is a crack in everything, that's how the light gets in.

(Leonard Cohen)
Thank you!

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Live Content Slide

When playing as a slideshow, this slide will display live content

Social Q&A