



Department of Clinical Epidemiology and
Community Studies
*Département d'épidémiologie clinique et
d'études communautaires*

Conference Proceedings

Actes de la conférence

Challenges and Innovations in the Care of Older Emergency Department Patients

*Les défis et les innovations des soins pour les patients
âgés au département d'urgence (DU)*

**Program Held within the International Interdisciplinary Conference
on Emergencies (IICE)**

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FOREWORD

This program would not have been possible without the hard work and financial contributions of individuals and organizations named below.

Local Organizing Committee and Staff Members

Our local organizing committee and staff members worked long and hard to make the conference a success. I am grateful to them for their enthusiasm and dedication:

Eddy Lang, MD, Alyson Turner, RN, MSc, Nathalie Veillette, Bsc, Msc, erg., Josée Verdon, MD, MSc, FRCP(C).

Staff: Maria Gordon, MA (Coordinator), Desmond Blik (Assistant Coordinator).

International Advisory Committee

The following members of our international advisory committee provided valuable input into program planning:

J. Bankes, RN, MN (Calgary, Alberta, Canada), K. Berg, PhD, PT (Toronto, Ontario, Canada), G. Caplan, MB, BS (Sydney, Australia), S. de Rooij, MD (Amsterdam, Netherlands), M. Fenn, CNC (Brisbane, Australia), L. W. Gerson, PhD (Rootstown, Ohio, USA), J. Hoogerduijn, RN (Amsterdam, Netherlands), S. Meldon, MD (Cleveland, Ohio, USA), L. Mion, PhD, RN (Cleveland, Ohio, USA), B. Parke, MSN GNC(C), PhD (cand) (Chilliwack, British Columbia, Canada), E. Rosted, RN, MSN (Copenhagen, Denmark), M. Shah, MD (Rochester, New York, USA), R. Warburton, PhD (Victoria, British Columbia, Canada).

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Because of our limited financial support, most presenters paid for their own travel expenses to attend the conference. We appreciate their commitment.

Jane McCusker, MD, DrPH
Chair of Local Organizing Committee and Editor of Conference Proceedings

AVANT-PROPOS

Ce programme n'aurait pas été possible sans les efforts et le concours financier des personnes et des organisations sous-mentionnées.

Comité d'Organisation Local et Membres du Personnel

Notre comité d'organisation local et les membres du personnel ont travaillé d'arrache-pied pour faire de cette conférence un succès. Je tiens à les remercier de leur enthousiasme et de leur dévouement :

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En raison de notre soutien financier limité, la plupart des présentateurs ont payé de leur poche leurs frais de déplacement pour participer à la conférence. Nous saluons leur engagement.

Jane McCusker, MD, DrPH

Présidente du Comité d'Organisation Local et Rédactrice des Actes de la Conférence

INTRODUCTION

The emergency department (ED) is the interface between community and hospital. Older adults use EDs at a higher rate than the general population, and consume greater ED resources. Population demographic changes are having dramatic effects on the number of older patients seeking care in EDs around the world. These trends are presenting unprecedented challenges; innovative, evidence-based solutions are urgently needed. This conference theme program took an interdisciplinary approach, to address three aspects of care of older ED patients:

1. External/emergency medical services
2. ED (ED)
3. Hospital/ambulatory services/health care networks.

Objectives

The objectives of the geriatric theme program included the following:

1. To describe characteristics of the ED patients and the determinants of ED utilization in older adults;
2. To demonstrate the multidisciplinary nature of ED care of older adults;
3. To highlight international similarities and differences in challenges facing hospital EDs in caring for their older patients;
4. To review evidence for the effectiveness of interventions (preventative and treatment) targeting older adults, including:
 - a) clinical interventions during ED visits, and
 - b) models for service delivery to older patients, over continuum of care;
5. To introduce innovative practices;
6. To develop an agenda for future research, policy and practice.

Composition of Geriatric Theme Program

The geriatric theme program comprised 8 French and 20 English oral presentations, 11 posters, and a policy round-table/think-tank (described below). The oral presentations were for the most part invited contributions for planned sessions. This program was supplemented by submitted abstracts relevant to program.

Policy round-table and “think-tank”

The conference provided a unique opportunity to convene a panel of experts in geriatric ED care to begin a process to develop best practice policy recommendations. This session was an attempt to extend the work done by the American Geriatric Society research agenda setting activity (RASP): “New Frontiers in Geriatrics Research: An Agenda for Surgical and Related Medical Specialties” published in *Academic Emergency Medicine*, March, 2003.

A round-table session was held on June 29 in which eight expert panelists presented their views on the following two questions based on their discipline’s perspective and profession experience in the field of geriatric emergency:

1. What are the gaps between current and best practice?
2. What is needed to achieve best practice?

Opportunities were provided during the round-table for oral and written input from the audience.

In the think tank, the expert panelists were joined by invited participants to continue the discussions begun at the round table session. The think tank session used a Nominal Group Technique and participants were divided into smaller groups to facilitate effective discussions and brainstorming.

Think tank and round table discussions will culminate in a final report. The final report will summarize the best practice evidence and the recommendation(s) emanating from the think-tank. The report will then be transformed into a manuscript for publication. The synthesis of such information could potentially assist researchers, administrators, and clinicians on future directions that could potentially improve emergency care and service delivery.

Development and organization of conference proceedings

Conference presenters were invited to contribute their work to this proceedings document; most consented. The titles and contact information for the presentations not included are provided. Oral presenters were invited to contribute a 500-word summary of their presentation, with a few key references. The original abstracts were used if the summary was not received. Original abstracts were used for the poster presentations. All authors were given the opportunity to edit their abstracts for this final document. English versions of French abstracts are also included.

All presentations (oral and poster) were keyworded using a list of themes approved by presenters. This information has been presented in a theme chart (page??) to assist readers in finding the presentations of interest to them.

Conclusions

The conference was a unique opportunity for experts in geriatric ED care to share their clinical experience and research. Although the context of ED care differs among countries, and different approaches are used, we were united by a common problem.

We learned a great deal from this conference, not least some linguistic issues. Cross-national comparisons sometimes used different terms. The North American “emergency department” (ED) or emergency room (ER) is known as the accident and emergency (A&E) department in many other countries. In Australia, the “dodgy” factor appears to be equivalent to the North American “professional judgment” in identifying high-risk patients! Among the evocative metaphors used, we heard about the “gray tide” that threatens to immerse our EDs and the “iceberg of geriatric syndromes” floating in the ED sea. This aquatic theme was further explored in our social evening - floating on the St. Lawrence River on board the Bateau Mouche.

We hope that this document will provide a useful basis for the future development of research and best practices on care of the older ED patient.

INTRODUCTION

Le département d'urgence (DU) est l'interface entre la communauté et l'hôpital. Les adultes plus âgés font davantage appel aux services des urgences que la population générale, et consomment davantage de ressources DU. Les changements démographiques de la population ont des conséquences majeures sur le nombre de patients plus âgés demandant des soins aux services des urgences à travers le monde. Ces tendances présentent des défis sans précédent; il est nécessaire de trouver rapidement des solutions innovatrices et factuelles. Le programme thématique de cette conférence a adopté une approche interdisciplinaire pour aborder trois aspects des soins dispensés aux patients plus âgés aux services des urgences :

- 1. Soins médicaux externes/d'urgence*
- 2. Département d'urgence (DU)*
- 3. Soins hospitaliers/ambulatoires/réseaux de santé.*

Objectifs

Les objectifs du programme thématique gériatrique comprenaient les points suivants :

- 1. Décrire les caractéristiques des patients DU et les déterminants de l'utilisation des DU chez les adultes plus âgés ;*
- 2. Démontrer la nature pluridisciplinaire des soins DU des adultes plus âgés ;*
- 3. Mettre en évidence les similitudes et les différences internationales au niveau des défis auxquels sont confrontés les DU hospitaliers dans la prise en charge des patients plus âgés ;*
- 4. Examiner les faits en matière d'efficacité des interventions (préventives et thérapeutiques) ciblant les adultes plus âgés, y compris :*
 - a) interventions cliniques lors des consultations DU, et*
 - b) modèles de prestation de services aux patients plus âgés, sur un continuum de soins ;*
- 5. Présenter les pratiques innovatrices ;*
- 6. Etablir un ordre du jour pour la recherche, la politique et les pratiques futures.*

Composition du Programme Thématique Gériatrique

Le programme thématique gériatrique comprenait 8 présentations orales en français et 20 en anglais, 11 affiches, ainsi qu'une table ronde/séance de réflexion sur la politique (décrites ci-dessous). Les présentations orales étaient pour la plupart des contributions invitées pour les séances prévues. Ce programme a été complété par la soumission d'abrévés pertinents au programme.

Table ronde et séance de réflexion sur la politique

La conférence a été l'occasion unique de rassembler un panel d'experts en soins DU gériatriques afin d'amorcer un processus de développement des recommandations de politique de pratiques d'excellence. Cette séance a tenté d'approfondir le travail accompli par la RASP (activité visant à déterminer les priorités de recherche) de l'American Geriatric Society : « New Frontiers in Geriatrics Research: An Agenda for Surgical and Related Medical Specialties » (nouvelles frontières dans la recherche gériatrique : les priorités pour les spécialités chirurgicales et médicales apparentées), publié dans l'Academic Emergency Medicine, Mars 2003.

Une table ronde a été tenue le 29 juin, au cours de laquelle huit experts ont présenté leurs points de vue sur les deux questions suivantes d'après leur perspective de la discipline et leur expérience professionnelle dans le domaine des soins d'urgence gériatriques :

- 1. Quels sont les écarts entre les pratiques actuelles et les pratiques d'excellence ?*
- 2. Que manque-t-il pour atteindre les pratiques d'excellence ?*

Lors de la table ronde, l'occasion a été donnée à l'assistance de contribuer verbalement et par écrit.

Lors de la séance de réflexion, les experts ont été rejoints par des participants invités dans le but de poursuivre les discussions entamées au cours de la table ronde. La séance de réflexion a employé la Technique du Groupe Nominal et les participants ont été répartis en groupes de plus petite taille pour encourager des discussions et une prospection d'idées productives.

Les débats de la séance de réflexion et de la table ronde déboucheront sur la production d'un rapport final. Ce rapport final résumera les données factuelles de pratiques d'excellence et la/les recommandation(s) émanant de la séance de réflexion. Le rapport sera ensuite transformé en manuscrit en vue d'une publication. La synthèse de ces informations pourrait éventuellement aider les chercheurs, administrateurs, et cliniciens sur les orientations futures susceptibles d'améliorer les soins d'urgence et la prestation des services.

Etablissement et organisation des actes de la conférence

Les conférenciers ont été invités à intégrer leurs travaux aux présents actes ; la plupart ont accepté. Les titres et les coordonnées concernant les présentations ne figurant pas dans les présents actes sont indiqués. Les orateurs ont été invités à soumettre un résumé de 500 mots de leur présentation, avec quelques références clés. Les abrégés originaux ont été utilisés lorsque le résumé n'a pas été soumis. Les abrégés originaux ont été utilisés pour les présentations avec affiches. La possibilité a été donnée à tous les auteurs d'éditer leurs abrégés pour ce document final. Les versions anglaises des abrégés français y figurent également.

Des mots-clés ont été attribués à toutes les présentations (orales et avec affiches) en utilisant une liste de thèmes approuvés par les présentateurs. Ces informations ont été présentées dans un tableau thématique pour aider les lecteurs à trouver les présentations qui les intéressent.

Conclusions

La conférence a été l'occasion unique pour ces experts en soins d'urgence gériatriques de partager leurs expériences et recherches cliniques. Même si le contexte des soins DU diffère d'un pays à l'autre, et différentes approches sont employées, nous sommes tous confrontés au même problème.

Nous avons beaucoup appris de cette conférence, notamment en ce qui concerne les divergences linguistiques. Les comparaisons transnationales utilisent parfois des termes différents. Ce qui est appelé « emergency department » (ED) (service des urgences) ou « emergency room » (ER) (salle des urgences) sur le continent nord-américain, est appelé « accident and emergency (A&E) department » (service des accidents et urgences) dans de nombreux autres pays. En Australie, le facteur « dodgy » (problématique) semble être équivalent à ce qui est appelé « professional judgment » (jugement professionnel) sur le continent nord-américain pour

identifier les patients à haut risque! Parmi les métaphores évocatrices employées, nous avons entendu parler de la « gray tide » (marée grise) qui menace de submerger nos DU et de « iceberg of geriatric syndromes » (iceberg des syndromes gériatriques) voguant sur l'océan des DU. Ce thème aquatique a été exploré plus en détail lors de notre soirée – voguant sur le Saint-Laurent à bord d'un bateau-mouche.

Nous espérons que ce document constituera un outil utile au développement futur de recherches et pratiques d'excellence sur les soins dispensés aux patients plus âgés aux services des urgences.

PRESENTATIONS

Session 1: Pre-Hospital Emergency and Older Populations in France

Paper 1A: Urgences vitales chez les personnes âgées et critères d'admission en réanimation (Emergency medicine in the elderly and criteria for admission to intensive care)

Author: J. Phillippe

Abstract not available.

Paper 1B: Population âgée prise en charge par le SMUR : premiers résultats de l'étude âgeSmur2002 (The older population in the SMUR program: Initial results of the âgeSmur2002 Study)

Authors: Hervé Guignery-Debris, Nicolas Droutman, Jean-François Mary, Francis Le Sire, Philippe Chassagne, Christian Drieu

Institution: Groupe Hospitalier du Havre, Le Havre Cedex, France

Introduction et objectifs : âgeSmur2002 est une étude rétrospective descriptive de la population de 75 ans et plus prise en charge par le SMUR (Service Mobile d'Urgence et de Réanimation) du Havre en 2002. 1024 dossiers ont été analysés selon plusieurs critères dont : motif de recours, diagnostics, classe CCMS (classification clinique des malades du SMUR) (1), devenir après SMUR, trajet hospitalier, devenir à un an.

CLASSE 1	malade stable ne nécessitant aucun geste thérapeutique ni diagnostique ni de surveillance sur les lieux (e.g., absence de perfusion en garde-veine, de glycémie capillaire, d'ECG...)
CLASSE 2	malade stable nécessitant au moins un geste diagnostique ou thérapeutique ou de surveillance (attelle de membre, ECG à domicile, ...)
CLASSE 3	état clinique pouvant s'aggraver sans mise en jeu immédiate du pronostic vital
CLASSE 4	pronostic vital ou fonctionnel engagé sans nécessité de gestes de réanimation vitale
CLASSE 5	pronostic vital engagé avec nécessité de gestes de réanimation vitale
CLASSE 6	victime décédée avant l'arrivée du SMUR (pas de gestes de réanimation)

Développement et résultats : Les seniors sont surreprésentés parmi les patients du SMUR : 23,7% des interventions alors qu'ils ne représentent que 6,9% de la population couverte ; les hommes de plus de 75 ans le sont particulièrement : 33,0% de la population couverte, 44,3% des interventions. Les motifs de recours au Centre 15 donnant lieu à SMUR ont été regroupés en familles de codes CIM : dyspnée et douleur thoracique représentent 51,9% des motifs d'appel, la suspicion de décès 3,9%. Le devenir immédiat après SMUR (hospitalisation, traitement sur place, pas d'indication médicale, décès sans réanimation, décès après réanimation, refus de transport) a été analysé ; les différences avant et après 75 ans résident dans : - hospitalisations : 68,3% après 75 ans vs 78,0% avant ($p < 0,05$) ; - traités sur place : 16,9% après 75 ans vs 11,4% avant ($p < 0,05$) ; - décès : 11,2% après 75 ans vs 5,7% avant ($p < 0,05$) ; - décès sans réanimation : 93,2% après 75 ans vs 68,7% avant ($p < 0,05$). Les seniors sont plus souvent hospitalisés en Soins Intensifs Cardiologiques après SMUR (33,1% vs 15,5% avant 75 ans, $p < 10^{-4}$) et ils sont moins souvent amenés par le SMUR aux Urgences (60,4% vs 71,5%, $p < 10^{-4}$). 46,2% des

diagnostics posés en SMUR sont cardiologiques. Pour les insuffisances ventriculaires gauches (IVG), le décès en hospitalisation est nettement supérieur pour les patients admis aux Urgences au lieu des Soins (14/75 vs 2/88, $p < 0,005$). Par contre, à un an, le taux de survie n'est pas différent pour les IVG, que la poussée soit sévère (CCMS 4 ou 5) ou légère (CCMS 2 ou 3) : 62%.

Conclusion : Les premiers résultats d'âgeSmur2002 incitent à renforcer les filières de soins entre SMUR et Cardiologie et à poursuivre la formation des personnels du SMUR à la spécificité gériatrique.

Introduction and objectives: âgeSmur2002 is a retrospective descriptive study of those aged 75 and over cared for by the SMUR (Service Mobile d'Urgence et de Réanimation/ Mobile Emergency and Resuscitation Service) in Le Havre in 2002. 1024 files were analyzed according to numerous criteria such as: reason for visit, diagnosis, CCMS (classification clinique des malades du SMUR/ SMUR Patients Clinical Classification) (1) class, outcomes after SMUR, hospitalization, and one-year outcomes.

Class 1	Patient stable, does not require any treatment or diagnostic action or monitoring in situ (e.g. no KVO perfusion, no capillary glycaemia [measurement], no ECG etc.).
Class 2	Patient stable, requires at least one treatment or diagnostic action or monitoring (e.g. limb requires splinting, home ECG etc.).
Class 3	Clinical condition liable to deteriorate, but no immediately life-threatening condition.
Class 4	Life-threatening or disabling condition, but not requiring resuscitation measures.
Class 5	Life-threatening condition requiring resuscitation measures.
Class 6	Victim deceased before arrival of SMUR [or "MERS"] (no resuscitation measures).

Development and results: Seniors are over-represented among SMUR patients (23.7% of interventions while they represent only 6.9% of the population), particularly men over 75 (33.0% of population covered, 44.3% of interventions). Reasons for visit to Center 15 at SMUR were regrouped by ICD codes: dyspnea and thoracic pain comprise 51.9% of all calls, suspected deaths comprise 3.9%. The immediate situation after SMUR (hospitalization, treatment at the scene, no medical indications, death without resuscitation, death after resuscitation, refusal of transport) were analyzed; the differences before and after 75 years include: hospitalizations [68.3% in 75+ vs. 78.0% in <75 ($p < 0.05$)]; treated at the scene: 16.9% in 75+ vs. 11.4% <75 ($p < 0.05$); death [11.2% 75+ vs. 5.7% <75 ($p < 0.05$)]; death without resuscitation [93.2% 75+ vs. 68.7% <75 ($p < 0.05$)]. Seniors were more often hospitalized in the Cardiac Intensive Care Unit after SMUR [33.1% vs. 15.5% < 75, $p < 10^{-4}$] and they were less often brought to the ED by SMUR (60.4% vs. 71.5%, $p < 10^{-4}$). 46.2% of diagnoses by SMUR are cardiac. For left ventricle insufficiency (LVI), death in hospital is clearly higher for patients admitted to the ED rather than intensive care (14/75 vs 2/88, $p < 0.005$). But at the one-year mark, the survival rate is the same for the LVIs, whether the failure was severe (CCMS 4 or 5) or mild (CCMS 2 or 3): 62%.

Conclusion: These initial results from the âgeSmur2002 suggest the strengthening of care linkages between SMUR and Cardiology, and the improved training of SMUR staff in geriatrics.

Paper 1C: Spécificité de la prise en charge préhospitalière des pathologies cardiovasculaires des plus de 90 ans (Specificity of the pre-hospital care of cardiovascular disorders in aged 90 and over)

Authors: Alexis Descatha^{a,b,c}, Ramses Massoudi^a, Isabelle Laffrat^a, Pierre Coninx^a, Christophe Leroy^a, Michel Baer^a, Dominique Fletcher^a

Institutions: ^a SAMU 92, SMUR de Garches, Garches, France, ^b Unité de pathologie professionnelle, Garches, France, ^c INSERM, U687-IFR69 Saint Maurice Cedex, France

Introduction: Une étude préliminaire a soulevé l'intérêt de l'étude des pathologies cardiovasculaires des sujets très âgés. Notre objectif a été de comparer la prise charge préhospitalière des pathologies cardiovasculaires [oedèmes aigus pulmonaires (OAP) et syndromes coronariens aigus (SCA)] survenant chez les plus de 90 ans.

Matériel et méthode: Étude rétrospective de 2001 à 2003 de tous les OAP et SCA de plus de 90 ans (groupe "âgé"), comparés à ceux de 60-74 ans (groupe "jeune"), gérés par notre service préhospitalier d'urgences. Ont été analysés (uni et multivariés): le sexe, les traitements initiaux, la notion de modification du segment ST, la gravité (score Index de Gravité Simplifiée Ambulatoire modifié par exclusion de l'item âge, IGSAm), la destination initiale et l'évolution à 24h.

Résultats: En 3 ans, 721 sujets ont été inclus dont 254 de plus de 90 ans (35%): 307 OAP, 447 SCA (dont 33 à la fois SCA et OAP, et 124 SCA avec modification du ST). L'admission en service de réanimation des OAP et SCA a été moins fréquente dans le groupe "âgé" (37% versus 70%, $p<0,001$). Dans le groupe OAP, l'intubation préhospitalière est moins fréquente dans le groupe "âgé" (1% versus 12%, $p=0.001$), limite pour la pression positive continue (28% versus 37%, $p=0,07$), sans différence pour les diurétiques et nitrés. Bien que les OAP du groupe "âgé" semblent moins grave en univarié (IGSAm), une analyse multivariée montre qu'à gravité et sexe identique, les sujets du groupe âgé vont moins souvent en service de réanimation ($p<0,0001$). Dans le groupe SCA, seuls les bêta-bloquants ont été moins souvent administrés dans le groupe "âgé" (1% versus 6%, $p=0,0575$). La décision de reperfusion a été moins fréquente (26% versus 60%, $p<0,01$), alors que les patients ont été de gravité identique (IGSAm). En analyse multivariée, ni le groupe ("jeune" ou "âgé"), ni le sexe ne sont associés au décès en 24h. Le modèle utilisé a inclus groupe, sexe, IGSAm, notion d'OAP et notion de modification du ST.

Conclusion: Alors que l'âge n'est pas associé à un décès précoce, cette étude évoque que les OAP et les SCA de plus de 90 ans ne bénéficient pas de la même prise en charge.

Introduction: A preliminary study raised interest in further study of cardiovascular pathologies in older subjects. Our objective was to compare the pre-hospital care of cardiovascular pathologies [acute pulmonary edemas (APE) and acute coronary syndromes (ACS)] taking place in the over-90 age group.

Material and Method: Retrospective study from 2001 to 2003 of all APE and ACS in the over-90 age group (the "elderly" group), compared to those in the 60-74 age group (the "young" group), managed by our pre-hospital emergency service. We analyzed (univariate and multivariate): gender, initial treatments, ST segment change, severity (Index de Gravité Simplifiée Ambulatoire modifié par exclusion de l'item âge, IGSAm/ Simplified Ambulatory Severity Index modified by exclusion of age), initial destination and progression at 24 hours.

Results: In 3 years, 721 subjects were included, 254 of whom were over 90 (35%): 307 APE, 447 ACS (33 were both APE and ACS, and 124 were ACS with ST change). Admission to Intensive care unit of the APEs and ACSs was less frequent in the "elderly" group (37% versus 70%, $p<0.001$). In the APE group, pre-hospital intubations were less frequent in the "elderly" group (1% versus 12%, $p=0.001$), and limit

for continuous positive pressure (28% versus 37%, $p=0.07$), without any difference for diuretics and nitrates. Even though the APEs from the “elderly” group seem less severe in univariate analyses (IGSAM), a multivariate analysis shows that, after adjustment for severity and gender, the subjects from the “elderly” group went to intensive care unit less often ($p<0.0001$).

In the ACS group, only the beta-blockers were less frequently given to the “elderly” group (1% versus 6%, $p=0.0575$). The decision to reperfuse was less frequent (26% versus 60%, $p<0.01$) while patients had identical severity (IGSAM). In a multivariate analysis, neither the group (“elderly” or “young”), nor the gender were associated with death within 24 hours. The model used included group, gender, IGSA, APE, and ST change.

Conclusion: Although age is not associated with early death, this study suggests that the APEs and ACSs over 90 do not benefit from the same care.

Paper 1D: Urgences préhospitalières et personnes âgées en Midi-pyrénées, une région française (Prehospital emergencies and the elderly in the Midi-pyrénées region of France)

Author: Denis Arcuset et al.

Institution: Hôtel-Dieu Saint-Jacques, Toulouse, France

Abstract not available.

Paper 1E: Les filières d'accueil du patient gériatrique (Channels of access by the geriatric patient)

Author: Pierre Espinoza et al.

Institution: ECIMUD, Hôpital Georges Pompidou, Paris, France

Abstract not available.

Paper 1F: Orientation des personnes âgées à partir des urgences : étude prospective, devenir à 1 mois (Orientation of older people to the ED: a prospective study with 1-month follow-up)

Authors: Laurent Delaire, Myriam Deguillen, Sylvie Betoulle, Corine Tabuteau, Emmanuel Blancher, Frédéric Maillet, Séverine Massé

Institution: Centre Hospitalier d'Angoulême, Saint Michel, France

Introduction: Le vieillissement de la population, l'augmentation des usagers des urgences sans augmentation du nombre de lits d'hospitalisation, incitent à une prise en charge des personnes âgées (PA) favorisant le retour à domicile. Des indicateurs de qualité sont à déterminer.

Méthode: Etude prospective sur 15 jours consécutifs à partir du 19/07/2004, de tous les patients successifs de 75 ans et plus se présentant aux urgences. Evaluation de l'autonomie à l'entrée par le score ADL (*Activity of Daily Living*) et classification des PA selon score ADL, âge, isolement et polyopathie, en trois groupes d'autonomie : non fragile, fragile, gériatrique. Suivi à un mois par contact téléphonique, et consultation du dossier médical.

Résultats: Notre Service d'Accueil Urgences, au sein d'un Hôpital Général, est référent d'un département de 350000 habitants, le bassin de population de proximité est de 150000 habitants; on dénombre 30000 passages annuels. On retient : 213 patients éligibles, 1 exclu, 3 perdus de vue, 209 inclus. Ils représentent 17.5% des admissions totales, 57% sont hospitalisés (vs 35 % pour la totalité des admissions) avec une durée moyenne de séjour de 7 jours, dont 17% en secteur d'hospitalisation de courte durée (UHCD) avec sortie ou décès en moins de 24 heures. L'hospitalisation a lieu dans le service adéquat dans 96% des cas. La durée moyenne du passage

aux urgences est de 3 heures (maximum 8 heures). A un mois, 16% des patients sont ré hospitalisés, et 13,8 % sont décédés. L'hospitalisation est dépendante du lieu de vie, de la gravité, mais est indépendante du degré d'autonomie.

Conclusions: La qualité de la prise en charge des PA aux urgences peut être évaluée par des indicateurs simples. Elle doit s'appuyer sur la rapidité de la réalisation des soins, sur une maximisation des retours dans leur lieu de vie des PA, sur l'adéquation du service d'accueil en cas d'hospitalisation, sur l'optimisation de l'utilisation de l'UHCD. Le taux élevé de mortalité à un mois doit nous faire réfléchir sur la pertinence des prises en charge lourdes hospitalières : notions d'espérance de vie "sans incapacité" et d'obstination déraisonnable.

Introduction: *The aging of the population and the increase in ED use (without an increase in the number of hospital beds), prompts care management of seniors that encourages a return home. Quality indicators are to be determined.*

Method: *Prospective study over 15 consecutive days, starting on 07/19/2004, of all successive patients aged 75+ going to the ED. Evaluations of disability at arrival using the ADL (Activity of Daily Living) score and classification of seniors according to ADL score, age, isolation, and polyopathy, into three autonomy groups: non-frail, frail, geriatric. Follow-up at one month by telephone and review of medical chart.*

Results: *Our ED, within a General Hospital, serves a population of 350,000; the surrounding population is 150,000 and there are 30,000 annual visits. Of the 213 eligible patients followed, 1 was excluded, 3 were lost to follow-up, and 209 were included. These represent 17.5% of total visits; 57% were hospitalized (vs. 35% for total admissions) with an average stay of 7 days, including 17% in the short-term unit with discharge or death under 24 hours. In 96% of cases, hospital admission was to the appropriate service. The average amount of time spent in the ED was 3 hours (maximum 8 hours). After one month, 16% of patients had been re-hospitalized and 13.8% had died. Hospitalization is related to living environment and severity, but not to degree of autonomy.*

Conclusion: *The quality of care given to seniors at the ED can be evaluated through simple indicators. It must rely on the rapidity of care, on maximization of return home for seniors, on the adequacy of the admitting service in the case of hospitalization, and on optimization of use of the short-term hospital unit. The high rate of death at one month should make us reflect on the relevance of heavy hospital undertakings, disability-free life expectancy and unreasonable expectations.*

Session 2: Screening Tools for Older ED Patients

Paper 2A: Screening and assessment tools for older emergency department (ED) patients

Authors: Jane McCusker^{a,b}, Josée Verdon^b

Institutions: ^a St. Mary's Hospital Center, Montreal, Quebec, Canada, ^b McGill University, Montreal, Quebec, Canada

Objectives: This presentation aimed to: 1) contrast screening vs. assessment tools for case-finding in older ED patients, 2) review high-risk screening tools.

Choice of tools: Case-finding tools aim to identify "cases" that can benefit from intervention, either in ED or afterwards. One-step vs. two-step approaches may be used. One step approaches apply assessment tools to all patients. Two-step approaches apply a screening tool to all patients, and apply assessment tools only to those who screen positive (2).

a) Screening tools: (used at step 1 of a 2-step program) aim to quickly divide patients into 2 groups:

- POSITIVE : probably have 1 or more unmet needs, need to be assessed (usually in ED) to determine nature/type of needs and interventions
- NEGATIVE: probably do not have unmet needs, no further action in ED.

A screening test should be: short, simple, acceptable to patients, inexpensive, valid and reliable.

A screening test need not be comprehensive

b) Assessment tools: aim to determine the presence of a particular problem (or set of problems), e.g.: delirium, physical disability, depression, social supports. Attributes of good ED-based assessment tool: Feasible in ED setting; short, not performance-based (assessment tools developed for other settings may have to be modified for the ED); comprehensive (within time constraints); identifies most important unmet needs; action-oriented; valid and reliable.

Assessment tools may be designed to identify particular conditions (e.g., delirium) or may be comprehensive. The latter have been less well-described. They may use selected tools/tests for specific problems. However, their reliability and validity in the ED need to be measured

High-risk screening tools: 2 tools have been developed and validated. The ISAR (Identification of Seniors at Risk) (3) has 6 questions, in English and French, validated in patients admitted and discharged from ED. The TRST (Triage Risk Screening Tool) (4) has 5 questions, in English, validated in patients discharged from ED.

a) Validity: The 2 scales include similar items, but have been validated on different outcomes. ISAR was originally developed to identify patients at increased risk of functional decline, NH admission, or death. It was later validated on other outcomes (e.g., utilization of hospitals, community services, return ED visits (5)). TRST has been validated to identify patients at increased risk of hospital or NH admission, or return ED visits. The 2 tools appear to perform similarly for the prediction of health services utilization. Only ISAR has been found to predict functional decline.

b) Implementation issues: Issues to be addressed in the implementation of high-risk screening tools include: 1) method of screening: self- (or family-member) completion vs. staff ; 2) when to screen (triage, later, earlier); 3) what to do about patients who can't be screened; 4) what step 2 assessment and intervention will be done, and where (in ED, on wards if admitted, home care); 5) what cut-point to use? Need to balance false positive and false negatives, and take into account resources for step 2 assessment. (Example - ISAR cut-point of 3+ vs. 2+) (3); 6) need to test and adapt tools for the local setting (6).

Paper 2B: The CAREFALL Triage Instrument: A questionnaire for assessing modifiable risk factors for a recurrent fall

Author: Sophia E. de Rooij ^a, Nynke van Dijk ^a, Fenna van Breda ^a, Johanna C. Korevaar ^{a,b}

Institutions: ^a Department of Internal Medicine and Geriatrics, Academic Medical Center Amsterdam, the Netherlands, ^b Department of Internal Medicine, Academic Medical Center Amsterdam, the Netherlands

Background/objectives: Falls generally result from an interaction of multiple risk factors, many of which can be corrected, so-called modifiable risk factors. Frequently, older people are not aware of the risks of (recurrent) falling, nor do they recognize risk factors nor report these issues to their physicians. Consequently, opportunities for prevention of falling are often overlooked with risks becoming evident only after injury has already occurred. The objective of this research was to develop an instrument with ability to incorporate patient and physical environmental assessment, and care planning and to test its reliability and validity.

Methods: Patients visiting the ED of a tertiary university center with a non-accidental fall (one that is not the result of an outside force like a car or a bicycle accident) were recruited. Clinical data included information about the fall, and circumstances were obtained from the patients' ED medical record. Based on this information they were sent the questionnaire, the CAREFALL Triage Instrument (CTI). The CTI consists of 44 items covering the circumstances of the fall, medical history, fear of falling, mood disturbances, incontinence, vision, medication, gait and balance, and risk factors of osteoporosis. Instrument construction took place concomitant with the development of the Dutch National evidence-based cost-effective Guideline.

Results: Scaling analysis and reliability estimation were conducted on the data of the first 550 patients. A validity study showed good performance of the CTI in the identification of modifiable risk factors. The planning of care, or triage, of those ED patients for whom a visit to a fall prevention clinic is beneficial can be based on the CTI according to its specificity and sensitivity.

Practice implications: The results lend support to the clinical validity of the CTI as a supplementary questionnaire for assessing modifiable risk factors for a recurrent fall and other specific issues relevant to patients presenting with a (recurrent) fall at an ED.

Paper 2C: Prevalence and detection of delirium in the ED

Author: Michel Élie

Institution: St. Mary's Hospital Center, Montreal, Quebec, Canada

Objectives: To review the prevalence, detection rate and availability of tools for the detection of delirium in the ED.

Methods: Literature was reviewed via the Psychinfo\Medline\Embase data bank looking at delirium and its prevalence/detection in the ED. Relevant articles were identified and retrieved. Experts in the field were also contacted.

Results: Six rigorously designed articles reported a prevalence rate of delirium in the ED. The average rate was approximately 10%. Only four articles reported detection rates of delirium in the ED. The average detection rate was less than 30%. The most frequently and consistently used tool to identify delirium cases in the ED was the Confusion Assessment Method (CAM) (7).

Interpretation of results: Delirium is a frequent medical condition in the ED. It remains poorly detected despite its frequency and its probable impact on prognosis (8, 9). Some explanation for this may be lack of ED physicians' time for assessment, lack of collateral information, or lack of proper understanding of the concept of delirium by ED physicians. The CAM is a highly sensitive and specific screening tool which can be used by non-physicians and could help to the detection of delirium in the ED (7).

Practice implications: Systematic use of the CAM in high risk patients and better sensitization of ED physicians to this frequent condition could increase its detection and hopefully its prognosis.

Session 3: Improving the Management of Older ED Patients

Paper 3A: An ED based nurse discharge coordinator for elder patients: Does it make a difference?

Authors: Alex Guttman^a, Rivka Guttman^{a,b}, Marc Afilalo^a, Antoinette Colacone^a, Chantal Robitaille^a, Eddy Lang^a, Stephen Rosenthal^a

Institutions: ^a Sir Mortimer B. Davis Jewish General Hospital, Montreal, Quebec, Canada, ^b Vanier College, Ville Saint-Laurent, Quebec, Canada

Objectives: To evaluate the impact of an ED-based nurse discharge plan coordinator (NDPC) on unscheduled return visits within 14 days of discharge, satisfaction with discharge recommendations, adherence with discharge instructions, and perception of well-being of elder patients discharged from the ED.

Methods: Patients aged 75 years and older discharged from the ED of the Sir Mortimer B. Davis Jewish General Hospital were recruited in a pre/post study. During the pre (control) phase, study patients (n=905) received standard discharge care. Patients in the post (intervention) phase (n=819) received the intervention of an ED-based NDPC. The intervention included patient education, coordination of appointments, telephone follow-up and access to the NDPC for up to seven days following discharge.

Results: Patients in the two groups were similar with respect to gender and age. Patients managed by the NDPC appeared to be, at baseline, less autonomous, frailer and sicker. The unadjusted relative risk for unscheduled return visits with 14 days of discharge was 0.79 (95% confidence interval (95%CI) = 0.62 to 1.02). A relative risk reduction of 27% (95% CI = 0% to 44%) for unscheduled return visits was observed for up to eight days post-discharge and a relative risk reduction of 19% (95%CI = -2% to 36%) for unscheduled return visits was observed for up to 14 days post-discharge. Significant increases in satisfaction with the clarity of discharge information and perceived well-being were also noted.

Practice implications: An ED-based NDPC, dedicated specifically to the discharge care of elder patients reduces the proportion of unscheduled ED return visits and facilitates the transition from the ED back home and into the community health care network.

Paper 3B: Nursing care for older persons in the ED

Author: Philip Moons

Institution: Katholieke Universiteit, Leuven, Belgium

Objectives: Research indicated that older persons at the ED have special needs. Based on a review of the literature, this paper discusses specific issues in nursing care for this particular group of patients.

Results: If older patients are admitted to an ED, doctors and nurses usually have very limited information which they can use to start treatment or to develop care plans. Hence, geriatric assessment is indispensable to be carried out in the ED. More specifically, assessment of their functional status and cognitive ability before admission and at the time of discharge is particularly essential if nurses in the ED are to adjust the care they provide in line with the patient's physical and mental functioning. Research indicated that the functional status of the patient before admission to the ED is an important predictor of possible readmissions.

Interpretation of results: Since 5% to 29% of the elderly people discharged from an ED are readmitted within 14 days after discharge, the use of instruments to assess the risk for readmission is highly recommended. Because reduced cognitive function is often an indicator of

an underlying somatic problem, a sound assessment of the cognitive status of every elderly person in an ED is needed. Approximately half of those elderly people who present themselves at an ED can be discharged after care or treatment. It is imperative to provide clear guidelines on after-care and on required health behavior, taking into account elderly people's functional status and social context, in order to avoid relapses or complications, and the resulting rehospitalisations. When issuing discharge instructions it is also important to take the patient's cognitive capacity into account.

Practice implications: Doctors and nurses working in an ED must be aware of the specific needs of older persons. A sound assessment of functional status and cognitive ability, and specific attention to verbal and written discharge guidelines are indispensable.

Paper 3C: The impact of a geriatric nurse practitioner in the ED

Authors: Karen E. Campbell^a, Karl D. Theakston^{a,b}, Christina Chambers^b

Institutions: ^aLondon Health Sciences Centre, London, Ontario, Canada, ^bThe University of Western Ontario, London, Ontario, Canada

Objectives: The frail elderly are a complex patient group at high-risk for ED and hospital readmissions. The purpose of this prospective study was to describe the characteristics of the frail elderly population presenting to an acute care teaching hospital ED and assess the impact of an ED-based Geriatric Nurse Practitioner (GNP) on hospital readmission

Methods: An experienced GNP was seconded from the geriatric program to work in the ED. All community dwelling patients over 75 years old presenting to the ED were screened by their primary care emergency nurse for referral to the GNP using a simple validated 6-item triage tool (TRST) to identify elderly patients at high risk for ED and hospital readmission. The GNP did a geriatric assessment in the ED or by telephone. Geriatric issues were identified and a plan was developed collaboratively with the patient, family, and family doctor to ensure that these frail elderly were linked with appropriate community resources. Prospectively collected data from the TRST and a standardized GNP assessment form were abstracted to a database and analyzed using SPSS. The primary study outcome was the 30-day hospital readmission rate after their index visit to the ED.

Results: During the 6-month study period, 176 patients were referred to the GNP. These patients had a high percentage of geriatric risk factors: falls (48%), depression (30%), cognitive impairment (42%), recent functional decline (71%), and malnutrition (15%). On their index ED visit 26% required admission to hospital. The GNP assessment resulted in 64 new Homecare enrollments and 40 referrals to specialized geriatric outpatient services. The 30-day hospital readmission rate after the ED GNP assessment and intervention was only 6/176 (3.4%).

This prospective cohort study describes a process to identify a frail elderly ED population and the positive impact of introducing an ED-based GNP on hospital readmissions.

Session 4: Care of the Older ED Patient during the Visit

Paper 4A: Lessons learned from the SIGNET Project

Authors: Lorraine C. Mion^a, Stephen W. Meldon^{a,b}, James Campbell^{a,b}, Robert M. Palmer^{b, c}

Institution: ^a MetroHealth Medical Center Cleveland, Ohio, United States, ^b Case Western Reserve University School of Medicine Cleveland, Ohio, United States, ^c Cleveland Clinic Foundation Cleveland, Ohio, United States

Objectives: To address the rising numbers of complex elders seen in the ED, we created a model of care that a) identified at-risk elders in the ED, b) created formal linkages with primary care providers and community agencies, and c) integrated geriatric and ED knowledge. We conducted a formal program evaluation and a subsequent randomized controlled trial to examine the effectiveness of this model on older adults' outcomes. This paper discusses the practical aspects, barriers and facilitators to establishing this program.

Methods: In June, 1996, the PI began planning the program (10). Key stakeholders within her institution as well as other institutions were brought into the planning process. Process aspects of the program included developing the screening process for at-risk elders; determining risk factors to use for screening; determining which patients would be considered as 'at-risk'; determining the content for the targeted, comprehensive geriatric assessment; determining the referral and linkage process with primary care physicians and community agencies; and determining data to collect and share across sites. Structural aspects included scope and responsibility of a project director, project coordinator, the ED physicians and nurses; the geriatricians; type of practitioner to conduct the geriatric assessments; and roles and responsibility of community agency personnel. Training and educational sessions were planned, developed and instituted for medical and nursing personnel. Communication processes among the participating organizations were developed and implemented. Last, financial resources had to be considered to start the program.

Results: Originally, 5 hospitals and 11 community agencies were approached. One hospital and one community agency declined to participate. Structural aspects of the program were addressed by identifying the PI, hiring a full time project coordinator, using a nurse-observed triage assessment tool for the first-line screening (4); identifying 6 risk factors; utilizing an advanced practice nurse in geriatrics to conduct the geriatric assessments and make necessary referrals; and designing and implementing a teleform data base for the data entry and analyses. Funding was obtained for 3.5 years. To date, 3 of the original 4 hospitals and 7 of the 10 community agencies continue to exist and participate in the program (three have closed). Ongoing education and training continues with ED personnel. At one site, an interdisciplinary Geriatric Trauma Consultation Team was formed in January 2004 and all older adults admitted with trauma are seen either in the ED or in the ICU and followed throughout hospitalization

Practice implications: It is feasible to institute geriatric principles of screening and targeted assessment for at-risk elders in an ED setting. It is also feasible to establish formal linkages with independent agencies and institute referrals quickly. Importantly, the screening, assessment and linkage model of care should be targeted to those who would most likely benefit.

Session 5: Making the ED an Elder Friendly Environment

Paper 5A: How elder friendly is our ED?

Authors: Belinda Parke, Kathleen Friesen

Institution: Fraser Health, Chilliwack, British Columbia, Canada

Background/ Objectives: Are we working in ED environments that are antithetical to the goals of a frail senior population? In consideration of the demographic shift that has produced increasing numbers of older adults in EDs, it is timely to consider an elder friendly framework. The objectives of this paper were: 1) To identify elements of the physical environment that promote functional ability in frail seniors; 2) To provide tools to assist participants to evaluate their local EDs

Results: This paper addressed the questions: "How can the physical environment of the ED be improved to support the well-being of frail senior patients and improve safety of staff and seniors"? Examples of audit tools were provided to enable participants to assess their local settings (11, 12).

Practice implications: This paper will be of interest to administrators, planners, quality improvement coordinators and clinicians involved with planning, designing or renovating EDs.

Session 6: Effectiveness of Interventions for Older ED Patients

Paper 6A: Emergency Medical Services (EMS) as a resource to identify and address unmet needs of older adults

Author: Manish Shah

Institution: University of Rochester School of Medicine, Rochester, New York, USA

Background: Older adults (age 65 and older) have significant, unmet health care needs. Traditional screening and intervention programs have been shown to be insufficient to identify older adults in need and provide interventions. Because of its public health potential, the emergency medical services (EMS) system has been suggested as a possible non-traditional resource to identify and address older adults with unmet needs.

Objectives: To perform an interim analysis of a study evaluating the impact of an emergency medical service (EMS) program that screens older adults during emergency medical responses to identify and refer patients at-risk for pneumococcal disease, influenza, and falls.

Methods: A prospective controlled trial of community dwelling older adults is underway in two rural towns (February 2004-June 2005) in Western New York State. In the intervention town, patients cared for by EMS are screened to identify those at risk for pneumococcal disease, influenza, and falls. Screening occurs through questioning patients and performing a rapid visual evaluation of the home environment. Each patient is provided with educational materials and the screening results are faxed to their primary care physician with a request for further evaluation and intervention. In the control town, usual care (no screening) is provided. Patients are surveyed two weeks after EMS care to confirm (for the intervention group) and measure (for the control group) risk status at the time of initial EMS contact and then, to measure the impact of the intervention, all patients are asked about their current risk status.

Results: Interim results through February 2005 are presented. EMS successfully screened 175/191 (92%) intervention group patients. 117 control group patients were identified. 190 (62%, 112 intervention and 78 control) patients received successful follow up. A similar proportion of intervention and control group patients reported lacking the pneumococcal vaccine

(33% vs. 32%), lacking the influenza vaccine (46% vs. 52%), and falling in the previous year (41% vs. 38%). Environmental concerns for falls were noted in 30% of intervention group homes entered. Upon follow up, intervention and control group patients identified as being at risk reported similar rates of receiving the pneumococcal vaccine (20% vs. 4%, $p=NS$), influenza vaccine (31% vs. 33%, $p=NS$), and making changes to prevent falls (10% vs. 8%, $p=NS$).

Interpretation of results: EMS screening of older adults during emergency responses is feasible. Older adult EMS patients are at risk for pneumococcal disease, influenza, and falls and can benefit from interventions. However, providing written notification to primary care physicians does not result in services being provided to patients in need.

Practice implications: Further studies determining the ideal screening elements, developing an effective intervention program to improve health outcomes, and evaluating the reliability and validity of EMS screening are needed. If successful, this type of program has great potential to promote the health of older adults.

Paper 6B: ISAR-2: A two-step intervention for seniors in the emergency department

Authors: Jane McCusker ^{a,b}, Josée Verdon ^b

Institutions: ^a St. Mary's Hospital Center, Montreal, Quebec, Canada, ^b McGill University, Montreal, Quebec, Canada

Objectives: This presentation aimed to describe: 1) the development of the 2-step intervention: ISAR-2; 2) the evaluation of cost-effectiveness of ISAR-2; and 3) results of a survey to describe methods of implementation.

Methods: The ISAR-2 intervention was designed for ED patients aged 65+ ready for discharge home. It is a two-step case-finding intervention: Step 1 is screening with quick, 6-item, self-report questionnaire (ISAR) (3, 5). Step 2 is a brief, standardized nursing assessment to determine unmet needs. The intervention (individualized) includes: routine notification plus follow-up of particular problems: primary MD, home care, others as needed. A prospective observational study was used to develop and validate the ISAR screening tool. A multisite (4 hospital) randomized controlled trial was used to evaluate the cost-effectiveness of the intervention (2). A descriptive study was used to survey Quebec EDs on implementation methods.

Results: The intervention significantly increased rates of referral from ED to community health centers and primary MD and rate of home care utilization during the month after the ED visit (13). The intervention was cost-effective: there was a significant reduction in the 4-month rate of functional decline (including death), with no increase in overall societal costs (14). The survey of Quebec EDs had a participation rate of 87.4% (97/111). 12% had previously or currently used parts of the ISAR-2 intervention. The most frequent method of use of the ISAR was administration to pts aged 75+ at admission to the ED by a nurse. Step 2 was performed outside the ED (wards or community agencies). The most frequent implementation problems identified in the survey included: misunderstanding of the difference between screening vs. assessment tools, inadequate resources (for screening and/or follow-up), and the need for pre-testing/adaptation

Conclusions: ISAR-2 and other, similar ED interventions for elders have beneficial health outcomes and appear to be cost-effective. The step 1 screening may improve the efficiency of interventions. Implementation needs attention (e.g., education of staff, adaptation of tools). Further studies are needed in different settings.

Paper 6C: The SIGNET model for ED services

Authors: Lorraine C. Mion^a, Stephen W. Meldon^{a,b}, James Campbell^{a,b}, Robert M. Palmer^{b,c}

Institutions: ^a MetroHealth Medical Center Cleveland, Ohio, United States, ^b Case Western Reserve University School of Medicine, Cleveland, Ohio, United States, ^c Cleveland Clinic Foundation Cleveland, Ohio, United States

Objectives: To address the rising numbers of complex elders seen in the ED, we created a model of care that a) identified at-risk elders in the ED, b) created formal linkages with primary care providers and community agencies, and c) integrated geriatric and ED knowledge. We conducted a formal program evaluation and a subsequent randomized controlled trial to examine the effectiveness of this model on older adults' outcomes.

Methods: In 1997, 4 EDs and 10 community agencies jointly implemented SIGNET: Systematic Integration for a Geriatric Network of Evaluation and Treatment (10). Case finding is accomplished by using a simple, 6-item screening assessment tool completed by the primary or triage nurse (4). A geriatric advance practice nurse (APN) further assesses those who screened positive, i.e., considered 'at-risk'. Patients with unmet medical, health or social needs are referred to their primary physician and to appropriate community services. During the clinical demonstration phase, data were monitored on processes: number of older adults screened, number considered 'at-risk', number further assessed by the APN, number requiring post-ED referrals, and number who accepted the referral. In addition, aggregate data from each ED tracked the number of repeat ED visits among those 65 years and older. A subsequent randomized controlled trial (RCT) was conducted in two of the original four EDs to determine: rate of repeat ED use, hospitalization or nursing home placement; use of community services; impact on function 30 and 120-days post-ED visit; and sensitivity and specificity of the triage risk screening tool (TRST) (4, 15).

Results: During the clinical demonstration project, 75% (n=53,362) of all older adults entering the ED were screened by the triage/primary care nurse. There were 11,788 (22%) who returned home and considered 'at-risk' by the TRST. Of these, 5,804 (49%) received a comprehensive assessment by the geriatric APN. Of these, 2,475 (43%) required further follow-up by their physicians and community agencies. 97% of the patients followed through on the referrals. The RCT conducted at two of the EDs enrolled 650 subjects. Overall, there was no difference in return ED visits, hospitalization or nursing home placement between the usual care group and the SIGNET group. Subgroup analysis showed that the at-risk group was more likely to benefit from the SIGNET intervention with fewer hospital days (0.6 versus 1.6), lower costs (\$804 versus \$1,252) and fewer nursing home placements (2% versus 7%). Two or more risk factors on the TRST was found to be predictive of subsequent ED use, hospitalization or nursing home placement at both 30 days (RR = 1.7) and 120 days (RR = 1.9).

Practice implications: It is feasible to institute geriatric principles of screening and targeted assessment for at-risk elders in an ED setting. It is also feasible to establish formal linkages with independent agencies and institute referrals quickly. Importantly, the screening, assessment and linkage model of care should be targeted to those who would most likely benefit.

Session 7: Implementation of Interventions for Older ED Patients: Challenges and Barriers

Paper 7A: Two-step intervention in Queensland, Australia: Does it affect return visits and community service utilisation?

Author: Mary Fenn

Institution: Royal Brisbane and Women's Hospital, Herston, Queensland, Australia

Background: The introduction of a Community Assessment and Referral Service (CARS) to the ED of the Royal Brisbane & Women's Hospital, Queensland, Australia, was recognition of the requirement to address the specific needs of older people by identifying geriatric and functional problems early, providing opportunities to maximize functioning and facilitating safe and effective discharges back to the community.

Objectives: CARS has been operational for eighteen months and during this time the focus has been to introduce this 2 stage intervention for elders presenting to the ED (2) to the entire ED team, integrate CARS into the existing multidisciplinary environment, raise awareness of the role of the CARS nurse in coordinating care for elderly patients and facilitate safe and effective discharges from the ED. This early phase of CARS has required planning, consultation and negotiation with a wide range of hospital and community stakeholders.

Methods: The CARS model that was developed, implemented and tested involved:

- Case-finding 'at risk' older people through the use of the Identification of Seniors at Risk (ISAR) Screening Tool (3),
- Providing brief systematized nursing assessment of 'at risk' older people using a standardized protocol
- Initiating interventions and referrals in response to problems identified by assessment, that are aimed at prevention and management
- Providing an interface between the community and the hospital health care teams
- Functioning as an integral part of the multidisciplinary ED team to either divert suitable clients to home management in lieu of admission or initiate early discharge planning strategies if the patient requires admission.

Results: CARS was implemented as intended. Nurses with community and/or aged care experience were recruited to implement the CARS model of care. The Service has succeeded in screening 60% of older patients presenting to the ED. Some high risk patients progress to receive a systematized nursing assessment. During the trial period 37% of high risk patients received comprehensive assessments. For patients discharged home CARS provided a coordination role and initiates an average of 50 referrals per month. For those patients admitted, including Short Stay Unit (SSU), referrals averaged 125 per month. The Patient Satisfaction Survey analysis demonstrates that patients who are assessed by CARS, receive community referrals and are discharged home are satisfied with their stay in the ED and/or the SSU. Results of the Health Professional survey indicates that, after the initial 2 months of implementation, CARS was, in the main, well received and positively viewed as an 'interface' between hospital and community. The results of the survey indicate that CARS is positively regarded by hospital and community health professionals. GPs indicated, by responding to a three-question "GP Faxback Evaluation", that CARS facilitated information sharing and that timely, written health information was useful for patient management.

Interpretation of results: A retrospective chart review using a before and after design study has demonstrated a statistically significant increase in referrals for patients at discharge from ED for the intervention group, as well as a 17% reduction in representations at 30 days (statistically significant). These are promising early trends and the research will be extended over the next 12 months.

Paper 7B: Elder Alert in British Columbia: Process and outcome results of ED screening with ISAR

Authors: Rebecca N. Warburton^a, Jane McCusker^{b,c}, Belinda Parke^d

Institutions: ^a University of Victoria, Victoria, British Columbia, Canada, ^b St. Mary's Hospital Center, Montreal, Quebec, Canada, ^c McGill University, Montreal, Quebec, Canada, ^d Fraser Health Authority, Chilliwack, British Columbia, Canada

Objectives: This article reports preliminary cost and outcome results for a patient safety quality improvement program intended to improve outcomes for patients aged 75 or more who visit the ED (6, 16). The program uses the Identification of Seniors at Risk (ISAR) (3) scale to screen, and refers patients at high risk for appropriate intervention (2).

Methods: The PLAN-DO-STUDY-ACT improvement cycle was used as a framework. Simple outcomes have been assessed by comparing process audit data on only 277 patients in four sub-groups based on risk status and interventions received: (not screened, n = 150); HP (screened as high-risk, received partial or no referrals, n = 34); HC (screened as high-risk, received complete referrals, n = 38); L (screened low-risk, n = 55). Costs and benefits were assessed based on estimated program outcomes and average costs; sensitivity analysis was performed to test alternate assumptions.

Results: 1) The screening tool appears to be accurate (emergent levels and ISAR scores correctly ranked the four patient groups). 2) Screening and referral appear to have a positive impact; high-risk patients who received complete referrals (versus high-risk patients who did not) had reduced median lengths of stay (8 days versus 6 days), fewer returns to the ED within 30 days (16% versus 21%), and fewer subsequent admissions to hospital (13% versus 21%). Results are not statistically significant at the 5% level. 3) Program costs were no more than \$34,000 per year, and likely less than \$30,000. Based on average costs for acute care (\$988/day) and ED visits (\$153 each), the value of saved visits and days resulting from Elder Alert screening are estimated as follows: a) With ideal implementation (all eligible patients screened, all high-risk patients receiving complete referrals), SPH could expect 78 fewer ED returns and 121 fewer admissions annually (value \$130,000); with 46% screened (average rate from audit data), and all high-risk patients receiving complete referrals, SPH could expect 36 fewer ED returns and 56 fewer admissions annually (value \$ 60,000); even as actually implemented (46% screened, referrals completed for 46% of high-risk patients), SPH could expect 16 fewer ED returns and 26 fewer admissions annually (value \$ 28,000). The value of avoided care exceeds program costs under most assumptions.

Interpretation of results: Screening and referral appear to be effective in improving outcomes. Because program costs were low, there is the potential to achieve net benefits. However given global budgeting for hospital care, improvements in the use of resources (rather than budgetary savings) would be expected.

Practice implications: 1) Screening and referring all eligible patients have still not been achieved; these are areas for future investigation and improvement. 2) The methods for improvement (the PLAN-DO-STUDY-ACT framework; process evaluation; multidisciplinary

Working Group meetings; outcome assessment) are practical and useful for improving quality and safety in a small community hospital with limited resources.

Paper 7C: Challenges in implementation of high-risk screening in Alberta

Authors: Jane Bankes, Barb Stolee

Institution: Calgary Health Region SECP, Calgary, Alberta, Canada

Objectives: This paper describes the challenges in implementation of the ISAR screening tool in a large urban ED. Implementation of the ISAR was undertaken as a quality improvement initiative to decrease the variability in the proactive identification, assessment and referral of seniors at risk for health deterioration on discharge from the ED.

Methods: The issues and challenges that presented in project design, baseline data collection, implementation. Collaborative approach using PDSA test cycles of the ISAR (3) will be presented and where appropriate contrasted to a successful project that ran concurrently.

Practice implications: Issues that presented in our project work include: 1) the difference between a screening and assessment tool is not well understood; 2) "at risk" for functional decline in the community is contrary to what the ED understands as "risk" and therefore screening for functional decline was not viewed as a component of ED practice; 3) the use of a new quality improvement approach provides both opportunities and challenges, 4) priorities for practice improvement differ in practice settings, and there are specific challenges in trying to "sell" a project in contrast to having "buyers" look for ideas to improve on current practice. In studying the challenges of undertaking test cycles of the ISAR in the ED we are able to incorporate what we have learned into subsequent project planning.

Paper 7D: Adaptation of ED geriatric tools and interventions in Denmark

Authors: Dora Fog, Elizabeth Rosted

Institution: Amager Hospital, Denmark

Objectives: 1) To translate ISAR (Identification of Seniors At Risk) (3) from English into Danish and cross-culturally adapt the tool; 2) to analyse the sensitivity and specificity of the Danish version of ISAR compared to the initial clinical assessment by the geriatric team as it is performed in an ED at Amager Hospital.

Methods: A cross-cultural adaptation (17, 18) of the ISAR tool was used (data not presented). Analyses of sensitivity and specificity were used to compare ISAR against the gold standard. The gold standard used is the clinical geriatric identification of patients that take place every morning in the medical ED, before the geriatric team make their consultation to the identified patients. The target population was patients aged 65+ years consecutively admitted to the medical ED. Patients were enrolled between 25th of August and 24th of September 2003. Recruitment was conducted on weekdays during the dayshift (between 8 am and 4 pm). 326 patients were included during these periods. The patients were not enrolled until after the usual reception procedure had taken place carried out by the ED nurse. They were screened using the ISAR tool and assessed by the geriatric team. 84 patients were excluded, 55 of these excluded patients came from nursing homes and other catchment areas.

Results: Using a cut-point of 2 or more, we found a sensitivity of 90% and a specificity of 26%. With a cut-point of 3 or more, the sensitivity was 68% and specificity 47%; with a cut-point of 4 or more, we found a sensitivity of 40% and a specificity of 76%.

Interpretation of results: Compared with the results of McCusker et al. from Canada (3),

results from this study show a higher sensitivity and much lower specificity. In practice this means that ISAR could not sort out the patients “not in need of geriatric consultation”. There are too many false positives. These differences can be due to:

1. The measures are compared to different standards (a geriatric team compared to variables such as adverse health outcome).
2. Differences in admission criteria to the two hospitals. The material collected in Montreal is from 1999 and the cause could be demographic and the population in general had better health in Canada.
3. The distribution on age groups in McCusker’s material shows a slightly younger population (65-74 years=50%). 50% of the population in this study is over 80 years old. McCusker’s population more often lived together with a wife or husband (51%) whereas in this study only 31% had a cohabitant.

Practice implications: 1) ISAR could not replace the initial geriatric screening in the medical ED; 2) compare ISAR to a new gold standard; 3) long term follow-up on the population (n=242) is necessary; 4) if ISAR has a predictive validity at Amager Hospital it is necessary to investigate ISAR at the five EDs in the Copenhagen Hospital Corporation.

Session 8: Care of the Older ED Patient: Linking Hospital and Community

Paper 8A: Caring for the elderly in Australian EDs

Author: Mary Fenn

Institution: Royal Brisbane and Women’s Hospital, Herton, Queensland, Australia

Background: There is widespread commitment to improving the care of elderly in EDs across Australia. EDs in many parts of Australia report the introduction of initiatives such as short stay units, aged care coordinators, community health nurses and rapid response teams to assist in streamlining the management of the elderly. This presentation reports 4 well-resourced Australian Programs.

1) National Demonstration Hospitals Program

Funded by the Commonwealth Government, the NDHP (National Demonstration Hospital Program) model is one where LEAD hospitals (identified as providing best practice services) are linked with a number of other hospitals to share that best practice. The essence of NDHP is the transfer of information about innovative health service delivery models between lead and collaborating hospitals. It is a clinician-led model so that outcomes from the projects had practical application at the coal-face after project funding ceased. The 4th funding round of NDHP targeted better health outcomes for older Australians in acute hospitals. ED projects including introduction of screening tools, development of referral pathways, use of care coordinators and partnerships with residential care facilities. CONTACT: www.archi.net.au (Australian Resource Centre for Hospital Innovations)

2) Agedcare Services in Emergency Teams (ASETs)

ASETs were established to improve the care of older people attending EDs. Teams were established in 36 EDs across New South Wales. The ASETs aligned themselves to the hospitals Aged Care Services affording good linkage with aged care resources and strong professional networks. The principle aim was to identify the older person suitable for ASETs by using locally determined screening tools with the aim that the older person would receive safer and more effective care when presenting to EDs. The evaluation has provided policy officers,

administrators and clinicians greater understanding about the number and nature of ‘complex’ patients presenting to EDs. CONTACT: Ian O’Dea Ian.O'Dea@hunter.health.nsw.gov.au
Phone 61 2 49214860

3) Hospital Admission Risk Program (2001 – 2005)

HARP is a component of the larger Hospital Demand Strategy funded by the Victorian Government in response to increased demand pressure and capacity constraints on the public health system. HARP is not aged specific, nor is it ED specific, but there are a number of specific HARP interventions that have relevance for elderly people in EDs. The scope of the projects varies and the models differ but essentially there are 3 distinct strategies within the ED Events Management approaches that affect the elderly:

- Rapid response –rapid assessment, short term case management and provision of services and interventions
- Care Coordination –to work with patients to access treatment and services and maintain their health at the best possible level.
- Disease Management and Integrated Care Projects –Many elderly patients are involved in these projects that target diseases such as COPD, CCF and diabetes.

Emergency demand pressure at a systems level for the HARP funded hospitals continues to increase in absolute terms. However, the relative rate of increase has slowed over time. There are also promising trends of a reduction in representations, ED presentations with subsequent admissions and emergency related bed days. CONTACT: <http://www.health.vic.gov.au/harp/>

4) Community Hospital Interface Program (CHIP)

This Program is Queensland based and has been in place in a growing number of EDs since the late 90s. CHIP is a generic framework which incorporates a systematic approach to identifying patient’s needs when entering and leaving the acute care setting. The model is based on three essential and interrelated components, these being risk screening, assessment and coordination of services. The various CHIP services uses a variety of evidence based screening & assessment options. A web based Resource Manual has been developed to assist Queensland health districts establish CHIP programs. CONTACT: Dee_Jeffrey@health.qld.gov.au
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Paper 8B: The aging tide: Immersing ER into the world of geriatrics

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Abstract not available.

Session 9: Research on Care of the Older ED Patient

Paper 9A: Research priorities in the emergency care of older patients

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There will be almost 46 million people at least 75 years old in the United States by the year 2050. They will make over 28 million emergency department (ED) visits if there is no change in frequency ED use. The demographic imperative resulting from this marked increase in older persons around the globe and an awareness of the difficulty in diagnosis and management of geriatric patients (19) has lead to an increase in research on the care of older patients (including disease and injury prevention).

Objectives: This paper's objectives are to 1) present a history of research in geriatric emergency medicine, 2) discuss important methodological issues in geriatric emergency medicine research and 3) summarize the process for developing the American Geriatrics Society (AGS) research agenda for emergency medicine (20-22).

Methods: The research agenda setting process (RASP) was developed by the AGS in conjunction with experts from ten participating surgical and related specialty organizations, including emergency medicine. A "content expert" (CE) for each specialty developed a Medline search strategy in conjunction with RAND Health librarians. The CE reviewed the search to identify papers that were germane to research in the emergency care of older patients. The emergency medicine team was charged with developing an agenda for trauma research too. The CE and a senior writing group member drafted a paper that synthesized the current literature and suggested areas for further research. A panel consisting of AGS members and emergency physicians with geriatrics expertise reviewed this paper. The research agenda was further refined at a two-day retreat attended by the writing teams from each specialty, senior geriatricians, National Institute on Aging (US) researchers and RAND researcher. Two senior geriatricians reviewed the resulting paper.

Results: The Medline search for emergency medicine resulted in a list of 3,348 articles; 299 articles were pertinent and were reviewed. The search for trauma resulted in a list of 1,838 articles; 133 of which were reviewed. Research agenda items were defined for multiple topics within geriatric emergency medicine. These included use patterns, physician training and comfort, ED environment, pre-hospital care, cognitive impairment, functional assessment, medication use, screening and assessment, and specific clinical syndromes (falls, infectious disease, acute coronary syndromes, and cardiopulmonary arrest). The trauma topics included demographics, mortality, functional outcomes, penetrating trauma and aggressive resuscitation. The emergency medicine team identified 30 important research questions covering the listed topics. The RASP recognized that there was little value in future single center descriptive studies. They placed a low priority on descriptive studies and recommended that any future descriptive studies of older persons' ED use should come from multi-center groups and national data bases.

The three key research questions the RASP identified were (20-22):

“Can alterations in the process of ED care, such as those found to be beneficial elsewhere (i.e., geriatric specialty inpatient units improve), the outcomes of ED patients?”

“What diagnostic and therapeutic interventions can improve outcomes in older ED patients with high-risk common complaints such as abdominal pain and acute coronary syndromes?”

“In older blunt multiple trauma patients, does early invasive monitoring and aggressive resuscitation result in improved outcomes?”

Interpretation of results: Important studies to improve care of older patients should identify elements of the micro-environment likely to affect outcomes in older patients. These studies should lead to evaluations of interventions to improve the environment. Hypothesis generating studies (especially prospective longitudinal studies) of common geriatric syndromes are needed to investigate diagnostic and therapeutic processes that may lead to more favorable outcomes. These would lead to controlled trials evaluating the effectiveness of these processes. Studies to predict which trauma patients are at risk for multiple organ failure and interventions to reduce fatalities are needed.

Practice implications: There has been a rapid increase in geriatric emergency medicine research and this will continue. Researchers must take care in their methods to avoid biased results. A research agenda for geriatric emergency medicine has been developed, using a combination of review of current literature and expert opinion.

Session 10: Medications in Older Patients: Cause of ED Visits and Return Visits?

Paper 10A: Rétrospective sur la médication des patients se présentant à l'urgence: survol des vingt dernières années (Retrospective on medication of ED patients: Summary of the past 20 years)

Author: Marie-Andrée Pilon

Institution: Hôpital Charles LeMoyne, Greenfield Park, Quebec, Canada

Malgré tous les efforts mis en place par l'ensemble des professionnels médecins, pharmaciens, infirmiers des réseaux de la santé publique et privé, nos personnes âgées se présentent toujours à l'urgence avec des listes impressionnantes de médicaments. Il n'est donc pas surprenant que plus de 30% de ces consultations à l'urgence soient reliées à leurs médications ou leur polypharmacie. Le but de ma présentation n'est pas de centrer la discussion sur l'ensemble des effets indésirables, interactions, réactions adverses et complications diverses se produisant chez notre clientèle gériatrique. Mon objectif est d'amorcer une réflexion sur les diverses transformations des médications que prennent nos personnes âgées depuis les vingt dernières années. Nous sommes passés d'une époque VALIUM, où une grosse proportion de cette clientèle consommait presque uniquement des tranquillisants, quelques médications cardiotoniques et des suppléments vitaminiques. A suivi l'époque PROZAC, l'époque ASPIRINE et maintenant, l'époque des GUIDELINES OU LIGNES DIRECTRICES. Nous sommes passés d'une époque d'un petit nombre de médicaments à une époque "guidelines" où d'emblée on traite le diabète avec un minimum de quatre médicaments, l'insuffisance cardiaque avec un minimum de quatre médicaments, l'ostéoporose avec trois médicaments, etc. Il est donc courant de retrouver douze médicaments différents chez notre patient. Et tout ceci est qualifié de bonne pratique... Est-ce vraiment le cas? Est-ce que nos consultations à l'urgence s'en sont trouvées améliorées ou dégradées?

Despite all efforts put in place by the body of professionals - doctors, pharmacists, nurses - in the public and private health care sectors, our elderly still show up at the ED with impressive lists of medications. It is therefore not surprising that more than 30% of emergency consultations are related to patients' medications or their polypharmacy. The goal of my presentation is not to centre the discussion on the undesired effects, interactions, adverse reactions and diverse complications that occur with our geriatric clientele. My objective is to encourage reflection on the various transformations in medications taken by the elderly in the last twenty years. We've been through the VALIUM era, where a large portion of this clientele almost exclusively used tranquilizers, a few cardiac medications and some vitamin supplements. Then came the PROZAC era, the ASPIRIN era and now the CLINICAL GUIDELINES era. We've gone from an era with a small number of medications to one of "guidelines" where we automatically treat diabetes with a minimum of four medications, cardiac failure with a minimum of four medications, osteoporosis with three medications, etc. It is common to find a patient with twelve different medications. And all this qualifies as good practice... Is it really the case? Are our consultations in the ED worse or better for it?

Paper 10B: The era of polypharmacy and adverse events - what is our role as emergency physicians, nurses and pharmacists?

Author: Corinne M. Hohl

Institution: Emergency Department, Vancouver General Hospital, Vancouver, British Columbia, Canada

Background: As our population ages and more and more medical conditions are treated with pharmaceuticals, the incidence of serious adverse drug related events (ADREs) has increased. Recent studies have indicated that such ADREs may be responsible for up to 6% of all ED visits and may represent the 2nd most common reason for coming to the ED in high risk groups!

Objectives: How well are we, as emergency physicians, nurses and pharmacists, equipped to recognize and deal with these emergencies? How can we examine medication lists when we are under time pressure? What happens to the presentations that we missed?

Practice implications: This interdisciplinary talk will focus on the current epidemiology of ADREs in our EDs. We will review common presentations of ADREs and examine our performance at picking up adverse events. A discussion will ensue on practical and implementable detection tools which may aid our departments in preventing more drug related illness and improving quality of care.

Paper 10C: L'identification des problèmes liés à la médication des patients admis à l'urgence (The identification of medication-related problems in the ED)

Author: Patrick Boudreault, Chantal Gilbert, Sylvie Plante

Institution: Hôpital St-François d'Assise, CHUQ Québec, Quebec City, Quebec, Canada, Association des pharmaciens en établissements de santé du Québec, Montreal, Quebec, Canada

Introduction et objectifs : Les problèmes pharmacologiques contribuent à la morbidité du patient et peuvent mener au prolongement du temps de séjour à l'urgence. Les histoires médicamenteuses réalisées à l'urgence se doivent d'être le plus exact possible. Or, dans 10 à 40% des cas elles comportent des erreurs et omissions. Plusieurs études ont démontrées que le pharmacien recueille plus d'informations quantitatives et qualitatives lors de l'histoire médicamenteuse que les autres professionnelles de la santé. Cette recherche avait comme objectifs de réaliser l'histoire médicamenteuse et identifier les problèmes reliés à la pharmacothérapie des patients de l'urgence majeure de l'hôpital St-François d'Assise de Québec.

L'impact de l'histoire médicamenteuse réalisée par un pharmacien sur la pratique médicale à l'urgence a aussi été mesuré.

Développement et résultats : Étude descriptive de population dans laquelle 259 patients ont été évalués durant 20 jours ouvrables. L'histoire médicamenteuse réalisée par un pharmacien sous forme d'entrevue semi-dirigée permettait de détecter des problèmes pharmacothérapeutiques actuels ou potentiels. L'histoire médicamenteuse était placée au dossier médical. Les impacts de ce projet auprès de l'équipe médicale ont été évalués par un sondage. Les résultats démontrent que 85.5% des patients consommaient en moyenne 6 médicaments. Des problèmes reliés aux médicaments furent identifiés chez 51.2% des patients. Une analyse de sous-groupe démontre que 62.2% des problèmes reliés à la pharmacothérapie ont été identifiés chez les patients de 60 ans et plus. Les problèmes les plus fréquents furent l'inobservance (36.8%), l'utilisation de doses trop faibles (17.7%) ainsi que les effets indésirables (15.3%). Les principales classes pharmacologiques associées au problème d'inobservance étaient les agents cardiovasculaires, les médicaments du système nerveux central et les hypoglycémifiants. 100% des répondants au sondage ont jugé que l'histoire médicamenteuse avait un impact positif sur le temps consacré à leur pratique, sur le dépistage des problèmes reliés à la pharmacothérapie et améliore la qualité des soins destinés aux patients.

Conclusion : Cette recherche démontre qu'au moins 50 % des patients présentent des problèmes pharmaceutiques. L'histoire médicamenteuse ainsi que l'analyse pharmacologique réalisées par le pharmacien contribuent à une meilleure prise en charge à l'urgence.

***Introduction and objectives:** medication-related problems contribute to patient morbidity and can lead to extended stays in the ED. The medication histories taken in the ED must be as precise as possible. However, in 10% to 40% of cases they contain errors and omissions. Several studies have shown that pharmacists gather more information, both qualitatively and quantitatively, when taking medication histories than other healthcare professionals. The aim of this research was to take the medication history and identify problems relating to the medication of patients in the St-François d'Assise Hospital major emergency department in Quebec. The impact of medication histories taken by a pharmacist on medical practice in the ED was also measured.*

***Development and results:** Descriptive study of a population of 259 patients evaluated over 20 working days. The medication history was taken by a pharmacist in the form of a semi-directed interview, enabling existing or potential medication-related problems to be detected. The medication history was placed in the [patient's] medical file. The impact of this project on the medical team was evaluated by means of a survey. The results show that 85.5% of patients took 6 medications on average. Medication-related problems were identified in 51.2% of patients. Analysis of this sub-group showed that 62.2% of problems relating to medication were identified in patients aged 60 or over. The most common problems were non-compliance (36.8%), the use of excessively low doses (17.7%) and side effects (15.3%). The principal classes of drugs associated with the problem of non-compliance were cardiovascular agents, CNS drugs and hypoglycaemics. 100% of survey respondents considered that the medication history had a positive impact on the time devoted to their practice and on the screening of medication-related problems, and that it improved the quality of care given to patients.*

***Conclusion:** This research shows that at least 50% of patients present medication problems. The medication history and medication analysis carried out by a pharmacist contribute to better patient management in the ED.*

Session 11: Additional Presentations

Paper 11A: Acute care of the elderly in emergency: A call to the challenge

Author: Doris J. M. Splinter Flynn

Institution: Kingston General Hospital, Kingston, Ontario, Canada

Background: Kingston General Hospital (KGH) is a tertiary care academic health sciences centre ED that services a broad geographical area. In 2003, 22.1% of ED visits were by patients >65yrs, 29.3% of these patients were admitted to hospital. Kingston is one of Canada's top retirement communities. The community has no designated convalescent care beds. The average length-of-stay for patients >65yrs in ED is 2.5 times longer than younger population. Emergency Medical Services bring 47% of those >65 yrs to ED.

Objectives: The presentation will describe the operationalization of a specialized Geriatric Emergency Nurse into this ED.

Methods: KGH successfully received funding from the Ontario Ministry of Health and Long-Term Care for a Geriatric Emergency management (GEM) Clinical Nurse Specialist. In 2004, an expert ED nurse who undertook intensive gerontological learning assumed the role. Formal liaison was established between the ED and the Regional Geriatric Program of Southeastern Ontario and the Regional Geriatric Program of Toronto who oversee the initiative. There is a network of 8 GEM nurses. The GEM nurse liaises with internal services and external agencies. Goals of GEM are to develop enhanced service to frail elder ED patients through improving assessment, care and planning for frail seniors in order to improve patient outcomes. These goals are met through formal education, mentorship, direct care, and by building a business case to obtain organizational support for enhancement of care of elderly in ED.

Results: Six months after introducing the specialized geriatric emergency nurse role, 433 hours of direct specialized care have been provided to 143 patients, 33 of whom have been referred to specialized geriatric services.

Practice implications: Over 100 staff have received formal education about screening frail elderly and a business case has been developed to obtain corporate support for enhancement of ER care of elderly through improved staff skill mix, medication management, physiotherapy support and improved physical environment. Ongoing program evaluation will provide data for continued development.

Paper 11B: Geriatric emergency management: Improving care to frail seniors

Authors: Marlene Awad^a, Cal Martell^b

Institution: ^a Sunnybrook and Women's College Health Sciences Centre, Toronto, Ontario, Canada, ^b Ottawa Hospital, Civic Campus, Ottawa, Ontario, Canada

Background: Seniors are the fastest growing population in our community and disproportionately represented in ED encounters. The ED serves as the entry point to the health care system for many seniors. It is also an important safety net when the system of services becomes disrupted. Unfortunately the ED was not designed to manage the complex and sub-acute nature of geriatric issues. Innovations in care delivery are needed.

Recognizing the special needs of frail seniors in the ED, the Ontario Ministry of Health & Long-Term Care has funded eight Geriatric Emergency Management (GEM) nursing specialists in EDs across the province and asked the Regional Geriatric Programs of Ontario to assist in the development of their practice and evaluate their impact. The fundamental goal of GEM is to improve health care delivery to frail seniors presenting to EDs. This goal will be achieved by:

screening seniors to identify those at high risk; increasing the ED's capacity to care for frail seniors; enhancing the integration of emergency, inpatient and community services; providing practical guidelines for the deployment of GEM in diverse ED contexts, and evaluating the effectiveness of the GEM program.

The goals of the GEM program are:

1. Service Development - To support the development of GEM programs into viable and well-functioning models of care by ensuring that GEM nursing staff have the opportunity for ongoing professional development, peer support and networking.
2. Improve Patient Outcomes - To measure the impact of the GEM program in terms of both volume and relevant clinical outcomes.
3. Capacity Building - To develop and document innovative models guided by evidence, which can be used by other hospitals and EDs interested in developing GEM capacity and facilitate knowledge transfer among ED staff.

This paper addresses the current status of GEM programs in Ontario and the program development and evaluation framework used to guide the GEM program and encourage its growth across the province.

Methods: A retrospective and prospective cohort study has been submitted on behalf of the RGPs of Ontario, and approved by the Research Ethics Board. Subjects will be referred to the GEM nurse by the attending ED staff. A screening tool will be used to assist in the identification of appropriate referrals. Usual care will be delivered to the subjects as per the judgment of the clinicians involved, including the GEM nurse. The GEM nurse will do a geriatric assessment, make recommendations for care and link the patient to appropriate resources. All initial GEM encounters will be included as cases in the study, and controls will be matched for age, gender, and CTAS rating.

In addition, this paper reviews the Regional Geriatric Assessment Program of Ottawa's demonstration project on the effectiveness of screening in identified clients with complex geriatric issues. GEM assessment in Ottawa includes the use of the ISAR screening tool.

Results: Data gathered to date has demonstrated: the effectiveness of administrative and clinical screening in identifying clients with complex geriatric issues; that the majority of these clients who had no previous experience with SGS were able to be matched to needs with appropriate geriatric services; and that there were high levels of client satisfaction.

Paper 11C: Screening elderly in the ED: Use of interRAI instruments to aid in predicting patient outcomes

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Abstract not available.

POSTERS/ AFFICHES

Poster 1: Prise en charge pré-hospitalière des sujets âgés: étape descriptive préliminaire (Pre-hospital care of elderly patients: Preliminary descriptive stage)

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Introduction: L'actualité a mis en avant la question de la prise en charge des sujets très âgés. Notre but a été de décrire et de déterminer les éléments d'analyses pertinents (âges, paramètres et pathologies) pour des analyses ultérieures.

Matériel et méthode: Étude rétrospective sur un an (2000) de tous les primaires de notre SMUR pour sujet de plus 60 ans. Détermination des classes d'âges pertinentes par analyse de fréquence. Description du sexe, diagnostic, intubation par le SMUR, évolution immédiate et destination. Un score de gravité (Index de Gravité Simplifiée Ambulatoire modifié par exclusion de l'item âge, IGSAm) a été étudié dans les pathologies les plus pertinentes. Analyse statistiques par tests du khi2, exact de Fisher et t de Student.

Résultats: En 2000, 1532 patients ont été inclus ; après étude de la distribution, trois classes d'âge ont été sélectionnées: 60-74ans (38%, n=575), 75-89ans (50%, n=765) et ≥90ans (13%, n=192). Les pathologies les plus fréquentes sont celles cardiovasculaires (52%). La proportion de femme augmente avec l'âge (71% chez les ≥90ans versus 52% chez les 75-89ans et 38% chez les 60-74 ans, p=0,001). Les syndromes coronariens aigus (SCA) ont été moins fréquents chez les ≥90 ans que chez les 60-74 ans (14% versus 22%, p=0,02), a contrario des oedèmes aigus pulmonaires (OAP), 26% versus 17% p=0,001); pas de différence sur la neurologie et la traumatologie. L'intubation par le SMUR a été moins fréquemment réalisée chez les plus âgés (4% chez les ≥90 ans versus 6% chez les 75-89ans et 9% chez les 60-74ans, p=0,04), de même que la destination en service de réanimation (respectivement 33%, 43% et 48%, p=0,02). La proportion de décès sur place n'est pas différente dans les trois classes d'âge (limite, respectivement 18%, 12% et 14%, p=0,054). Dans les SCA et les OAP, un IGSAm élevé est lié au décès (p<0,01).

Conclusion: Les patients de plus de 90ans peuvent être comparés aux 60-74ans, abandonnant la classe 75-89 ans peu informative. Une étude des pathologies cardiovasculaires, SCA et OAP, est nécessaire. L'évolution intra-hospitalière doit aussi être analysée, ajustée sur la gravité évaluée par l'IGSAM.

Introduction: Current events have brought the question of the care of the elderly to the forefront. Our goal was to describe and determine the relevant analysis elements (ages, parameters, pathologies) for ulterior analyses.

Material and Method: Retrospective study over a year (2000) of all our SMUR interventions for subjects over 60 years of age. The determination of relevant age groups by frequency analysis. Description of gender, diagnosis, intubation by the SMUR, immediate course and destination. A severity score (Index de Gravité Simplifiée Ambulatoire modifié par exclusion de l'item âge, IGSAm/ Simplified Ambulatory Severity Index modified by exclusion of age) was studied in the most relevant pathologies. Statistical analysis by chi-square, Fisher's exact test, and Student's t.

Results: In 2000, 1532 patients were included, and after a study of the distribution, three age classes were selected: 60-74 years (38%, n=575), 75-89 years (50%, n=765) and ≥90 years (13%, n=192). The

most frequent pathologies were cardiovascular (52%). The proportion of women increases with age (71% in those ≥ 90 years versus 52% in those 75-89 years and 38% in those 60-74 years, $p=0.001$). Acute coronary syndromes (ACS) were less frequent in the ≥ 90 age group than in the 60-74 age group (14% vs. 22%, $p=0.02$), contrary to acute pulmonary edema (APE) (26% vs. 17%, $p=0.001$); no difference was seen in neurologic and trauma cases. Intubation by the SMUR was performed less frequently with the older subjects (4% in the ≥ 90 group vs. 6% in the 75-89 group and 9% in the 60-74 group, $p=0.04$), similar results were seen intensive care unit admission (respectively 33%, 43% and 48%, $p=0.02$). The proportion of death at the scene is not different in the three age groups (respectively 18%, 12% and 14%, $p=0.054$). In ACS and APE, an elevated IGSAm is linked to death ($p<0.01$).

Conclusion: The patients over 90 years of age can be compared to the 60-74 year old group, excluding the non-informative 74-89 group. A study of cardiovascular pathologies, ACS and APE is necessary. The in-hospital course should also be analyzed, adjusted by the severity score, measured by the IGSAm.

Poster 2: ISAR 1 validation at a Danish hospital

Author: Dora Fog, Elizabeth Rosted

Institution: Amager Hospital, Denmark

Background: Due to the increasing number of elderly people 65 years of age or older, who will demand health services in the future; it is necessary to have strategies that will be equal to this development. One strategy is to use a screening to identify the elderly patients of 65 or older in need of geriatric assessment and intervention at admission to an Emergency Department. Such an effective health promotion depends on a quick identification on admission of these patients. In Canada a short valid screening tool with six questions is used to identify elderly patients who have a special need for geriatric rehabilitation because they are at risk of hospitalisation, readmission and functional decline, after having been admitted to an Emergency Department. The screening tool is called ISAR Identification of Seniors At Risk. In Denmark there is no knowledge of the use of short standardized screening methods in Emergency Departments.

Objective: The objective of this study was: To analyse the sensitivity and specificity of the Danish version of ISAR compared to the clinical assessment by the geriatric team as it is performed at Amager Hospital.

Methods: The geriatric team's usual procedure was used as a Golden Standard for the evaluation of validity of ISAR for identification of geriatric patients in clinical practice. Amager Hospital is a 456-bed hospital covering a catchments area of 157.000 citizens. The study was carried out in the hospitals medical Emergency Department from August 25th to September 24th, 2003. 326 patients 65 years of age or older consecutively admitted at weekdays was included in the study. All together 86 patients were excluded and the remaining 242 patients included participated in both the ISAR screening administered by two research assistants and the usual clinical evaluation, carried out by the geriatric team.

Results: The Danish version of ISAR was not capable of identifying the same patients as the geriatric team and had 90% sensitivity and 27% specificity.

Conclusion: The Danish version of ISAR can not substitute the geriatric teams primary evaluation of which patients 65 of age or older in need of geriatric assessment at admission in the medical emergency department of Amager Hospital.

Poster 3: Severity of cognitive impairment and return to the ED in older persons

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Introduction: Previous research has shown that older persons are twice as likely to return to the ED when compared with younger persons. Severe cognitive impairment (CI) is associated with under-reporting of symptoms and lower health care use, while less severe CI may be associated with increased health care use in older persons. The objective of this study was to assess the association between degree of CI and return to the emergency department (RTED).

Methods: We conducted a prospective cohort study on patients ≥ 70 years of age who presented to the emergency department (ED) after a fall. We enrolled 81 subjects (mean age 79.7 years, 70% female, mean MMSE = 27.9) and contacted them at 30 and 60 days post-visit to assess for subsequent RTED. Participants were stratified by MMSE score into mild or no CI (28-30), moderate (24-27) and severe (<24) CI groups. Chi-square and Fisher's exact test were performed where appropriate.

Results: Six of the 81 patients had severe CI, 19 moderate CI, and 56 mild CI. No patients with severe CI RTED within 60 days post visit, while 7 moderate CI patients (37%) and 7 mild CI patients (12.5%) did RTED. Chi-square demonstrated a significant effect of RTED across the three CI groups ($\chi^2[2, N = 81] = 7.2338, p < .05$). Moderate CI patients were more likely to RTED than mild CI, ($\chi^2[1, N = 75] = 5.54, p < .05$), and there was a trend toward greater RTED of moderate than severe CI ($\chi^2[1, N = 25] = 3.07, p < .10$).

Conclusions: We found a higher RTED rate of elderly patients with moderate CI, with a trend towards lower RTED among patients with the most severe CI. If replicated in future studies, this finding implies that CI should be considered more than a dichotomous measure, and severity of CI should be accounted for when attempting to predict ED use as well as when planning interventions targeting ED use among older persons.

Poster 4: Validation of the Triage Risk Stratification Tool (TRST) scale to identify elders at risk for returning to the emergency department

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Background: The Triage Risk Stratification Tool (TRST) is a five-item scale derived by Meldon et al. in a sample of 650 subjects. The TRST may be simpler to use than other risk stratification tools, however, its ability to identify older patients at high risk after discharge from the emergency department (ED) has not been validated in any other setting.

Objective: To assess the predictive validity of the TRST for the composite endpoint of return to the Emergency Department (RTED), or hospitalization in an independent patient sample.

Methods: We conducted an observational cohort study in the EDs of three Canadian teaching hospitals with a combined average annual census of 25,247 patients over 64 years of age. A triage nurse, advanced practice geriatric nurse or social worker completed the TRST on patients

over 64 during a 4 week study period at each site. Patients who subsequently RTED or were admitted to hospital at 30 and 120 days were identified using hospital information systems. We conducted a logistic regression of the TRST variables, against the composite outcome.

Results: TRST forms were completed for 788 subjects. The mean age was 76.6 years (range 65 to 101), 58.5% were female and 38.5% spoke English as a second language. The mean TRST was 1.55, (range 0-5). Having a TRST ≥ 2 was associated with a higher risk of RTED/Admission (OR 1.63, 95% CI 1.13 to 2.36), although history of previous emergency visits alone was a stronger predictor (OR 2.32, 95% CI 1.70 to 3.15). Area under the curve (AUC) was only 0.58 using a cutoff of 2, with a sensitivity of 58%, specificity 53%. Meldon et al. reported AUC of 0.64, sensitivity 55%, specificity of 66%.

Conclusion: The TRST demonstrated similar, if sub-optimal, predictive ability in our independent patient sample. Future studies should compare the performance of the TRST to other risk stratification tools.

Poster 5: Evidence-based assessment of abdominal pain in older persons: A systematic review

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Background: Abdominal pain in older persons is often a diagnostic challenge for the Emergency Physician (EP). Abdominal complaints in older patients tend to be subtle, atypical with respect to cause, and more likely to be indicative of a serious underlying process than in younger patients.

Objectives: To evaluate current evidence to determine: 1) What is the predictive value of clinical information in diagnosing a serious underlying cause of acute abdominal pain in older (age ≥ 65) patients, 2) What is the predictive value of clinical information in determining which patients are safe for discharge.

Methods: We developed a comprehensive search strategy in collaboration with a Medical Librarian. The search was applied to: Medline 1950 to November 2004, Embase 1980 to 2005, CINAHL 1982 to December 2004, Cochrane DSR inception to 2004, DARE inception to 2004, CCTR inception to 2004, ACP Journal Club 1991 to October 2004, and HealthSTAR/Ovid Healthstar 1975 to November 2004. Two independent reviewers subjected the title and abstract (if necessary) of the initial 873 references to the following inclusion criteria: Human studies, Older population (age ≥ 65), Abdominal pain was the known or potential presenting complaint, ED work-up was performed and ED data included. We excluded articles that focused on surgical or medical intervention rather than diagnosis, and we excluded narrative reviews, case reports, and studies with $n < 10$. References were also obtained via hand searching reference lists from articles meeting the above criteria. The 2 independent reviewers accepted a total of 45 references for further analysis. Any references that were not agreed upon by both reviewers were evaluated by a third independent reviewer.

Results: Analysis of the 45 accepted studies was performed. Only 9/45 studies reported variables predicting serious outcome, with 6/9 studies reporting elevated WBC. Current literature provides little evidence to aid in predicting adverse outcomes in older persons with abdominal pain.

Poster 6: Do hospital characteristics affect ED return visits?

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Purpose: To describe between-hospital differences in the time to the first return emergency department (ED) visit among patients aged 66+ in the province of Quebec in 2001.

Methods: Data sources included 4 provincial databases, 3 that can be linked using the individual's health insurance number (physician billings, medication prescriptions, and hospital discharges), and one unlinked database of ED patient visits for stretcher patients. Information on geriatric services in the ED was available from a recent survey. The study population comprised individuals aged 66+ with an index ED visit (no ED visit during the previous 30 days) in 2001. Excluded were those resident in long-term care institutions or admitted to hospital at the index visit. A return visit was defined as a subsequent visit either to the same or another general adult hospital ED or to a non-hospital ED. Hospital-level characteristics included ED level of care (primary, secondary, tertiary), university affiliation, urban vs. rural location, ED size (number of stretchers), level of crowding (average ratio of stretcher patients to the number of stretchers), presence of an inpatient acute care geriatric unit (ACGU), ED staff specialized in the care of older people, and outpatient visits following an ED visit. Patient-level covariates included age, sex, socio-economic status, comorbidity, and health service utilization during 12 months before the index visit. A Cox model with 'frailty' was used to model time to first return visit. The 'frailty index', computed for each hospital, describes the relative hazard of first return visit for that hospital compared with the baseline (overall) hazard, adjusting for hospital-level and/or patient-level covariates.

Results: The median return visit rate within 2 weeks among the 81 hospitals was 14.3% (range 6.3-26.3%; IQR 13.0-16.5%). After adjustment for covariates, the following hospital-level variables were significantly associated ($p < 0.05$) with a longer time to first return ED visit in multivariate analyses: larger ED size, urban location outside Montreal, presence of an ACGU, presence of a social worker in the ED and more outpatient clinic visits within 30 days after an ED visit.

Conclusions: This population-based study indicates that certain geriatric services may reduce return ED visits.

Poster 7: Implementation of a two-step intervention for older emergency department patients (ISAR-2): Research into practice

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Abstract: This survey investigated the implementation, and barriers to implementation of tools and emergency department (ED) interventions for older patients. Two groups were surveyed: key informants from all EDs (n=111) in the province of Quebec, and a convenience sample of interested individuals outside Quebec. Questionnaires (administered either by telephone or self-completion) included: characteristics of the ED, characteristics of the respondent, use of tools, and method of implementation. The participation rate was 87.4% for the Quebec EDs and 47.1% (16/34) for the non-Quebec group. Additional data on the Quebec EDs were obtained from the Ministry of Health. The results of this study suggest that the main barriers to be targeted in the implementation of this type of intervention are: misunderstandings of the difference between screening and assessment tools, and the need for a pre-implementation trial, with adaptation of tools to the local context.

Poster 8: Which geriatric interventions reduce ED visits? A systematic review

Author: Jane McCusker^{a,b}, Igor Karp^b, Josée Verdon^b

Institution: ^a St. Mary's Hospital Center, Montreal, Quebec, Canada, ^b McGill University, Montreal, Quebec, Canada

Objective: To conduct a systematic review of the literature on the effects of interventions on emergency department (ED) visits by the elderly, to identify characteristics of interventions (location, intensity, duration) that reduce ED visit.

Methods: Relevant articles were identified through Medline and a search of reference lists and personal files. Inclusion criteria included: original research (written in English or French) on interventions conducted in non-institutionalized populations aged 60 or over, not restricted to a particular medical condition, in which ED visits were a study outcome. Data were abstracted and checked by 2 authors using a standard protocol. Because of heterogeneity in interventions, study design, methods, and outcome measures, the results were presented descriptively.

Results: 27 studies were identified, 25 of geriatric and management (GEM) interventions. Hospital-based studies included 4 in acute-care inpatient units, 9 in EDs. Community-based studies included 4 in home care programs, 10 in outpatient/primary care settings, and one in a community setting. The study design included 17 randomized controlled trials (RCTs), 3 trials with non-random allocation, 5 before-after studies, one quasi-experimental time-series study, and one cross-sectional study. Measures of ED visits were variable with regard to level of measurement (categorical vs. continuous) and reference time period (1-months). Hospital-based interventions had little overall effect on ED utilization, whereas many interventions conducted in outpatient/primary care or home care settings were successful in reducing ED utilization, particularly those sustained over longer periods and integrated with primary care.

Conclusions: Interventions that are not hospital based, more specifically those with one who have longer follow-up, appear to have the greatest impact on ED utilization of seniors. Limitations of this review include: the small number and heterogeneity of studies, and lack of

standardization of measures of characteristics of study population and ED utilization. Further efforts are needed to address the effects of geriatric interventions on ED visits, using improved methodologies and standardized measures.

Poster 9: Utilization of emergency care by older persons

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Objectives: Due to the increasing proportion of older people in the population, the number of geriatric patients using emergency care is growing. Emergency care for older persons is different in terms of both the type and quantity from the care provided to other age groups. Based on a review of the literature, this paper provides an overview of the use of emergency care by older people.

Results: Approximately 15% of patients in EDs (ED) are 65 years of age or older. This is due to the high prevalence of cardiovascular and pulmonary diseases, and injuries due to falls. The time spent on the care and treatment of geriatric patients in an ED is 19% to 58% longer than of younger patients. The length of time during which older people stay in an ED is determined mainly by history-taking, waiting times for laboratory results and radiological investigations, more difficult diagnoses, waiting times for transfer to wards and waiting times for transport home. Twenty to 55% of older people who are presenting in an ED have arrived by ambulance. This percentage is 2 to 4.4 times higher than in the other age categories. Patients aged 65 or older account for 35.6% and 64.5% of urgent and non-urgent ambulance transport, respectively. Moreover, the use of ambulance transport rises with increasing age. Of the geriatric patients in an ED, 32% to 68% are admitted to hospital. This is 2 to 3 times as many as in the case of adults aged under 65.

Interpretation of results: Elderly people are significantly more frequently found in a higher urgency class than adults aged under 65. This also means that elderly people who are admitted via the ED are more frequently hospitalised in an Intensive Care Unit than patients aged under 65. Literature indicates that older persons have a higher utilization of ED, length of stay in the ED, use of ambulance transport and hospitalisations from ED than patients from younger age groups. Hence, caring for geriatric patients has a major impact on the workload and staffing of emergency care facilities.

Poster 10: Ontario's Geriatric Emergency Management Program: A novel interdisciplinary model of emergency care for seniors

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Objectives: 1) Describe an interdisciplinary, collaborative approach to Geriatric Emergency Management in the Emergency Department of an Inner-City Toronto hospital 2) Discuss issues related to geriatric emergencies in the ED including high risk client identification; service integration; and interdisciplinary collaboration Geriatric Emergency Management (GEM) provides a new opportunity for a collaborative, interdisciplinary approach to geriatric emergencies within the Emergency Department. The Ministry of Health and Long Term Care (MOH LTC) in Ontario, Canada has recognized the need to improve health care delivery to seniors presenting to Emergency Departments and has approved eight new clinical nurse

specialist (CNS) positions under the Regional Geriatric Programs (RGPs) of Ontario. These Geriatric Emergency Management (GEM) nurses were hired in the Spring of 2004 and are at the forefront of developing the region's capacity to provide geriatric assessment and the coordination of hospital and community health care services for frail seniors identified in hospital emergency departments. This paper will provide an overview of the conceptual framework for this quality improvement initiative and will focus on an interdisciplinary approach to GEM services in a large inner city teaching hospital in Toronto, ON. Using a case based approach; the authors will discuss the challenges of responding to patients who present to the ED with Behavioural and Psychological Symptoms of Dementia (BPSD) as well as other geriatric/psychiatric conditions. The case studies will illustrate the importance of high risk identification; geriatric focused assessments; service integration; interdisciplinary collaboration and an overall systems approach to elder care in the ED. Within the fast paced environment of the ED, these patients present a particular challenge and require an interdisciplinary approach to care which combines the expertise of geriatric medicine, geriatric psychiatry, the crisis intervention team, the ED staff, and geriatric emergency management services in order to maximize optimal patient outcomes. Based on our experience to date, gaps and barriers in the health care system will be discussed as they impact on service planning for these vulnerable, at risk seniors.

Conclusions: Lessons learned to date will be highlighted as part of the qualitative data supporting the formative evaluation of this two year pilot.

Poster 11: Clairance de la créatinine chez les personnes âgées admises aux urgences (Creatinine clearance in elderly people admitted to the emergency room)

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Introduction: L'incidence des accidents médicamenteux augmente avec l'âge. Dans 20% des cas environ, ils entraînent une hospitalisation. Lors de la prescription, la prise en compte de modifications physiologiques liées au vieillissement, peut prévenir ces accidents. Cette étude a pour objectif d'analyser l'ordonnance des patients âgés, admis au service d'urgence, en fonction de la clairance de la créatinine.

Patients et méthodes: Parmi 968 patients consécutifs âgés de plus de 70 ans, 419 ayant eu un dosage de créatinine plasmatique à l'admission ont été retenus pour cette étude. La clairance de la créatinine a été calculée à l'aide de la formule de Cockcroft. Deux groupes de patients ont été constitués : groupe I avec clairance < 30 ml/min et groupe II avec clairance > 30 ml/min.

Résultats : Parmi 419 patients, 84 présentaient une clairance de la créatinine < 30 ml/min (groupe I) et 335 une clairance > 30 ml/min (groupe II). L'âge moyen était significativement plus élevé chez les patients du groupe I vs ceux du groupe II (87 +/- 6 vs 81 +/- 6, $p < 0,001$), il en était de même pour le poids moyen (57 +/- 10 vs 69 +/- 13, $p < 0,001$), et la créatinine plasmatique moyenne (113 +/- 23 micromol/l vs 83 +/- 19, $p < 0,001$). Quarante deux traitements présentant une précaution d'emploi vis à vis de la fonction rénale ont été répertoriés chez 69 (82%) patients du groupe I et 331 chez les 174 (52%) patients du groupe II. Chez les patients du groupe I, 47 traitements sur 82 (57%) étaient contre-indiqués ou présentaient une posologie non appropriée en regard de la clairance de la créatinine. Indépendamment des caractéristiques pharmacocinétiques, le nombre moyen de molécules prises par patient était de 5

+/- 2 dans le groupe I et 6 +/- 2 dans le groupe II.

Conclusion: Une attention toute particulière doit être portée à la fonction rénale des personnes âgées lors de la rédaction de l'ordonnance et ce d'autant que le poids est faible.

Introduction: *The incidence of medication-related accidents increases with age. In approximately 20% of cases, they entail hospitalization. When prescribing, taking into account physiological changes linked to aging can help prevent these accidents. The goal of this study is to analyze prescriptions to elderly patients admitted to EDs, in relation to their creatinine clearance.*

Patients and methods: *Among 968 consecutive patients older than 70, 419 with a dosage of the plasma creatinine at admission were used for this study. Creatinine clearance was calculated using the Cockcroft formula. Two groups of patients were formed: group I with a clearance of <30ml/min and group II with a clearance of >30ml/min.*

Results: *Among 419 patients, 84 had a creatinine clearance of <30ml/min (group I) and 335 a clearance of >30ml/min (group II). The average age was significantly higher in patients of group I vs. those of group II (87 +/- 6 vs. 81 +/- 6, $p < 0.001$); similar results were seen for the average weight (57 +/- 10 vs. 69 +/- 13, $p < 0.001$), and the average plasma creatinine (113 +/- 23 macromol/l vs. 83 +/- 19, $p < 0.001$). 82 treatments with a warning on use related to renal function were found in 69 (82%) patients from group I and 331 from the 174 (52%) patients of group II. In group I patients, 47 treatments out of 82 (57%) were contraindicated or represented a non-appropriate dose given the creatinine clearance. Independently of the pharmacokinetic properties, the average number of molecules taken per patient was 5 +/- 2 in group I and 6 +/- 2 in group II.*

Conclusion: *Particular attention should be paid to the renal function of elderly people during the writing of prescriptions, particularly in the underweight.*

APPENDICES/ANNEXES

APPENDIX A. REFERENCES

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APPENDIX B. THEME CHART

PRESENTATION S AND POSTERS	Descriptive studies of older ED populations	Discharge planning	Geriatric syndromes				Innovative programs	Environment	Implementation	Medications	Multidisciplinary or integrated care	Country *	Pre-ED interventions	Research	Return to the ED	Screening/ assessment tools	Specific pathologies
			General	Cognitive impairment	Delirium	Falls											
1B	X											F	X	X			
1C	X											F	X	X			X
1F	X		X									F		X			
2A																X	
2B						X						NE				X	
2C					X											X	
3A		X					X					CA		X	X		
3B											X						
3C	X						X					CA		X		X	
4A							X					US					
5A								X									
6A							X					US	X	X		X	
6B		X					X					CA		X			
6C		X					X					US		X			
7A		X					X		X		X	AU		X	X	X	
7B									X			CA				X	
7C							X		X			CA				X	
7D									X			DK		X		X	
8A							X					AU					
9A														X			
10A										X							
10B										X							
10C										X		CA			X		
11A							X					CA					
11B							X		X			CA		X		X	
P1	X											F		X			
P2												DK		X		X	
P3				X	X	X	X					CA			X	X	
P4												CA		X	X	X	
P5														X		X	X
P6											X	CA		X	X		
P7									X			CA		X		X	
P8		X					X				X			X	X		
P9	X																
P10							X				X	CA					
P11										X		F		X			

* CA Canada, DK Denmark, F France, NE Netherlands, US United States

APPENDIX C.

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