

## Assessment, Determinants & Economics of Medication Compliance & Persistence Forum

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## Compliance / adherence & persistence in context

- Most patients are non-compliant some of the time
- Median persistence with treatments for chronic diseases ranges from 3-5 years
- Non-compliance has a substantial health and economic burden
- Many initiatives ongoing to improve compliance for better outcomes

## Compliance / adherence & persistence: An international perspective

- National Council on Patient Information and Education - USA



## NCPIE recommendations (1)

- Elevate patient adherence as a critical health care issue
- Agree on a common adherence terminology that will unite all stakeholders
- Create a public/private partnership to mount a unified national education campaign to make patient adherence a national health priority
- Establish a multidisciplinary approach to adherence education and management
- Immediately implement professional training and increase the funding for professional education on patient medication adherence

## NCPIE recommendations (2)

- Address the barriers to patient adherence for patients with low health literacy
- Create the means to share information about best practices in adherence education and management
- Develop a curriculum on medication adherence for use in medical schools and allied health care institutions
- Seek regulatory changes to remove road-blocks for adherence assistance programs
- Increase the federal budget and stimulate rigorous research on medication adherence

## Compliance / adherence & persistence: An international perspective

- Ascertaining Barriers for Compliance: policies for safe, effective and cost-effective use of medicines in Europe



## ABC project

- To obtain European consensus on terminology used in the field of non-compliance
- To identify the determinants of non-compliance with short-term and long-term treatment
- To obtain insight in current practices of compliance management
- To assess the effectiveness of compliance-enhancing interventions
- To estimate the cost-effectiveness of compliance-enhancing interventions
- To develop policy recommendation for promoting patient compliance in European healthcare

## Compliance / adherence & persistence: An international perspective

- National Institute for Health & Clinical Excellence - UK

Issue date: January 2009

### Medicines adherence

Involving patients in decisions about prescribed medicines and supporting adherence

## NICE recommendations

- Patient involvement in decisions about medicines (communication, increasing patient involvement, understanding the patient's beliefs, knowledge and concerns about medicines, providing information)
- Supporting adherence (assessing adherence, interventions to increase adherence)
- Reviewing medicines
- Communication between healthcare professionals

## Compliance / adherence & persistence: An international perspective

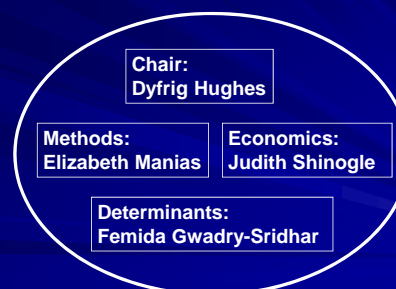
- National Prescribing Service



## National Prescribing Service

- Identifies gaps in the ways medicines are used and who is most at risk in order to develop targeted strategies.
- Adds to the body of knowledge on 'what works' and 'what doesn't work' in promoting and improving Quality Use of Medicines for consumers.
- Tests innovative models and methods for achieving sustainable improvements in the use of medicines and consumer outcomes.

## Medication Compliance & Persistence SIG: Working Group Leaders



## Medication Compliance & Persistence SIG: Goals

Methods & Analyses Standards	Economic Issues	Determinants
Develop standards for analyses of medication compliance and treatment persistence and their relationship to health outcomes Assessment of the general aspects relating to properties of compliance measures	Incorporating non-compliance and non-persistence in economic evaluations Impact of non-compliance and non-persistence on healthcare costs	Conceptual framework of the determinants of compliance Systematic review of interventions to improve compliance

## Analyses Standards Working Group

Ian Barron PharmD, MSc  
Femida Gwadry-Sridhar, PhD, RPh  
Dyfrig Hughes, PhD  
Elizabeth Manias, PhD, RN, RPh (Chair)  
Andrew Peterson, BS, PharmD  
Anuja Roy, MS  
Allison Williams, PhD, RN

### Recent achievements – Prospective checklist

- A checklist for the conduct, reporting and reviewing of **prospective** analyses of studies of compliance and persistence
  - Gwadry-Sridhar F, Manias E, Zhang Y, Roy A, Yu-Isenberg K, Hughes D, Nichol M. A framework for planning and critiquing medication compliance and persistence research using prospective study designs. *Clinical Therapeutics* 2009;31(2):421-35

### Recent achievements – Retrospective checklist

- A checklist for the conduct, reporting and reviewing of **retrospective** analyses of studies of compliance and persistence
  - Peterson AM, Nau DP, Cramer JA, Benner J, Gwadry-Sridhar F, Nichol M. A checklist for medication compliance and persistence studies using retrospective databases. *Value Health* 2007 Jan-Feb;10(1):3-12

### Current activities: General aspects relating to properties of compliance measures

- Assessment of properties of compliance measures (manuscript in preparation)
  - Details different measures used in assessing compliance and the implications for their use
  - Addresses some of the variants in the literature about measures used in assessing compliance
  - Examines how these measures may impact on data analyses

### New project (1)

- Defining non-compliance: re-examining the 80% threshold and refill gaps
  - An arbitrary cut-off of 80% may not adequately characterize patient behaviour
  - Incorporating the pharmacokinetic and pharmacodynamic profile of the drug is equally important as is the disease being treated

## Methodology (1)

- Examining the limitations of the 80% threshold by looking at a 60-90% variation
- The threshold's impact on clinical importance will be studied using examples of different drug classes with different properties
- Simulate clinical outcomes based on different thresholds
- Illustrate the importance of refill gaps in therapy as an additional metric affecting clinical outcomes
- The timing and frequency of refill gaps will also be considered

## New project (2)

- Initial compliance rates & variables influencing initial compliance
  - What are the rates of initial compliance to medications?
  - What variables influence a patient's willingness to take a medication for the first time?

## Methodology (2)

- Comprehensive review of initial medication compliance studies
- Search strategies to identify controlled trials measuring initial compliance will be developed
- From this, areas of research and potential methodologies will be identified and discussed

## Economics of Compliance & Persistence Working Group

Judith Shinogle (chair)  
 Monali Bhosle  
 Warren Cowell  
 Joyce Cramer  
 Rachel Elliott  
 Dyfrig Hughes  
 Tamas Koncz  
 Maximilian Lebmeier  
 Pamela Peele  
 Maria Pisu  
 Maribel Salas

## Costs of non-compliance / persistence

- What are the costs of non-compliance and non-persistence in osteoporosis, diabetes, hypertension, cardiovascular events, infectious diseases, asthma, rheumatoid arthritis, hypercholesterolaemia and schizophrenia?
- Financial costs incurred by health care systems / payers on a population basis. i.e. direct medical costs, not personal out-of-pocket costs, or indirect costs

## Recent achievements – Costs of diabetes

- Quantifying the costs of non-compliance and non-persistence with medicines for the management of diabetes
  - Salas M, Hughes D, Zuluaga A, Vardeva K, Lebmeier M. Costs of Medication Non-adherence in Patients with Diabetes Mellitus: A Systematic Review and Critical Analysis of the Literature. Value in Health (forthcoming)

## New project (1)

- Non-adherence to medication costs with dual-eligible Medicare/Medicaid rheumatoid arthritis patients
  - To determine the costs of medication non-adherence among dual eligible Medicare and Medicaid patients with rheumatoid arthritis

## Methodology (1)

- Medicare database that contains a 5% random sample of all Medicare beneficiaries 1999-2006 (n=3,346,982) and select all Medicare-Medicaid dual eligible individuals with a rheumatoid arthritis diagnosis
- Determine the total costs of medical care by degree of non-adherence to antirheumatic medications

## New project (2)

- Financial Incentives Analysis
  - Various payers are contemplating the use of compliance measures as a performance indicator in payment incentives to providers
  - This paper will examine current methodologies that employ compliance in payment plans

## Methodology (2)

- Review current literature
- Discuss with various payers
  - Medicare
  - Medicaid
  - Private
- Develop outline of issues

## Determinants of Compliance & Persistence Working Group

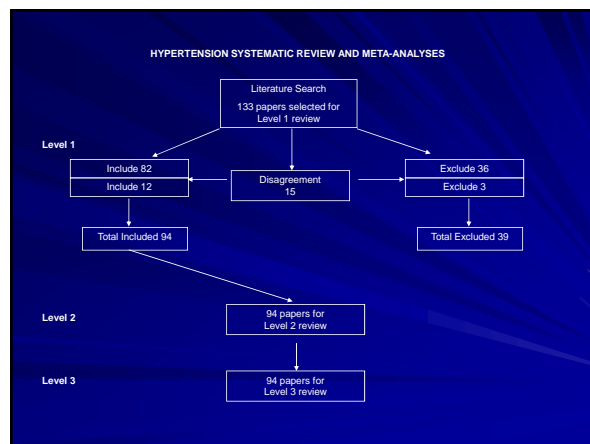
Femida Gwadry-Sridhar (Chair)  
 Maribel Salas  
 Lincy Lal  
 Anuja Roy  
 Elizabeth Manias  
 Joanne LaFleur  
 Veronica Decker  
 Sangeeta Budhia  
 John Zeber  
 Dyfrig Hughes  
 Judy Shinogle  
 Jasmanda Wu  
 Monali Bhosle

## Compliance-enhancing interventions

- Which interventions are most effective in improving compliance for a range of diseases?
- What are the key characteristics (determinants) of successful interventions?
- Are these interventions theoretically based?
- Are they reproducible? Can we translate findings?

## Recent achievements –

- Hypertension paper – review completed
- What type of interventions
- Whether compliance affected
- Meta-analyses of six RCTs possible



## Hypertension Paper Forest Plot

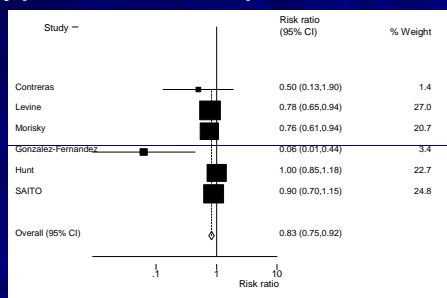


Figure 1. Forest plot showing the comparison of educational strategies (intervention) and no educational strategies (control) for compliance. CI, confidence interval.

## New project (1)

- Medication compliance in breast cancer treatment
  - Systematic literature review to examine compliance in breast cancer patients
  - Interventions to improve patient compliance with oral chemotherapy and hormonal therapy in breast cancer will be examined

## Methodology (1)

- Qualitative and quantitative analysis will be conducted to determine which interventions have a positive impact on improving compliance
- The review process will consist of three levels of inclusion/exclusion determination with two reviewers per study at each level
- A total of 5 reviewers will be involved in the process

## New project (2)

- Interventions for self-management: recommendations for good practices
  - With the increased burden of health care resources, self-management is being touted as an important strategy to improve compliance
  - There are many definitions around self-management strategies and interventions which have varied results
  - A review of strategies and their respective success or failures will be examined

## Methodology (2)

- We will look at what types of interventions are used and whether the interventions differ by disease
- We will assess the efficacy or effectiveness of self-management strategies on compliance and possibly clinical outcomes, if they are reported
- Make recommendations for future prospective research

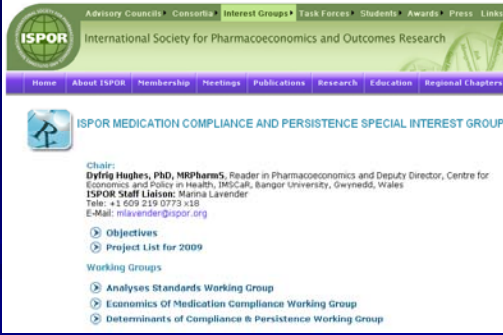
## Call for volunteers

- **LEADERSHIP GROUP:** the small group of SIG members who develop the SIG initiatives through actively participating in a Working Group
  - **REVIEW GROUP:** the large group of SIG members who respond to / comment on 'work products' produced by the Leadership Working Group members
- \* You may belong to several review groups

## Sign up..

- Please contact:
- Marina Lavender, ISPOR Liaison  
MLavender@ispor.org
- **SIGN-UP SHEET** with handout of slides

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**ISPOR MEDICATION COMPLIANCE AND PERSISTENCE SPECIAL INTEREST GROUP**

Chair:  
**Dyfrig Hughes, PhD, MRPharmS**, Reader in Pharmacoeconomics and Deputy Director, Centre for Economics and Policy in Health, IMScAH, Bangor University, Gwynedd, Wales  
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▾ Objectives  
 ▾ Project List for 2009

Working Groups

- ▾ Analyses Standards Working Group
- ▾ Economics Of Medication Compliance Working Group
- ▾ Determinants of Compliance & Persistence Working Group

## and finally....

- My pleasure to hand over the SIG chair to -
- **Femida Gwadry-Sridhar PhD, RPh, MSc, BSc Phm**
  - Assistant Professor, Departments of Medicine and Physiology & Pharmacology, University of Western Ontario
  - Assistant Professor, Department of Clinical Epidemiology & Biostatistics, McMaster University
  - Associate Director, Critical Care Research Network
  - Director of Health Informatics, Lawson Health Research Institute
  - CIHR New Investigator - Knowledge Translation, London, ON, Canada