

American Geriatrics Society/Physician Consortium for Performance
Improvement®/National Committee for Quality Assurance

Geriatrics
Physician Performance Measurement Set

November 2006

Geriatrics
Work Group

Caroline Blaum, MD (Co-Chair)
Carol M. Mangione, MD (Co-Chair)

Chris Alexander, III, MD, FACP
Bruce Bagley, MD
Ronald Bangasser, MD
Patricia P. Barry, MD, MPH
Frederick W. Burgess, MD, PhD
Gary S. Clark, MD, MMM, CPE
Eric Coleman, MD, MPH
Stephen R. Connor, PhD
Gail A. Cooney, MD
Roger Dmochowski, MD
Catherine DuBeau, MD
Joyce Dubow
Mary Fermazin, MD, MPA
Sanford I. Finkel, MD
Terry Fulmer, PhD
Peter Hollmann, MD

David P. John, MD
Peter Johnstone, MD, FACR
Flora Lum, MD
Diane E. Meier, MD
Alvin "Woody" H. Moss, MD
Jaya Rao, MD, MHS
Sam J. W. Romeo, MD, MBA
David J. Satin, MD
Gregory B. Seymann, MD
Knight Steel, MD
Eric Tangalos, MD
Joan M. Teno, MD, MS
David J. Thurman, MD, MPH
Mary Tinetti, MD
Laura Tosi, MD
Neil S. Wenger, MD

American Geriatrics Society
Jill Epstein

National Committee for Quality Assurance
Min Gayles Kim, MPH

Centers for Medicare & Medicaid Services
Susan Nedza, MD, MBA, FACEP
Sylvia Publ, MBA, RHIA

American Medical Association
Karen Kmetik, PhD
Heidi Bossley, MSN, MBA
Joanne Schwartzberg, MD
Patricia Sokol, RN, JD

Facilitators
Timothy F. Kresowik, MD
Rebecca A. Kresowik

Joint Commission on Accreditation of Healthcare Organizations
Lisa Buczkowski, RN, MS

Intended Audience and Patient Population:

These measures are designed for geriatricians and any physician caring for patients 65 years and older.

These clinical performance measures are designed for individual quality improvement. Some of the measures may also be appropriate for accountability if appropriate sample sizes and implementation rules are achieved.

Accountability Measures:**Care Coordination**

Measure # 1: Medication Reconciliation

End-of-Life Care

Measure # 2: Advance Care Plan

Urinary Incontinence

Measure # 3: Assessment of Presence or Absence of Urinary Incontinence in Women Aged 65 Years and Older

Measure # 4: Characterization of Urinary Incontinence in Women Aged 65 Years and Older

Measure # 5: Plan of Care for Urinary Incontinence in Women Aged 65 Years and Older

Falls

Measure # 6: Screening for Fall Risk

Quality Improvement Measure:**Urinary Incontinence**

Measure # 7: Urinary Incontinence – Medication Overuse in Women Aged 65 Years and Older

Geriatrics
Measure # 1: Medication Reconciliation
Appropriate for the ambulatory care setting only

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Hospitalization</p> <p>Yes/No – Patient discharged from an inpatient facility (eg, hospital, skilled nursing facility, or rehabilitation facility)</p> <p>Yes/No – Office visit within 60 days following discharge</p> <p>Yes/No – Patient had a reconciliation of the discharge medications with the current medication list in the medical record documented</p> <p>Yes/No – Documentation of system reason(s) for not reconciling medications</p> <p>Sources</p> <p>Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who had a reconciliation of the discharge medications with the current medication list in the medical record documented</p> <p>Denominator: All patients aged 65 years and older discharged from any inpatient facility (eg, hospital, skilled nursing facility, or rehabilitation facility) and seen within 60 days following discharge in the office by the physician providing on-going care</p> <p>Denominator Exclusions: Documentation of system reason(s) for not reconciling medications (eg, information necessary to reconcile medications was not available during the office visit)</p> <p>Measure: Percentage of patients aged 65 years and older discharged from any inpatient facility (eg, hospital, skilled nursing facility, or rehabilitation facility) and seen within 60 days following discharge in the office by the physician providing on-going care who had a reconciliation of the discharge medications with the current medication list in the medical record documented</p>	<p>Per Patient</p> <p>Whether or not the patient aged 65 years and older discharged from any inpatient facility (eg, hospital, skilled nursing facility, or rehabilitation facility) and seen within 60 days following discharge in the office by the physician providing on-going care had a reconciliation of the discharge medications with the current medication list in the medical record documented</p> <p>Per Patient Population</p> <p>Percentage of patients aged 65 years and older discharged from any inpatient facility (eg, hospital, skilled nursing facility, or rehabilitation facility) and seen within 60 days following discharge in the office by the physician providing on-going care who had a reconciliation of the discharge medications with the current medication list in the medical record documented</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>No trials of the effects of physician acknowledgment of medications post-discharge were found. However, patients are likely to have their medications changed during a hospitalization. One observational study showed that 1.5 new medications were initiated per patient during hospitalization, and 28% of chronic medications were canceled by the time of hospital discharge.¹ Another observational study showed that at one week post-discharge, 72% of elderly patients were taking incorrectly at least one medication started in the inpatient setting, and 32% of medications were not being taken at all.² One survey study faulted the quality of discharge communication as contributing to early hospital readmission, although this study did not implicate medication discontinuity as the cause.³ (ACOVE⁴)</p> <p>First, a medication list must be collected. It is important to know what medications the patient has been taking or receiving prior to the outpatient visit in order to provide quality care. This applies regardless of the setting from which the patient came — home, long-term care, assisted living, etc.</p> <p>The medication list should include all medications (prescriptions, over-the-counter, herbals, supplements, etc.) with dose, frequency, route, and reason for taking it. It is also important to verify whether the patient is actually taking the medication as prescribed or instructed, as sometimes this is not the case.</p> <p>At the end of the outpatient visit, a clinician needs to verify three questions:</p> <ol style="list-style-type: none"> 1. Based on what occurred in the visit, should any medication that the patient was taking or receiving prior to the visit be 		

discontinued or altered?

2. Based on what occurred in the visit, should any prior medication be suspended pending consultation with the prescriber?
3. Have any new prescriptions been added today?

These questions should be reviewed by the physician who completed the procedure, or the physician who evaluated and treated the patient.

If the answer to *all three questions* is “no,” the process is complete.

If the answer to *any question* is “yes,” the patient needs to receive clear instructions about what to do — all changes, holds, and discontinuations of medications should be specifically noted. Include any follow-up required, such as calling or making appointments with other practitioners and a timeframe for doing so. (IHI⁵)

Rationale for the measure:

Medications are often changed while a patient is hospitalized. Continuity between inpatient and on-going care is essential. Data elements required for the measure can be captured and the measure is actionable by the physician.

Geriatrics
Measure # 2: Advance Care Plan
 Appropriate for all healthcare settings

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year</p> <p>Yes/No –Patient with documentation of a surrogate decision maker or advance care plan in the medical record</p> <p>Yes/No – Documentation of patient reason(s) for not documenting surrogate decision maker or advance care plan in the medical record</p> <p>Sources</p> <p>Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients with documentation of a surrogate decision maker or advance care plan in the medical record</p> <p>Denominator: All patients aged 65 years and older</p> <p>Denominator Exclusions: Documentation of patient reason(s) for not documenting a surrogate decision maker or advance care plan in the medical record (eg, patient does not wish to discuss advance care planning)</p> <p>Measure: Percentage of patients aged 65 years and older with documentation of a surrogate decision maker or advance care plan in the medical record</p>	<p>Per Patient</p> <p>Whether or not the patient aged 65 years and older had documentation of a surrogate decision maker or advance care plan in the medical record</p> <p>Per Patient Population</p> <p>Percentage of patients aged 65 years and older with documentation of a surrogate decision maker or advance care plan in the medical record</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>The National Hospice and Palliative Care Organization provides the Caring Connection web site (www.caringinfo.org). This web site provides resources and information on end-of-life care, including a national repository of state by state advance directives.</p> <p><u>Advance directives</u> are designed to respect patient’s autonomy and determine his/her wishes about future life-sustaining medical treatment if unable to indicate wishes. Key interventions and treatment decisions to include in advance directives are: resuscitation procedures, mechanical respiration, chemotherapy, radiation therapy, dialysis, simple diagnostic tests, pain control, blood products, transfusions, and intentional deep sedation.</p> <p>Oral statements</p> <ul style="list-style-type: none"> • Conversations with relatives, friends, and clinicians are most common form; should be thoroughly documented in medical record for later reference. • Properly verified oral statements carry same ethical and legal weight as those recorded in writing. <p>Instructional advance directives (DNR orders, living wills)</p> <ul style="list-style-type: none"> • Written instructions regarding the initiation, continuation, withholding, or withdrawal of particular forms of life-sustaining medical treatment. • May be revoked or altered at any time by the patient. • Clinicians who comply with such directives are provided legal immunity for such actions. <p>Durable power of attorney for health care or health care proxy</p> <ul style="list-style-type: none"> • A written document that enables a capable person to appoint someone else to make future medical treatment choices for him or her in the event of decisional incapacity. (AGS⁶) 		
<p>Rationale for the measure:</p> <p>It is essential that the patient’s wishes regarding medical treatment be established as much as possible prior to incapacity. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Geriatrics

Measure # 3: Assessment of Presence or Absence of Urinary Incontinence in Women Aged 65 Years and Older
Appropriate for the ambulatory care setting only

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year Yes/No –Presence or absence of urinary incontinence assessed</p> <p>Yes/No – Documentation of medical reason(s) for not assessing for the presence or absence of urinary incontinence</p> <p>Sources Electronic medical record Paper medical record Flowsheet Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who were assessed for the presence or absence of urinary incontinence within 12 months</p> <p>Urinary Incontinence is defined as any involuntary leakage of urine.</p> <p>Denominator: All female patients aged 65 years and older</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not assessing for the presence or absence of urinary incontinence</p> <p>Measure: Percentage of female patients aged 65 years and older who were assessed for the presence or absence of urinary incontinence within 12 months</p>	<p>Per Patient Whether or not the female patient aged 65 years and older who were assessed for the presence or absence of urinary incontinence within 12 months</p> <p>Per Patient Population Percentage of female patients aged 65 years and older who were assessed for the presence or absence of urinary incontinence within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>Strategies to increase recognition and reporting of UI are required and especially the perception that it is an inevitable consequence of aging for which little or nothing can be done. (IC1⁷)</p> <p>Patients with urinary incontinence should undergo a basic evaluation that includes a history, physical examination, measurement of postvoid residual volume, and urinalysis. (ACOG⁸) (Level C)</p> <p>Health care providers should be able to initiate evaluation and treatment of UI basing their judgment on the results of history, physical examination, postvoiding residual and urinalysis. (IC1⁷) (Grade B for women)</p>		
<p>Rationale for the measure: Female patients may not volunteer information regarding incontinence so they should be asked by their physician. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Geriatrics

Measure # 4: Characterization of Urinary Incontinence in Women Aged 65 Years and Older
Appropriate for the ambulatory care setting only

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year</p> <p>Yes/No – Patient has a diagnosis of urinary incontinence</p> <p>Yes/No –Urinary incontinence characterized (may include one or more of the following: frequency, volume, timing, type of symptoms and how bothersome to the patient)</p> <p>Sources</p> <p>Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients whose urinary incontinence was characterized (may include one or more of the following: frequency, volume, timing, type of symptoms and how bothersome to the patient) at least once within 12 months</p> <p>Denominator: All female patients aged 65 years and older with a diagnosis of urinary incontinence</p> <p>Denominator Exclusions: None</p> <p>Measure: Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence whose urinary incontinence was characterized at least once within 12 months</p>	<p>Per Patient</p> <p>Whether or not the female patient aged 65 years and older with a diagnosis of urinary incontinence whose urinary incontinence was characterized at least once within 12 months</p> <p>Per Patient Population</p> <p>Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence whose urinary incontinence was characterized at least once within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>Patients with urinary incontinence should undergo a basic evaluation that includes a history, physical examination, measurement of postvoid residual volume, and urinalysis. (ACOG⁸) (Level C)</p> <p>Health care providers should be able to initiate evaluation and treatment of UI basing their judgment on the results of history, physical examination, postvoiding residual and urinalysis. (ICI⁷) (Grade B for women)</p> <p>Bladder diaries provide valuable information on severity and bladder capacity in older persons without disability in the community. (ICI⁷) (Grade B)</p>		
<p>Rationale for the measure:</p> <p>Treatment indications are dependent on the severity and impact on the patient. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Geriatrics

Measure # 5: Plan of Care for Urinary Incontinence in Women Aged 65 Years and Older
Appropriate for the ambulatory care setting only

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year</p> <p>Yes/No – Patient has a diagnosis of urinary incontinence</p> <p>Yes/No – Patient with a documented plan of care for urinary incontinence</p> <p>(Plan of care may include behavioral interventions [eg, bladder training, pelvic floor muscle training, prompted voiding], referral to specialist, surgical treatment, reassess at follow-up visit, lifestyle interventions, addressing co-morbid factors, or pharmacologic therapy)</p> <p>Sources</p> <p>Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients with a documented plan of care for urinary incontinence at least once within 12 months</p> <p>(Plan of care may include behavioral interventions [eg, bladder training, pelvic floor muscle training, prompted voiding], referral to specialist, surgical treatment, reassess at follow-up visit, lifestyle interventions, addressing co-morbid factors, or pharmacologic therapy)</p> <p>Denominator: All female patients aged 65 years and older with a diagnosis of urinary incontinence</p> <p>Denominator Exclusions: None</p> <p>Measure: Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence with a documented plan of care for urinary incontinence at least once within 12 months</p>	<p>Per Patient</p> <p>Whether or not the female patient aged 65 years and older with a diagnosis of urinary incontinence had a documented plan of care for urinary incontinence at least once within 12 months</p> <p>Per Patient Population</p> <p>Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence with a documented plan of care for urinary incontinence at least once within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>All conservative management options used in younger adults can be used in selected frail, older, motivated people. This includes:</p> <ul style="list-style-type: none"> • bladder retraining • pelvic muscle exercises including biofeedback and/or electro-stimulation (IC17) (Grade B) <p>Pharmacologic agents, especially oxybutynin and tolterodine, may have a small beneficial effect on improving symptoms of detrusor overactivity in women. (ACOG⁸) (Level A)</p> <p>Oxybutynin and potentially other bladder relaxants can improve the effectiveness of behavioral therapies in frail older persons. (IC17) (Grade B)</p>		
<p>Rationale for the measure:</p> <p>A treatment option should be documented for the patient with incontinence. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Geriatrics
 Measure # 6: Screening for Fall Risk
 Appropriate for all non-acute settings (excludes emergency departments and acute care hospitals)

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year Yes/No – Patient was screened for fall risk (2 or more falls in the past year or any fall with injury in the past year)</p> <p>Yes/No – Documentation of medical reason(s) for not screening for fall risk</p> <p>Sources Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who were screened for fall risk (2 or more falls in the past year or any fall with injury in the past year) at least once within 12 months</p> <p>A fall is defined as a sudden, unintentional change in position causing an individual to land at a lower level, on an object, the floor, or the ground, other than as a consequence of sudden onset of paralysis, epileptic seizure, or overwhelming external force.⁹</p> <p>Denominator: All patients aged 65 years and older</p> <p>Denominator Exclusion: Documentation of medical reason(s) for not screening for fall risk (eg, patient is not ambulatory)</p> <p>Measure: Percentage of patients aged 65 years and older who were screened for fall risk (2 or more falls in the past year or any fall with injury in the past year) at least once within 12 months</p>	<p>Per Patient Whether or not the patient aged 65 years and older was screened for fall risk (2 or more falls in the past year or any fall with injury in the past year) at least once within 12 months</p> <p>Per Patient Population Percentage of patients aged 65 years and older who were screened for fall risk (2 or more falls in the past year or any fall with injury in the past year) at least once within 12 months</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>All older persons who are under the care of a health professional (or their caregivers) should be asked at least once a year about falls. (AGS/BGS/AAOS¹⁰)</p> <p>Older persons who present for medical attention because of a fall, report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should have a fall evaluation performed. This evaluation should be performed by a clinician with appropriate skills and experience, which may necessitate referral to a specialist (e.g., geriatrician). (AGS/BGS/AAOS¹⁰)</p> <p>Older people in contact with health care professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the falls. (NICE¹¹) (Grade C)</p> <p>Older people reporting a fall or considered at risk of falling should be observed for balance and gait deficits and considered for their ability to benefit from interventions to improve strength and balance. (NICE¹¹) (Grade C)</p>		
<p>Rationale for the measure: Patients may not volunteer information regarding falls. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Geriatrics

Measure # 7: Urinary Incontinence – Medication Overuse in Women Aged 65 Years and Older Appropriate for the ambulatory care setting only

Quality Improvement Measure - This measure was not designed as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p>Per Patient, Per Year</p> <p>Yes/No – Patient has a diagnosis of urinary incontinence</p> <p>Yes/No – Patient was prescribed medication to treat urinary incontinence</p> <p>Yes/No – Patient had behavioral therapy trial documented</p> <p>Yes/No – Documentation of medical reason(s) for no behavioral therapy trial</p> <p>Yes/No – Documentation of patient reason(s) for no behavioral therapy trial</p> <p>Sources</p> <p>Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>*adequate data source only if new codes are developed specific to the intent of this measure</p>	<p>Numerator: Patients who had a trial of behavioral therapy documented</p> <p>Behavior interventions may include bladder training, pelvic floor muscle training, or prompted voiding.</p> <p>Denominator: All female patients aged 65 years and older with a diagnosis of urinary incontinence who were prescribed a medication to treat the urinary incontinence</p> <p>Denominator Exclusions:</p> <p>Documentation of medical reason(s) for no behavioral therapy trial (eg severe functional impairment)</p> <p>Documentation of patient reason(s) for no behavioral therapy trial</p> <p>Measure: Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence who were prescribed a medication to treat the urinary incontinence who had a trial of behavioral therapy documented</p>	<p>Per Patient</p> <p>Whether or not the female patient aged 65 years and older with a diagnosis of urinary incontinence was prescribed a medication to treat the urinary incontinence who had a trial of behavioral therapy documented</p> <p>Per Patient Population</p> <p>Percentage of female patients aged 65 years and older with a diagnosis of urinary incontinence who were prescribed a medication to treat the urinary incontinence who had a trial of behavioral therapy documented</p>
<p>The following clinical recommendation statements are quoted <u>verbatim</u> from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>Behavioral therapy, including bladder training and prompted voiding, improves symptoms of urge and mixed incontinence and can be recommended as a noninvasive treatment in many women. (Level A) (ACOG⁸)</p> <p>Antimuscarinic agents for urgency or mixed incontinence should be considered in properly selected frail elderly who have had a full trial of behavioral interventions yet have not met their continence goal (Grade C) (ICI⁷)</p>		
<p>Rationale for the measure:</p> <p>Patients should have a trial of behavioral therapy before pharmacologic therapy. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

INFORMATION ON DEVELOPMENT METHODOLOGY FOR NON-RATED GUIDELINES – CARE COORDINATION

Rogers⁶

A consensus group identified safe practices and suggested implementation strategies. Four collaborative learning sessions were offered, and teams monitored their progress and shared successful strategies and lessons learned. Reports from participating teams and an evaluation survey were then used to identify successful techniques for reconciling medications.

INFORMATION ON DEVELOPMENT METHODOLOGY FOR NON-RATED GUIDELINES – END OF LIFE CARE

American Geriatrics Society (AGS) Geriatrics at your fingertips Statement on Methodology⁵

Geriatrics at your fingertips does not attempt to explain in detail the rationale underlying the strategies presented. In many instances, these strategies have been derived from guidelines published by organizations such as the Agency for Healthcare Research and Quality, the American Geriatrics Society, the American Heart Association, and the American Diabetes Association. Many of the guidelines can be obtained from the National Guideline Clearinghouse (<http://www.guidelines.gov>). When no such guidelines exist, the strategies recommended herein represent the best opinions of the authors and the experts they have asked to review the chapters. In an effort to be comprehensive yet concise, references have been provided sparingly, but many others that are relevant are available from the organizations mentioned or in the most recent edition of the AGS *Geriatrics Review Syllabus*.

EVIDENCE CLASSIFICATION/RATING SCHEME - URINARY INCONTINENCE

American College of Obstetricians and Gynecologists (ACOG) rating scheme for the strength of the evidence²

Level A: Recommendations are based on good and consistent scientific evidence

Level B: Recommendations are based on limited or inconsistent scientific evidence

Level C: Recommendations are based primarily on consensus and expert opinion

Third International Consultation on Incontinence (ICI) Levels of Evidence and Grades of Recommendations¹

Levels of Evidence

Firstly, it should be stated that any level of evidence may be positive (the therapy works) or negative (the therapy doesn't work). A level of evidence is given to each individual study.

Level 1 evidence (incorporates Oxford 1a, 1b) usually involves one or more randomized controlled trials (RCTs) or 'all or none' studies in which no treatment is not an option, for example in vesicovaginal fistula.

Level 2 evidence incorporates Oxford 2a, 2b and 2c) includes "low" quality RCT (eg, <80% follow up) or meta-analysis (with homogeneity) of good quality prospective 'cohort studies.' These may include a single group when individuals who develop the condition are compared with others from within the original cohort group. There can be parallel cohorts, where those with the condition in the first group are compared with those in the second group. Level 3 evidence (incorporates Oxford 3a, 3b and 4) includes:

- Good quality retrospective 'case-control studies' where a group of patients who have a condition are matched appropriately (eg, for age, sex, etc) with control individuals who do not have the condition
- Good quality 'case series' where a complete group of patients all, with the same condition/disease/therapeutic intervention, are described, without a comparison control group

Level 4 evidence (incorporates Oxford 4) includes expert opinion where the opinion is based not on evidence but on 'first principles' (eg, physiological or anatomical) or bench research. The Delphi process can be used to give 'expert opinion' greater authority. In the Delphi process a series of questions are posed to a panel; the answers are collected into a series of 'options;' the options are serially ranked; if a 75% agreement is reached then a Delphi consensus statement can be made.

Grades of Recommendation

The ICUD will use the four grades from the Oxford system. As with levels of evidence the grades of evidence may apply either positively (do the procedure) or negatively (don't do the procedure). Where there is disparity of evidence, for example if there were three well conducted RCT's indicating that Drug A was superior to placebo, but one RCT whose results show no difference, then there has to be an individual judgment as to the grade of recommendation given and the rationale explained.

Grade A recommendation usually depends on consistent level 1 evidence and often means that the recommendation is effectively mandatory and placed within a clinical care pathway. However, there will be occasions where excellent evidence (level 1) does not lead to a Grade A recommendation, for example, if the therapy is prohibitively expensive, dangerous or unethical.

A grade A recommendation can follow from Level 2 evidence. However, a Grade A recommendation needs a greater body of evidence if based on anything except Level 1 evidence.

Grade B recommendation usually depends on consistent level 2 and or 3 studies, or 'majority evidence' from RCT's.

Grade C recommendation usually depends on level 4 studies or 'majority evidence' from level 2/3 studies or Delphi processed expert opinion. Grade C recommendation is given when expert opinion is delivered without a formal analytical process, such as by Delphi.

Grade D "No recommendation possible" would be used where the evidence is inadequate or conflicting.

EVIDENCE CLASSIFICATION/RATING SCHEME - FALLS

American Geriatric Society (AGS) / British Geriatrics Society (BGS) /American Academy of Orthopedic Surgeons (AAOS) Categories of Evidence and Strength of Recommendations³

Categories of Evidence

- Class I: Evidence from at least one randomized controlled trial or a meta-analysis of randomized controlled trials.
 Class II: Evidence from at least one controlled study without randomization or evidence from at least one other type quasiexperimental study.
 Class III: Evidence from nonexperimental studies, such as comparative studies, correlation studies and case-control
 Class IV: Evidence from expert committee reports or opinions and/or clinical experience of respected authorities.

Strength of Recommendation

- Grade A: Directly based on Class I evidence.
 Grade B: Directly based on Class II evidence or extrapolated recommendation from Class I evidence.
 Grade C: Directly based on Class III evidence or extrapolated recommendation from Class I or II evidence.
 Grade D: Directly based on Class IV evidence or extrapolated recommendation from Class I, II, or III evidence.

National Institute for Clinical Excellence (NICE) rating scheme for the strength of the evidence⁴

Recommendation grade	Evidence
A	Directly based on category I evidence
B	Directly based on: <ul style="list-style-type: none"> • category II evidence, or • extrapolated recommendation from category I evidence
C	Directly based on: <ul style="list-style-type: none"> • category III evidence, or • extrapolated recommendation from category I or II evidence
D	Directly based on: <ul style="list-style-type: none"> • category IV evidence, or • extrapolated recommendation from category I, II, or III evidence

GPP Recommended good practice based on clinical experience of the Guideline Development Group

Evidence category	Source
I:	Evidence from: <ul style="list-style-type: none"> • meta-analysis of randomized controlled trials, or • at least one randomized controlled trial
II:	Evidence from: <ul style="list-style-type: none"> • at least one controlled study without randomization, or • at least one other type of quasi-experimental study
III:	Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies and case-control studies
IV:	Evidence from expert committee reports or opinions and/or clinical experience of respected authorities

Adapted from Eccles M, Mason J (2001) How to develop cost-conscious guidelines. *Health Technology Assessment* 5: 16

REFERENCES

- ¹ Beers MH, Sliwkowski J, and Brooks J. Compliance with medication orders among the elderly after hospital discharge. *Hosp Formul.* 1992;27:720-724.
- ² Becker MH and Maiman LA. Sociobehavioral determinants of compliance with health and medical care recommendations. *Med Care.* 1975;13:10-24.
- ³ Williams EI and Filton F. General practitioner response to elderly patients discharged from hospital. *BMJ.* 1990;300:159-161.
- ⁴ Wenger NS and Young R. Working paper: Quality Indicators of Continuity and Coordination of Care for Vulnerable Elder Persons. Rand: August 2004.
- ⁵ Institute for Healthcare Improvement. Reconcile Medications at All Transition Points: Reconcile Medications in Outpatient Settings. Available at: <http://www.ihl.org/IHL/Topics/PatientSafety/MedicationSystems/Changes/IndividualChanges/ReconcileMedicationsinOutpatientSettings.htm>. Accessed August 2006.
- ⁶ American Geriatrics Society (AGS). Geriatrics at your fingertips: Palliative and end-of-life care. In: Reuben DB, Herr KA, Pacala JT, Pollock BG, Potter JF, Semla TP, eds. Online edition: Geriatrics at your fingertips. 2006-2007; 8th edition. Available at: <http://www.geriatricsatyourfingertips.org>.
- ⁷ Fonda D, DuBeau CE, Harari D et al. Incontinence in the Frail Elderly. In: Abrams P, Cardazo L, Khoury S, Wein A, eds. *Incontinence: 3rd International Consultation on Incontinence (ICI)*. Plymouth, England: Health Publication Ltd; 2005.
- ⁸ American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin #63: Urinary Incontinence in Women. *Obstetrics and Gynecology.* 2005; 105 (6): 1533-1545.
- ⁹ Tinetti ME, Baker DI, Dutcher J, Vincent JE, Rozett RT. *Reducing the risk of falls among older adults in the community*. Berkeley, CA: Peaceable Kingdom Press, 1997.
- ¹⁰ American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention: Guideline for the prevention of falls in older persons. *Journal of the American Geriatrics Society.* 2001; 49: 664-672.
- ¹¹ National Institute for Clinical Excellence (NICE). Falls: the assessment and prevention of falls in older people. November 2004; clinical guideline 21. Available at: <http://www.nice.org.uk/page.aspx?o=home>.