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**October 22-25, 2015**

Halic Congress Center  
Istanbul / TURKEY

# QUATERNARY PREVENTION;

The basis for its operationalization  
in the doctor-patient relationship

Armando H. Norman  
Charles D. Tesser



## ORIGINAL ARTICLES

### [The words of prevention, part I: changing the model](#)

Marc Jamouille, Enrique Gavilán, Raquel Vaz Cardoso, María Ana Mariño, Miguel Pizzanelli

[doi](#) [10.5712/rbmfc10\(35\)1062](https://doi.org/10.5712/rbmfc10(35)1062)

[PDF/A](#)

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### [The words of prevention, part II: ten terms in the realm of quaternary prevention](#)

Marc Jamouille, Enrique Gavilán, Raquel Vaz Cardoso, María Ana Mariño, Miguel Pizzanelli,  
Julien Grosjean, Stéfán J. Darmoni

[doi](#) [10.5712/rbmfc10\(35\)1063](https://doi.org/10.5712/rbmfc10(35)1063)

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### [Impact of quaternary prevention as a brief intervention in medical students' clinical decisions: experience from Vietnam](#)

Thi Hoa Vi Tran, Thanh Liem Vo

[doi](#) [10.5712/rbmfc10\(35\)1119](https://doi.org/10.5712/rbmfc10(35)1119)

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### [Quaternary prevention: a gaze on medicalization in the practice of family doctors](#)

Raquel Vaz Cardoso

[doi](#) [10.5712/rbmfc10\(35\)1117](https://doi.org/10.5712/rbmfc10(35)1117)

[PDF/A](#) [PDF/A](#)  
(PORTUGUÊS (BRASIL))

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### [Attention-deficit hyperactivity disorder: preventing overdiagnosis and overtreatment](#)

Jean-Claude St-Onge

[doi](#) [10.5712/rbmfc10\(35\)1014](https://doi.org/10.5712/rbmfc10(35)1014)

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### [Excesos y alternativas de la salud mental en atención primaria](#)

Alberto Ortiz Lobo, Jorge Bernstein

[doi](#) [10.5712/rbmfc10\(35\)1055](https://doi.org/10.5712/rbmfc10(35)1055)

[PDF/A](#) (ESPAÑOL  
(ESPAÑA))

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### [¿Overscreening o prevención a escala humana? Tamizaje excesivo](#)

Miguel Pizzanelli

[doi](#) [10.5712/rbmfc10\(35\)1068](https://doi.org/10.5712/rbmfc10(35)1068)

[PDF/A](#) (ESPAÑOL  
(ESPAÑA))

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### [Surgical pathology in cancer diagnosis: implications for quaternary prevention](#)

Matthieu Yver

[doi](#) [10.5712/rbmfc10\(35\)1057](https://doi.org/10.5712/rbmfc10(35)1057)

[PDF/A](#)

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## REVIEW ARTICLES

### [Incidentalomas: concept, relevance and challenges for medical practice](#)

María Ana Mariño

[doi>](#) [10.5712/rbmfc10\(35\)1053](https://doi.org/10.5712/rbmfc10(35)1053)

[PDF/A](#) [PDF/A \(ESPAÑOL  
\(ESPAÑA\)\)](#)

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## ESSAYS

### [Multimorbidity and Quaternary Prevention \(P4\)](#)

Dee Mangin, Iona Heath

[doi>](#) [10.5712/rbmfc10\(35\)1069](https://doi.org/10.5712/rbmfc10(35)1069)

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### [Philosophical roots of Quaternary Prevention](#)

Daniel Widmer

[doi>](#) [10.5712/rbmfc10\(35\)1128](https://doi.org/10.5712/rbmfc10(35)1128)

[PDF/A](#)

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## MEDICAL EDUCATION

### [Teaching and learning quaternary prevention](#)

Luís Filipe Gomes, Gustavo Gusso, Marc Jamoulle

[doi>](#) [10.5712/rbmfc10\(35\)1050](https://doi.org/10.5712/rbmfc10(35)1050)

[PDF/A](#)

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## EXPERIENCE REPORTS

### [Quaternary prevention as a guideline for the editorial team of an evidence-based medicine journal](#)

Michel De Jonghe

[doi>](#) [10.5712/rbmfc10\(35\)1067](https://doi.org/10.5712/rbmfc10(35)1067)

[PDF/A](#) [PDF/A  
\(PORTUGUÊS \(BRASIL\)\)](#)

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## COMMENTS

### [Unnecessary Overtreatment Index: a useful tool in family practice](#)

Mohammad Zakaria Pezeshki, Sina Pezeshki

[PDF/A](#)

1-2

# P4 vs. OverD/T

- A quick search on PubMed using Boolean descriptors ‘Quaternary Prevention’ and ‘Overdiagnosis’ found 25 and 1630 articles, respectively.

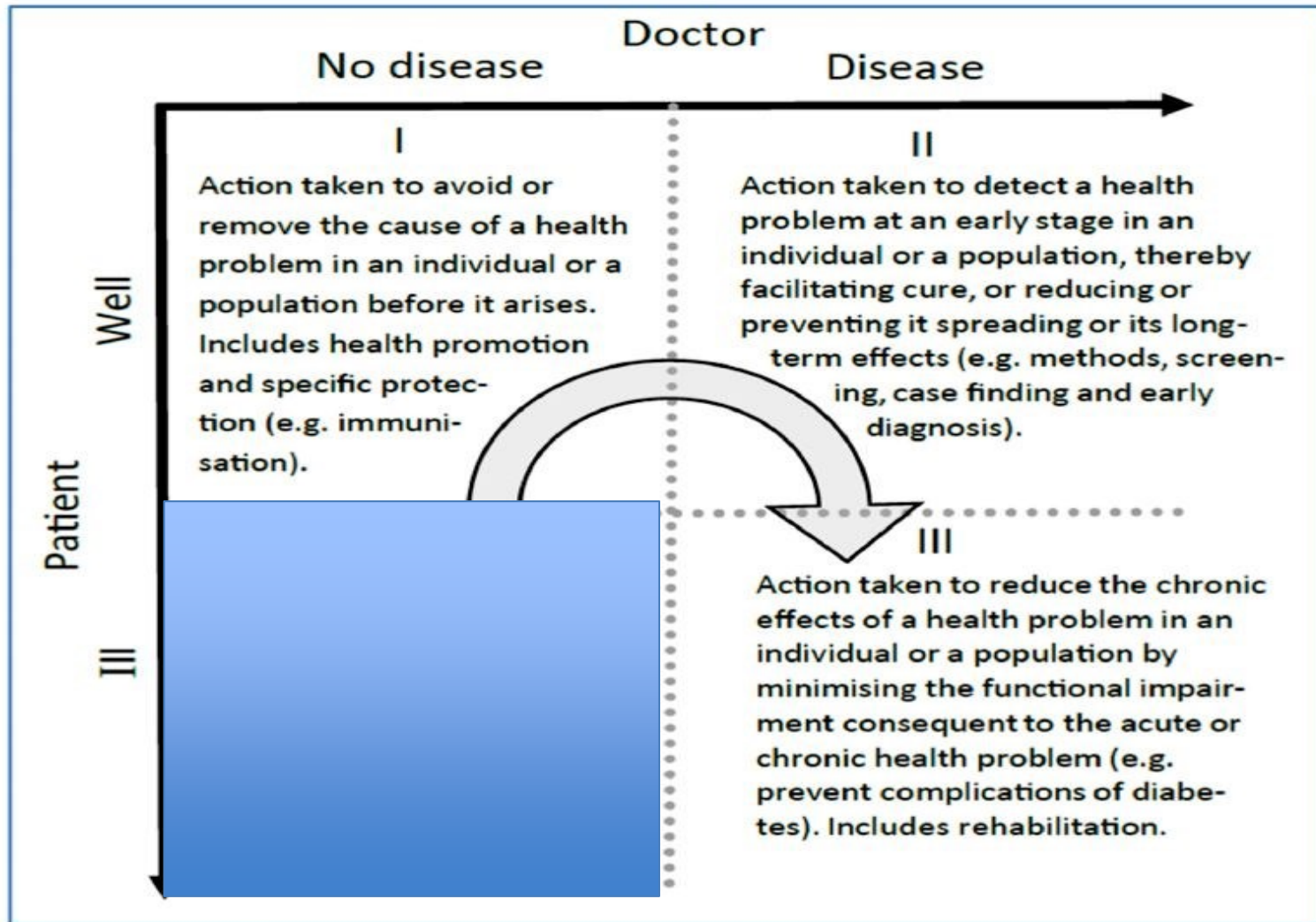
Norman AH, Tesser CD. Quaternary prevention: the basis for its operationalization in the doctor-patient relationship. *Brazilian J Fam Community Med*. 2015;10(35):1–10. Available at: <http://www.rbmfc.org.br/rbmfc/article/view/1011>.

# Background

- P4 definition
- EBM
- Cultural shift – move towards a scientific bureaucratic model of medicine (Harrison et al., 2002).

Harrison S, Moran I, Wood B, Harrison S, Moran M, Wood B. Policy emergence and policy convergence: the case of “scientific-bureaucratic medicine” in the United States and United Kingdom. *Br J Polit Int Relations*. 2002;4(1):1–24. doi:10.1111/1467-856X.41068.

# P4 definition



Jamouille M. Quaternary prevention: first, do not harm. *Brazilian J Fam Community Med.* 2015;10(35):1–3. Available at: <http://www.rbmf.org.br/rbmfc/article/view/1064>.

# The importance of values in evidence-based medicine



Michael P. Kelly<sup>1\*</sup>, Iona Heath<sup>2</sup>, Jeremy Howick<sup>3</sup> and Trisha Greenhalgh<sup>3</sup>

## Abstract

**Background:** Evidence-based medicine (EBM) has always required integration of patient values with 'best' clinical evidence. It is widely recognized that scientific practices and discoveries, including those of EBM, are value-laden. But to date, the science of EBM has focused primarily on methods for reducing bias in the evidence, while the role of values in the different aspects of the EBM process has been almost completely ignored.

**Discussion:** In this paper, we address this gap by demonstrating how a consideration of values can enhance every aspect of EBM, including: prioritizing which tests and treatments to investigate, selecting research designs and methods, assessing effectiveness and efficiency, supporting patient choice and taking account of the limited time and resources available to busy clinicians. Since values are integral to the practice of EBM, it follows that the highest standards of EBM require values to be made explicit, systematically explored, and integrated into decision making.

**Summary:** Through 'values based' approaches, EBM's connection to the humanitarian principles upon which it was founded will be strengthened.

**Keywords:** Evidence-based medicine, Values, Medical ethics



“The drug and medical devices industries increasingly set the research agenda. They define what counts as disease and pre-disease “risk states” (such as low bone density, treatable with alendronate).”

## ANALYSIS

### ESSAY

## Evidence based medicine: a movement in crisis?

**Trisha Greenhalgh and colleagues** argue that, although evidence based medicine has had many benefits, it has also had some negative unintended consequences. They offer a preliminary agenda for the movement’s renaissance, refocusing on providing useable evidence that can be combined with context and professional expertise so that individual patients get optimal treatment

Trisha Greenhalgh *dean for research impact*<sup>1</sup>, Jeremy Howick *senior research fellow*<sup>2</sup>, Neal Maskrey *professor of evidence informed decision making*<sup>3</sup>, for the Evidence Based Medicine Renaissance Group

# Pharmaceutical companies influence on RCTs

- Manipulation of drugs' dose-responses in both study arms (intervention and control);
- Selective recruitment of patients most likely to respond to interventions;
- Adoption of surrogate outcomes;
- Not publishing negative research results.

# P4 paradigm strengthens doctor-patient relationship

## **EBM**

- Downgrades physicians' role
- Population oriented
- Disease/outcome oriented
- High level of abstraction
- Probabilistic reasoning
- Positivist

## **P4**

- Upgrades physicians' role
- Individual oriented
- Illness-outcome oriented
- Low level of abstraction
- Realistic/naturalistic
- Constructivist

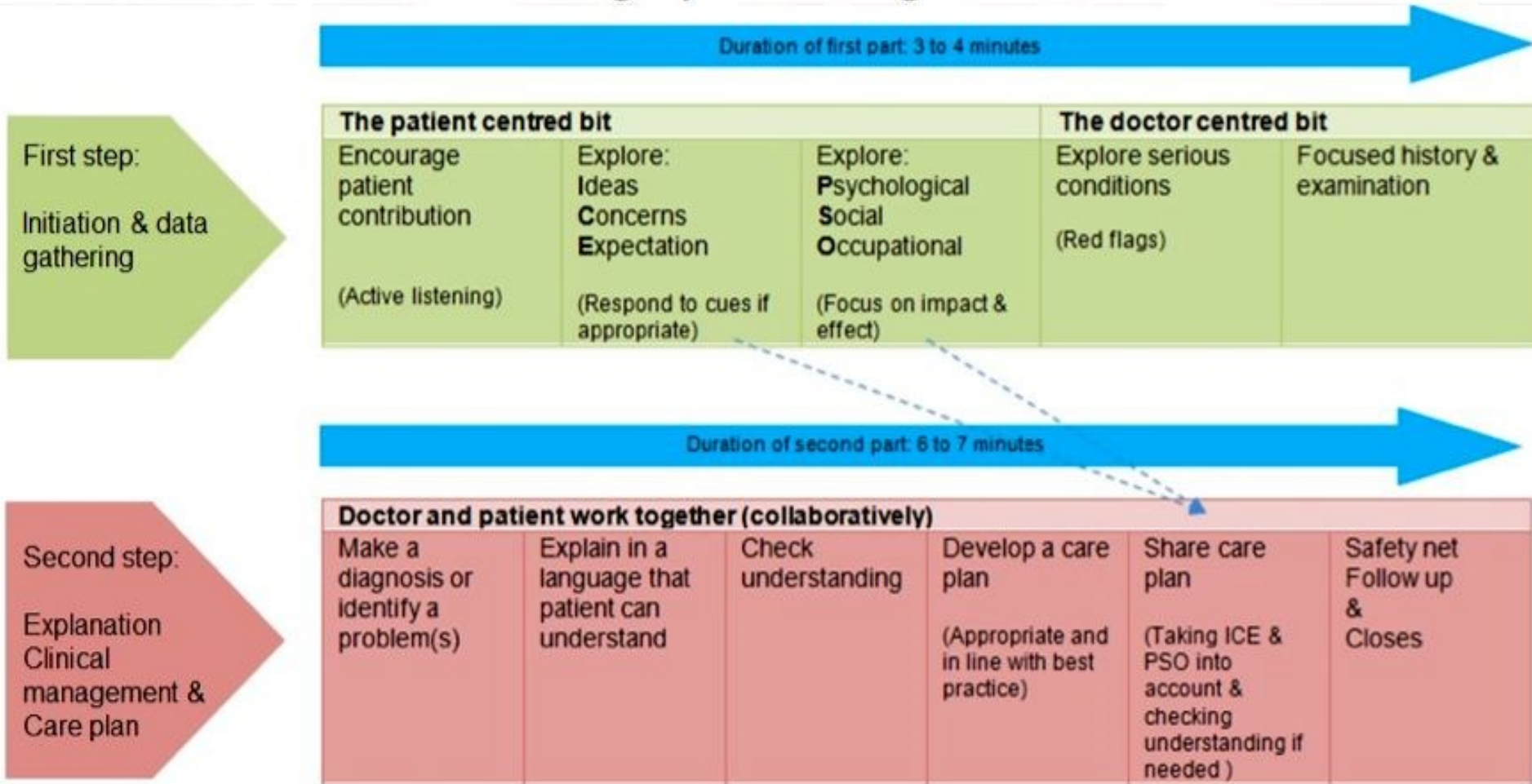
# Doctor-patient relationship

- “Other fields define themselves in terms of content: diseases, organ systems or technologies. Clinicians in other fields form relationships with patients, but in general practice, the relationship is usually prior to content. We know people before we know what their illnesses will be”.

McWhinney IR. The importance of being different McWhinney. Gen Pract. 1996;46(July):433–436.

# Consultation Models

## Enhanced Calgary-Cambridge consultation Model



# P4 in the second step of consultation model

*First moment: the interpretation of patients' problem(s)*

*Second moment: the care plan*

*Based on:*

- Disease concept
- Explanatory models

*Based on:*

- ICE (Ideas, Concerns and Expectations)
- PSO (Psychological, Social and Occupational);
- Present-future framework

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## Continuum of risk and severity

Epidemiologic research has demonstrated that “disease is nearly always a quantitative rather than a categorical or qualitative phenomenon, and hence it has no natural definition”.

Rose explains that statistically there is a ‘continuum of risk and severity’, since nature expresses itself in a gradient that ranges from asymptomatic, oligo-symptomatic, symptomatic to frankly manifested.



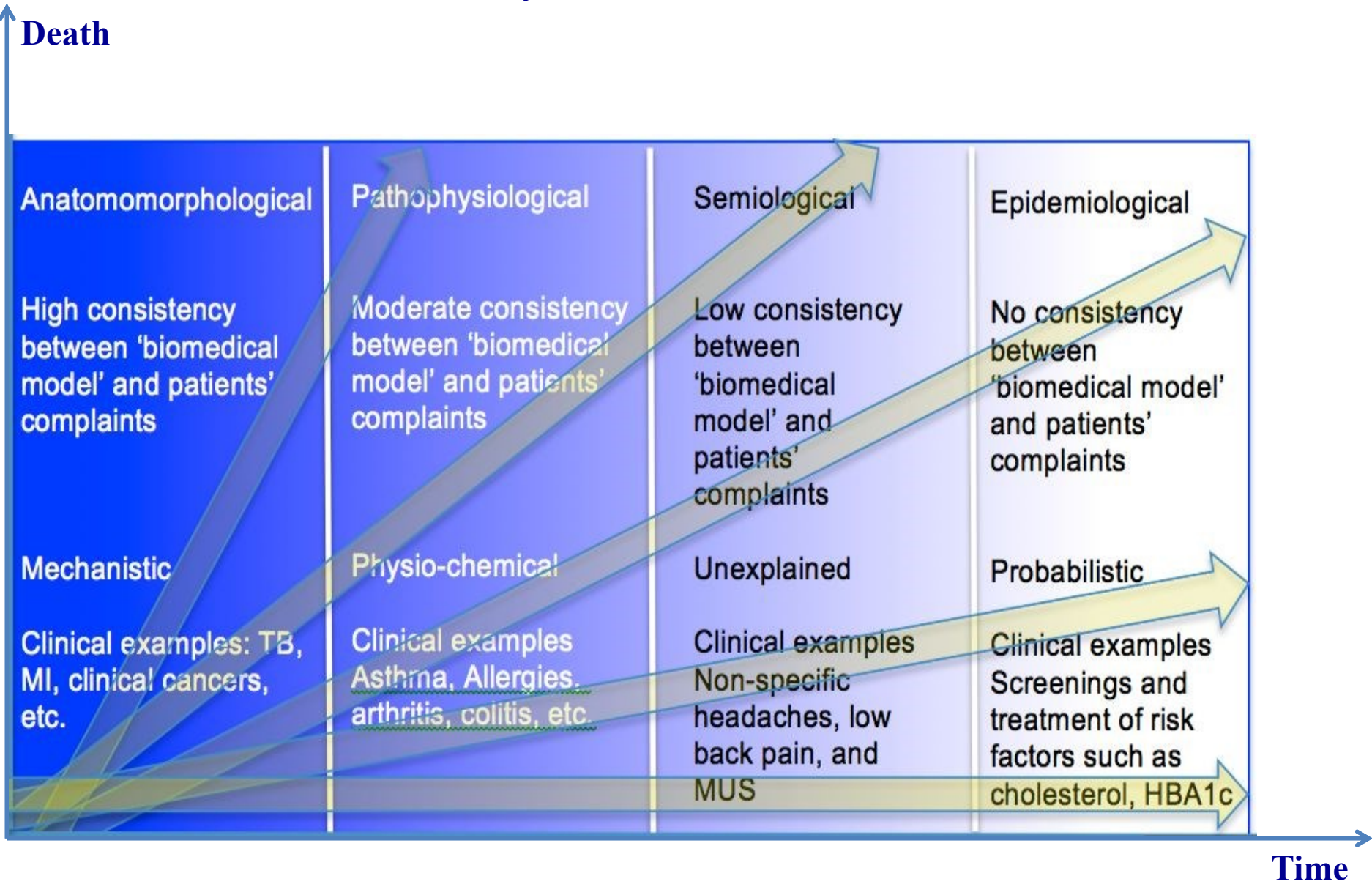
Undifferentiated clinical scenarios

### ROSE'S STRATEGY OF PREVENTIVE MEDICINE

GEOFFREY ROSE  
WITH COMMENTARY BY  
KAY-TEE KHAW & MICHAEL MARMOT

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# Continuum of severity and risk & disease constitutive axes





# Interpretative approaches of illnesses: ontological and dynamic

## Ontological Approach

- Conceives diseases as ‘entities’ exterior to people, that invade them locating themselves in body parts; or are defects (lesions) inside the body, whose meanings vary according to history and cultures. In modern medicine, they are related to bacteria, external agents, and genes lesions. The ontological conception has often been linked to a *medical practice that directs their efforts to the exact classification of disease processes (diagnostic definition)*, seeking to identify disturbed organs and lesions as sole causes and sources of symptoms.

## Dynamic Approach

- Conceives diseases from an imbalance between the forces present in human beings, nature and society that are inside and outside the individuals. Thus, it focuses on the patient as a whole and in its environment, avoiding connecting disease disorders to a particular body organs or sole causes. Addresses the situation in terms of *complex processes over which multiple influences are possible and co-exist*, considering the person as a whole unit and changeable complex whose psychological, social, and biological aspects are inseparable and inter-influencing, albeit often presented with localised symptoms.

# Dynamic Approach

- This approach addresses patients' problems and illnesses by valuing their illness experiences, managing a wide range of symptoms (usually not easily framed in terms of pathology) and constructing contextualised interpretations that give some meaning to the patients' experiences and contribute to therapeutic processes using time, easy access and continuity of care as allies.
- We want to acknowledge patients complaints without necessarily needing to label them as 'disease category'.

# Mental Health: the case of depression

- That caused by a lack of serotonin (i.e. ontological approach based on physiopathological explanation).
- Commonly, clinicians make analogies with diabetes and the lack of insulin in the brain (“replacement therapy”).
- Psychotropic drugs have a wide range of effects throughout the body, many of which are harmful
- This type of analogy to a ‘chemical hormone-like replacement’ must be strongly avoided.
- No scientific confirmation of this hypothesis, and
- Little is known about the interactions between psychosocial conditions and biochemical processes (receptors and neural pathways) related to mental disorders.

# As stated by Peter Gøtzsche:

- ‘There is no chemical imbalance to begin with, but when treating mental illness with drugs, we create a chemical imbalance, an artificial condition that the brain tries to counteract. This means that you get worse when you try to stop the medication. An alcoholic also gets worse when there is no more alcohol, but this does not mean that he lacked alcohol in the brain when he started drinking [...] The vast majority of doctors harm their patients further by telling them that the withdrawal symptoms mean that they are still sick and still need the medication’.

Gøtzsche P. Psychiatry Gone Astray. Mad in America: science, psychiatry and community. 2014 Jan 28. Available from::

<http://www.madinamerica.com/2014/01/psychiatry-gone-astray/>

# Second moment: the care plan

- This moment is based on patients':
  - ICE (Ideas, Concerns and Expectations);
  - PSO (Psychological, Social and Occupational);
- Differentiate the present suffering from a potential or future suffering.

# Optimizing P4 into the care plan: present-future framework

- We should focus our attention on patients' present suffering and/or on the severity of it.
- This improves the risk-benefit ratio for an intervention, as long as this intervention is supported by the best available evidences.
- “The more projected into the future the possibility of suffering, the worse the risk-benefit ratio and the higher the chances of harm by the medical intervention”.
- P4 requires this clarity in differentiating present illness/suffering from the probability of future disease or suffering.

## Editorials

# Type 2 Diabetes: Updated Evidence Requires Updated Decision Making

 PRINT  COMMENTS

SHARE   

ALLEN F. SHAUGHNESSY, PharmD, MMedEd, and DEBORAH R. ERLICH, MD, MMedEd, Tufts University, Boston, Massachusetts

DAVID C. SLAWSON, MD, University of Virginia, Charlottesville, Virginia

*Am Fam Physician.* 2015 Jul 1;92(1):22.

### ► **Related article:** Management of Blood Glucose with Noninsulin Therapies in Type 2 Diabetes

Treatment of patients with type 2 diabetes mellitus seems simple: aim for close-to-normal fasting blood glucose and A1C levels. However, as discussed in the article by George et al. in this issue of *AFP*, normalizing blood glucose levels benefits only a small subset of patients.<sup>1</sup> A1C levels should be low enough to decrease symptoms but not low enough to risk hypoglycemia. For many patients, this range is 8% to 9% with a fasting blood glucose level less than 200 mg per dL (11.1 mmol per L).

- 17 years ago the UKPDS showed no mortality benefit and limited benefit, if any, in morbidity due to tight control of HBA1c.

## Breast cancer mortality in organised mammography screening in Denmark: comparative study

Karsten Juhl Jørgensen, researcher,<sup>1</sup> Per-Henrik Zahl, senior researcher,<sup>2</sup> Peter C Gøtzsche, professor<sup>1</sup>

## Twenty five year follow-up for breast cancer incidence and mortality of the Canadian National Breast Screening Study: randomised screening trial

 OPEN ACCESS

Anthony B Miller *professor emeritus*<sup>1</sup>, Claus Wall *data manager*<sup>1</sup>, Cornelia J Baines *professor emerita*<sup>1</sup>, Ping Sun *statistician*<sup>2</sup>, Teresa To *senior scientist*<sup>3</sup>, Steven A Narod *professor*<sup>1,2</sup>

## BMC Women's Health



Research article

Open Access

## Overdiagnosis in organised mammography screening in Denmark. A comparative study

Karsten J Jørgensen\*<sup>1</sup>, Per-Henrik Zahl<sup>2</sup> and Peter C Gøtzsche<sup>1</sup>



The product is intended to aid and supplement, not substitute for, the expertise and judgement of physicians, pharmacists or other healthcare professionals. All information is provided on the basis that the healthcare practitioners responsible for patient care will retain full and sole responsibility for deciding any treatment to prescribe or dispense for all patients and, in particular whether the use of information provided by the product is safe, appropriate, or effective for any particular patient or in any particular circumstances.

## Patient Data

Sex  Male  Female

Age

Systolic BP  mmHg

BMI  Kg/m<sup>2</sup>

Postcode  Recognised

Townsend score

Total cholesterol  mmol/L

HDL cholesterol  mmol/L

Ethnicity

## Medical History

Smoking status 

- Family history of CVD
- Treated for hypertension
- Diabetic
- Atrial fibrillation
- Rheumatoid arthritis
- Chronic renal disease
- Personal history of CVD

 Statins Save to Record

**10yr QRISK®2 Score: 11.87%**

Absolute Variables

Sex  Male  Female

Age

Receiving BP-affecting treatment

Average of last two BPs  mmHg

Currently receiving or has received cholesterol-affecting treatment

Last pre-treatment total cholesterol  mmol/L

Last pre-treatment HDL cholesterol  mmol/L

Smoker within the last five years

Adjusting Factors


South East Asian descent

Family history of premature CVD

ECG showing LVH

Fasting glucose > 6.1 mmol/L

Triglyceride level > 1.7 mmol/L

 [View the effect of Statins](#)

On cholesterol-affecting treatment since 12 Jan 2011 but no recordings before this date, so will use 1.0 mmHg  
FH premature CVD (FH: Ischaemic heart disease at less than 60 years (XE0oG)) recorded on 25 Jun 1998

**Absolute 10yr CVD Risk: 25.0%**

**Adjusted 10yr CVD Risk: 37.49%**

# Predictor CV mortality calculator devices

- Framingham and JBS2 are based on the American Framingham equations. These equations are of limited use in the UK because they were developed in a historic US population.
- The equations overestimate risk by up to 50 per cent in most contemporary northern European populations, particularly for people living in more affluent areas.
- The equations underestimate risk in higher risk populations, such as people who are the most socially deprived.

BMA, NHS Employers, & NHS Commissioning Board,  
2013, p. 156.

# Prevention


## Removal measures

- *Consists of 'removing or reducing some unnatural exposure in order restore a state of biological normality' (Rose, 1992, p. 148).*
- Guidance, counselling and treatment (individual and collective) to smoke cessation, reduce sedentary behaviour, reduce excessive alcohol intake, improve diet quality with agroecological fruits and vegetables, etc.

## Additional measures

- *Consist of 'adding some other unnatural factor in the hope of conferring protection' (Rose, 1992, p. 148).*
- Intake or application of drugs, diagnostic tests, vaccines and other biological products (not habitual or autonomous use), physical or chemical hazards whose potential risk/harm ratio are significantly higher since the susceptibility before the intervention is low (asymptomatic).

# Guideline for operationalizing P4 in family medicine

<b>Quaternary Prevention</b>				
<b>Time</b>		<b>PRESENT ILLNESS</b>		<b>FUTURE ILLNESS</b>
<b>Axes</b>	Anatomopathological	Physiopathological	Semiological	Epidemiological
<b>Clinical feature</b>	Well-defined	Moderately defined	Undefined/ Complex	Immaterial/Risk
<b>Approach</b>	Ontological/Dynamic	Preferably Dynamic	Dynamic	Probabilistic 'removal' prevention measure
<b>Care plan Lab tests &amp; treatments</b>	Directed to the condition (i.e. tuberculosis, angina pectoris, COPD)	According to the degree of impairment and/or severity of symptoms (i.e. asthma: mild, moderate and severe)	Rule out red flags Avoid excess of symptomatic and wait disease progression (watchful waiting)	Discourage check-ups and/or screening (ex: PSA, mammogram)

# P4 and Enhanced Calgary-Cambridge consultation Model

Duration of first part: 3 to 4 minutes

First step:  
Initiation & data gathering

The patient centred bit			The doctor centred bit		
Encourage patient contribution	Explore: Ideas Concerns Expectation	Explore: Psychological Social Occupational	Explore serious conditions (Red flags)	Focused history & examination	
(Active listening)	(Respond to cues if appropriate)	(Focus on impact & effect)			

Duration of second part: 6 to 7 minutes

Second step:  
Explanation  
Clinical management & Care plan

Doctor and patient work together (collaboratively)					
Make a diagnosis or identify a problem(s)	Explain in a language that patient can understand	Check understanding	Develop a care plan (Appropriate and in line with best practice)	Share care plan (Taking ICE & PSO into account & checking understanding if needed)	Safety net Follow up & Closes

Inserting into second step:  
Quaternary Prevention

Diagnostic and explanation phase			Care plan phase		
Prefer a dynamic approach for explaining the problem(s)	Avoid jargons and labelling  Careful use of words	Check understanding	Differentiate present suffering from future suffering	Opt for 'less' prevention  Avoid screening and the medicalization of primary prevention	Undifferentiated cases:  Allow for watchful waiting and careful usage of Lab tests & medication

# Conclusion

- The complex nature of PHC settings poses limitations to any consultation model;
- The doctor-patient relationship harbours two key moments (diagnosis and treatment plan) for applying quaternary preventive measures;
- The presented framework offers a general guide for implementing quaternary prevention in doctor-patient relationship that is relevant for both service practices and teaching settings such as family and community medicine residency programmes;
- P4 requires health professionals the attitude of maintaining a close continued and personalised care which values patients' experiences, protecting them from the deviations induced by therapeutic eagerness and diagnostic automatism.



## 21<sup>a</sup> Conferência Mundial dos Médicos de Família da WONCA

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