



# **United Fall Prevention Program - From Evidence to Practice**

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**Dr. LEUNG Man Fuk  
Chairman**

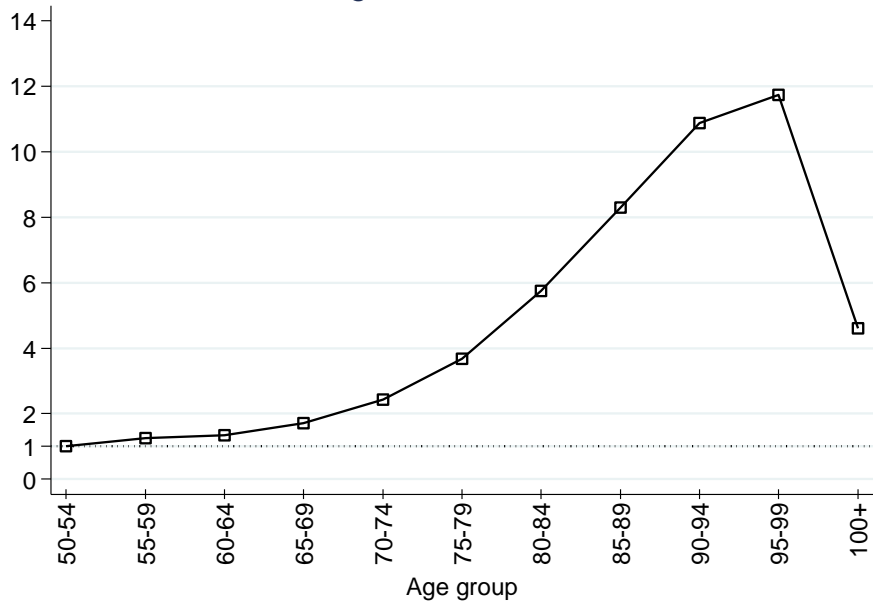
**Task Force on Hospital Fall Prevention  
United Christian Hospital**

**(Members: William Poon, TK Yim, SK Tang, SK Chan, OK Fung, SY Lau, SY Lai, CY Kong, HL Tsang, Peggy Hui, Athina Poon, Eric Wong, PT Yeung)**

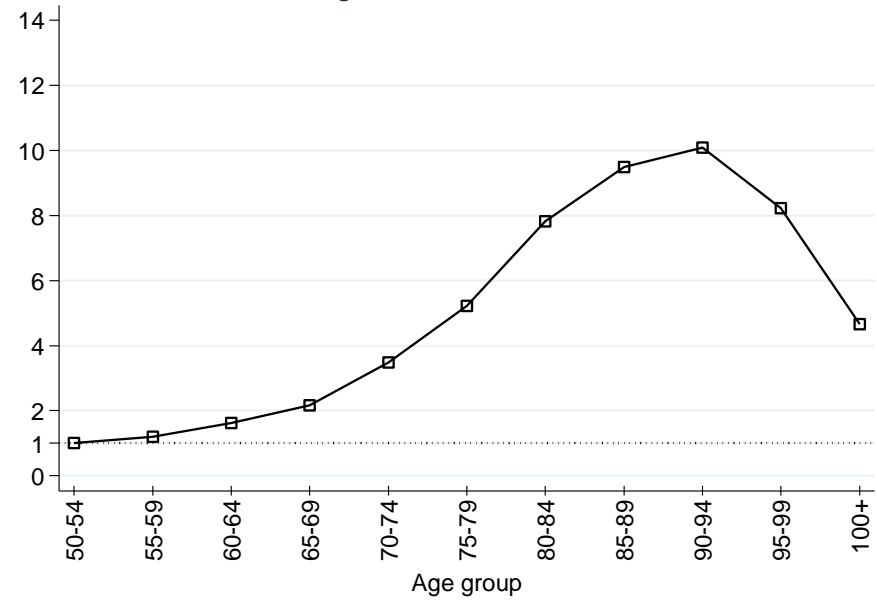
**Hospital Authority Convention  
8 May 2014**

# Ageing population and fall prevalence

Age effect - Males

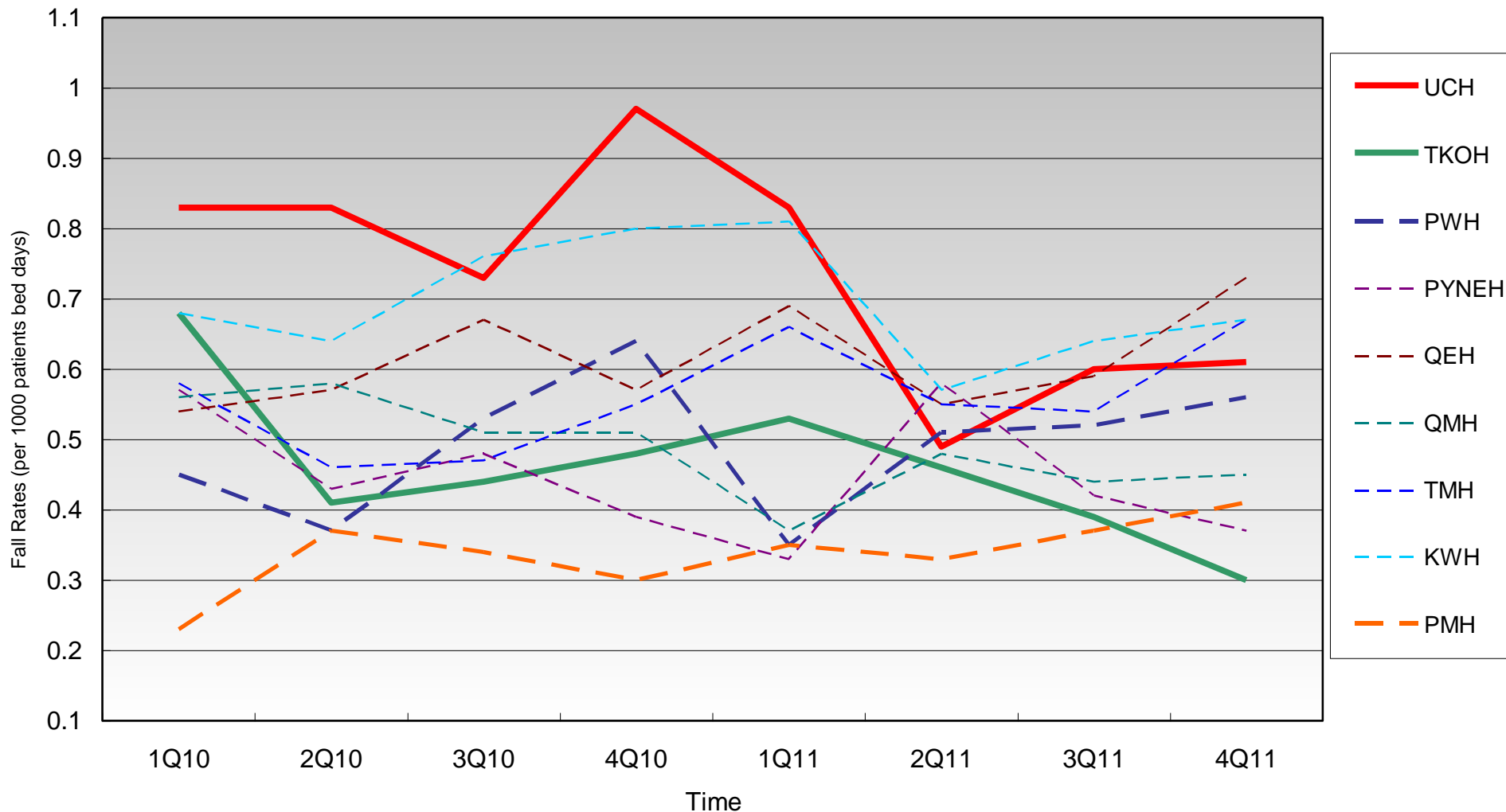


Age effect - Females



# NQI : Patient Fall Rate 1Q10 – 4Q11 (HA Hospitals – Group 1)

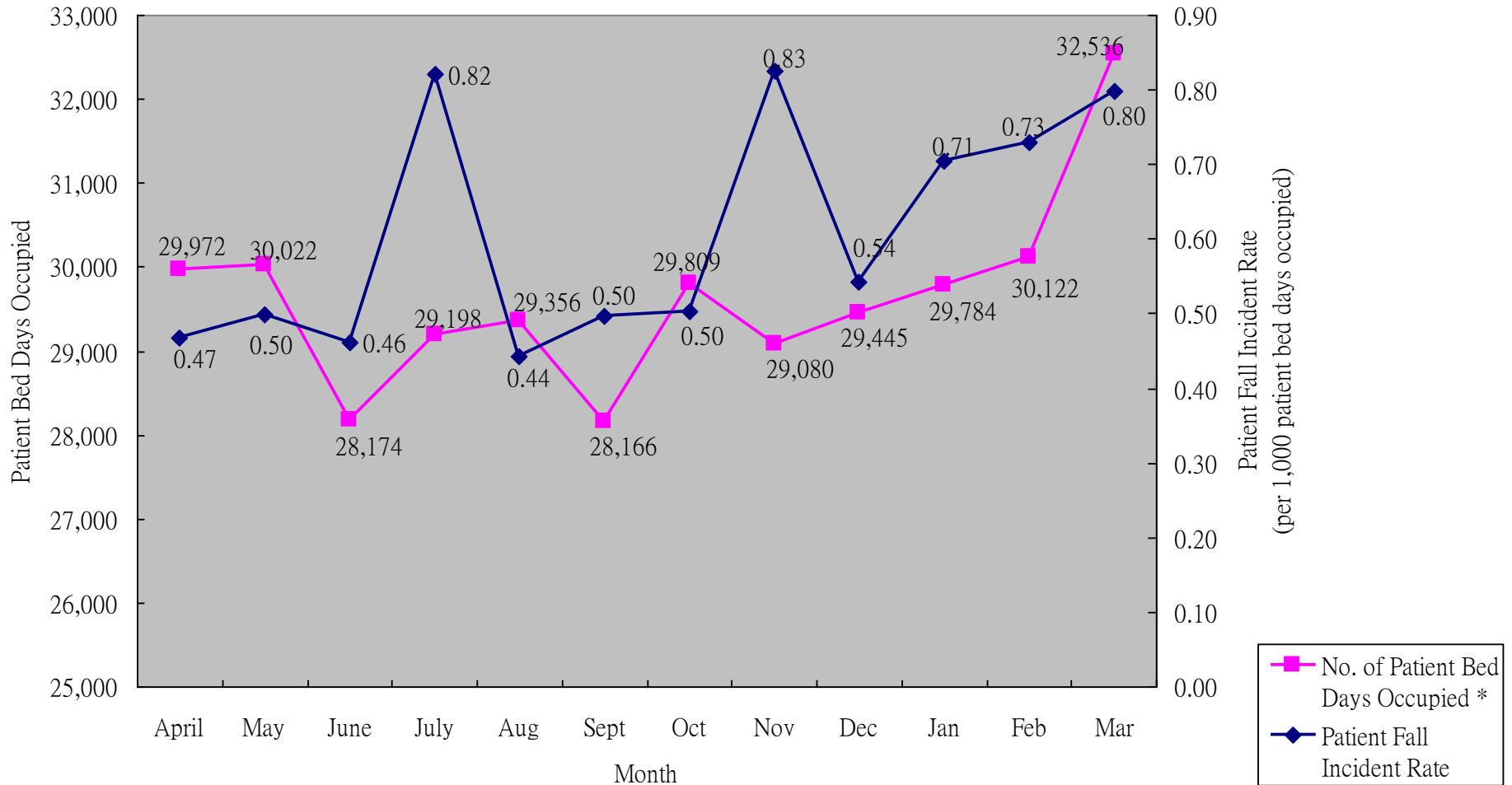
Fall Rates in HA Hospitals (1Q10-4Q11)



Remarks - Group 1 benchmark as at 4Q11

# Patient Fall situation in UCH

## Patient Fall Incident 2Q 2011 - 1Q 2012



# Is Falls in Hospital different from the community

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## Difference in fall rates

Community – 5 per 1000 person days

Hospital – could up to 20 per 1000 patient-days

## Hospitalized patients

Physically unwell acutely

In unfamiliar environment and routines

Loss of control in performance of personal activities

Physical dependency on staff




# Hospital Falls Prevention

## What are the current evidence?

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A recent randomized trial of a falls multi-media patient education program combined with trained health professional follow-up using a theoretical driven education approach successfully reduced falls outcomes by approximately 50% amongst cognitive intact older hospital patients, but not for those with cognitive impairment

(Haines, Hill (2011) Patient education to prevent falls among older hospital inpatients: a randomized controlled trial. Archives of Internal Medicine, 171 (6), 516-24)



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# **Translation of falls prevention knowledge into action in hospitals: What should be translated and how should it be done?**

Haines and Waldron  
Journal of Safety Research 42 (2011)  
431-442



# Identify falls as a problem and select knowledge

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Forming a management and engagement committee

Optimizing management and engagement committee function

Examining current practice and optimizing interventions





# Adapting knowledge to the local context

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Understanding your local setting  
Examining resources – current and potential  
Linking assessment to intervention



# Assessing barriers, implementing and monitoring

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Develop an implementation strategy

Ensure adequate resourcing

Develop a more concrete implementation plan



# Evaluating Outcomes

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Evaluation plan should be realistic  
Consider broader challenges with  
evaluation  
Creating an evaluation timeframe

# HA Geriatrics Subcommittee ACE Guideline on Fall

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100% of acute admitted elderly patients over 65 years old to be **screened**

Simple and safe **screening test** – Morse (Sensitivity 78%, Specificity 83%) or

STRATIFY (Sensitivity 93%, Specificity 88%)

**Environmental** component – reducing physical obstacles, supplemental lighting, grab bars in bathrooms, lowering bedrails and bed height

**Medication** Review and Modification

Improving physical **mobility**

Continence promotion and **toileting** programs



# Some milestones in UCH Fall Prevention

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One study on Hospital Fall in 1993-4

Another study on Morse Fall Scale in 2008

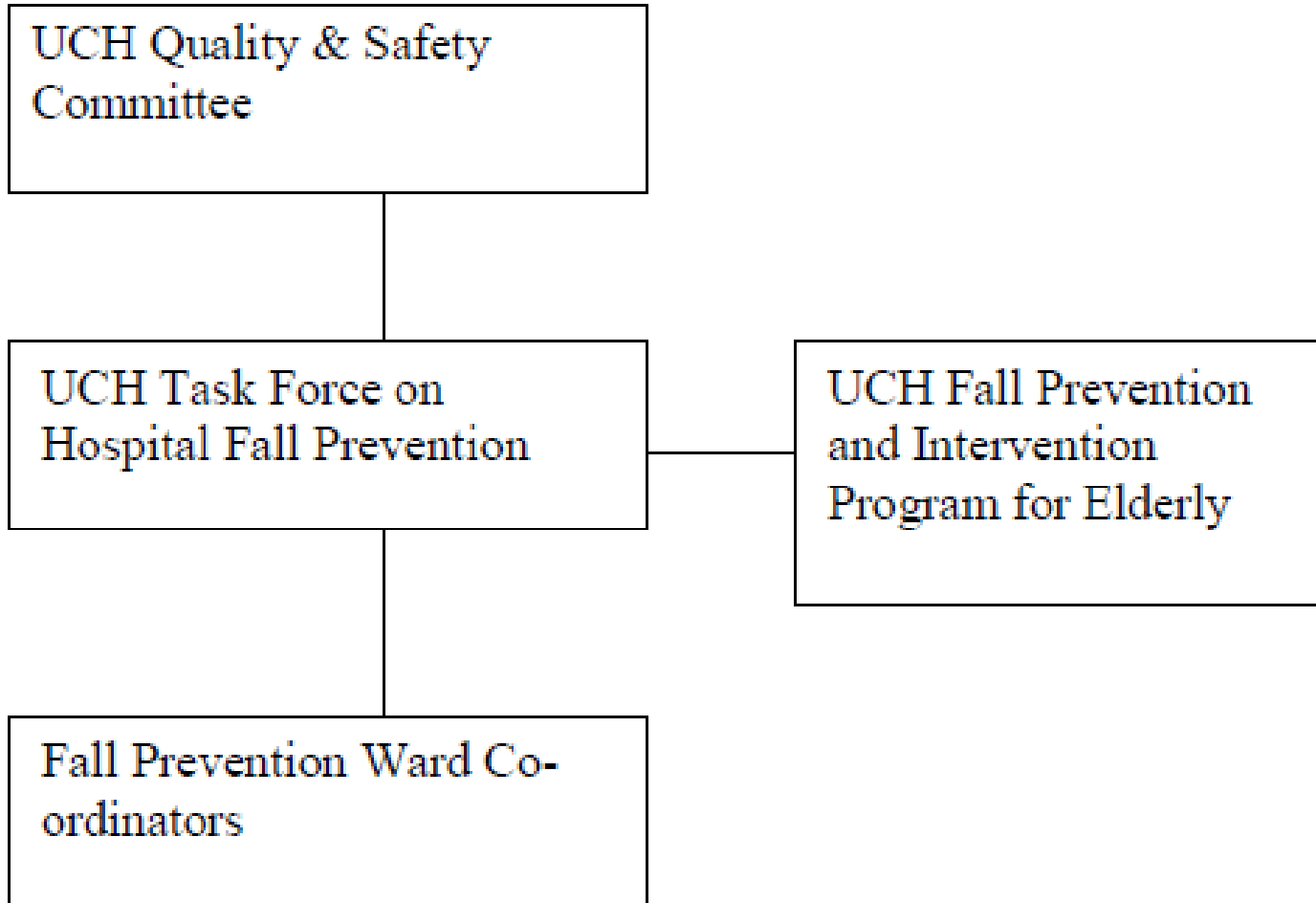
Setting up of FAST in 2009

Setting up of UCH Taskforce on Hospital Fall Prevention in August 2011

Fall Prevention Ward Co-ordinators 2012

# UCH Fall Prevention Structure

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# Fall Assessment & Intervention Program 2009

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- Multi-disciplinary Fall Assessment Service Team (FAST) – Geriatrician, nurses (Geriatrics, CNS), physiotherapists, occupational therapists.
- Referral: age  $\geq 60$  with fall related admission / fall during hospitalization or recent fall within 2 weeks (referral is accepted for age  $< 60$  if required).
- Review reported patient fall incidents (AIRS reported falls)
- Discharged patients will be referred to CNS for assessment.
- Bimonthly meeting to review the risk factors associated with fall in hospital for identification of prevention and intervention measures.
- For High Risk Patients will be followed up in Fall Clinic, Geriatric Day Hospital and Allied Health Fall Clinic

# UCH Task Force on Hospital Fall Prevention (August 2011)

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## **Composition** – Hospital Wide Representation

Geriatrician

Deputy of General Manager (Nursing)

Department Operations Managers of all clinical departments,

Geriatric nurse

Physiotherapist

Occupational therapist

Nurse Consultant in Continence Care

Facility Management

## **Terms of Reference:**

- To review on patient fall incidents and identify the preventive measures in hospital
- To recommend the strategies for fall prevention in hospital
- To monitor the effectiveness of preventive measures





# Fall Prevention Ward Co-ordinators June 2012

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- Coordinate and evaluate the fall prevention and management program in the ward.
- Assist in monitoring the fall incident trend and identify improvement measures in the ward.
- Orientate new staff on fall prevention and management program.
- Coordinate patient / staff education and share good practices and improvement measures on fall prevention in the ward.



# Plan of Action

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- Set up an action plan for fall prevention strategy
- Toileting issues to be addressed especially for high risk patient
- Risk identification
- Staff education
- Patient education
- Provision of necessary aids and facilities
- Patient supervision for high risk groups
- Environmental modification and notices
  - Handrails, alarm bells, etc.



# Risk Identification

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- Nursing Assessment Form integrated the identified risk factors of high risk fallers from the previous AIRS study – impaired mental state, on sedatives, past history of falls, any cause of lower limb weakness on admission, immediately post-operation, postural hypotension and medications causing dizziness and hypotension
- Trigger off a proper care plan during hospitalization



# Environmental Assessment

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- Environmental assessment and need assessment for fall prevention was conducted on 14 December 2011:
  - tripping hazards
  - lack of handrails / grab bars
  - slippery surfaces
  - awkward reaches / storage
  - inadequate lighting
  - unstable furniture



# Reduction of Environmental Risk

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- Handrails and grasp bars in all toilets and bathrooms
- Redesign toilet call bells
- Safety measures in public areas of toilet especially around basin

# Patient Toilet (water closet cubicle)

## Improvement Measures & Progress

Improvement on lighting condition in toilets and bathrooms.  
Mock-up established



# Patient Toilet (water closet cubicle)

## Improvement Measures & Progress

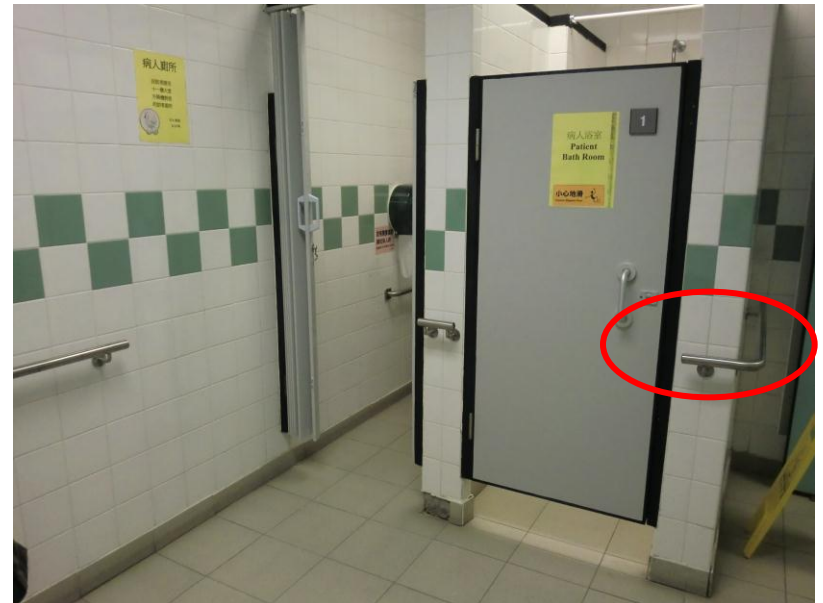
Relocated & modified safety alarm pull cord system ( suitably positioned and reachable from floor level and at seated position)



# Patient Toilet

## Improvement Measures & Progress

Install **appropriate** height handrail for support around sink area





# Patient Shower Room

## Improvement Measures & Progress

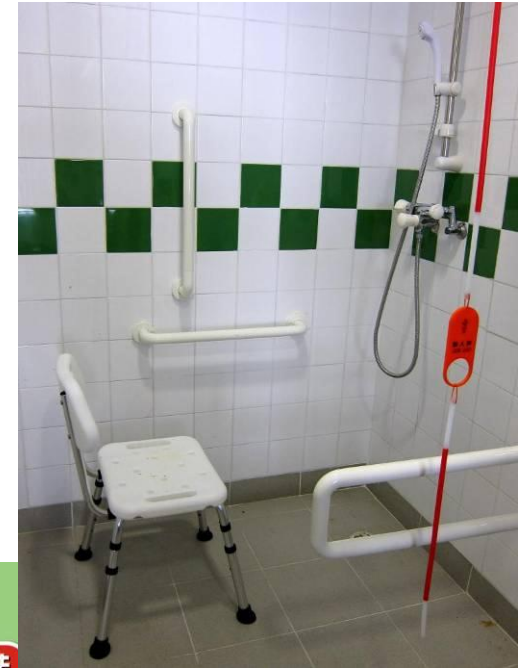
Relocated & Installed **safety alarm** (suitably positioned and reachable from floor level and at seated position)



# Patient Shower Room

## Improvement Measures & Progress

- ◆ Stable and proper shower chair



**慎防跌倒**

正確擺放沐浴椅位置

正確使用沐浴椅方法



使用後請將沐浴椅放回原位

# Patient Shower Room

## Improvement Measures & Progress

- ◆ Install **hooks** for hanging clothes



# Patient Shower Room

## Improvement Measures & Progress

- ◆ Install storage unit inside shower room





# Staff Education

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- Staff training for fall prevention strategy
- Fall management programme in each ward
- Education on toileting needs and regular toileting assistance to high fall risk patients

# Staff Forum on Patient Fall Prevention

Date: 24 July 2012 (Tuesday)  
Time: 3:00 pm – 5:00 pm  
Venue: Lecture Theatre, Block P, UCH

## Programme Rundown

Topic	Speaker
1. Welcoming Remarks	Dr. CHUI Tak Yi, KEC SD(Q&S)
2. Introduction on Fall Prevention & Intervention in Hospitals – International Development & Protocols Recommended in Hong Kong	Dr. LEUNG Man Fuk, KEC CSC(Med) / UCH Consultant(M&G)
3. Hospital Fall Prevention Program in UCH	Mr. William POON, SNO(S&P)
4. Environmental Assessment & Improvement on Hospital Facilities	Ms. Athina POON, OT1 Mr. IP Man Ching, KEC M(FM)
5. Inter-disciplinary Fall Assessment Service – Review of Incidents of Patient Falls in Hospital	Dr. YIM Ting Kwan, AC(M&G) Ms. FUNG Oi Kuen, NO(M&G)
6. Care of Toileting Need of High Fall Risk Patients	Ms. CHAN Sau Kuen, NC(Continence)
7. Application of Fall Alarm Pads in Prevention of Patient Falls	Mr. TANG Siu Keung, DOM(M&G)
8. Selection of Walking Aids in Prevention of Patient Falls	Ms. Mary NG, PT1
9. Q & A	

CNE: 1.5 points



UCH Task Force on Hospital Patient Fall Prevention

**Presentation materials are uploaded to UCH Homepage – You See Channel:**

[http://uchit.home/photoAlbum/albums/預防病人跌倒員工論壇%20\(Staff%20Forum%20on%20Patient%20Fall%20Prevention\)%2024-7-2012/index.html](http://uchit.home/photoAlbum/albums/預防病人跌倒員工論壇%20(Staff%20Forum%20on%20Patient%20Fall%20Prevention)%2024-7-2012/index.html)

[壇%20\(Staff%20Forum%20on%20Patient%20Fall%20Prevention\)%2024-7-2012/index.html](http://uchit.home/photoAlbum/albums/預防病人跌倒員工論壇%20(Staff%20Forum%20on%20Patient%20Fall%20Prevention)%2024-7-2012/index.html)






# Patient Education

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- Education to high risk patients on their risk of falls especially on toilet needs
- Education to relatives on fall prevention
- Posters in all toilets to encourage to seek help during toileting and importance of fall prevention

# Hospital Poster & Video





## 慎防跌倒

FALL PREVENTION

需協助時  
請按鈴求助

To avoid fall,  
press the nurse call  
whenever you need  
assistance

**跌倒** 可致痛楚、  
頭部創傷、  
骨折、  
甚至死亡！

Fall can cause pain, head  
injury, fracture or even death!

## 慎防跌倒

FALL PREVENTION



叫人鐘  
CALL BELL

如需協助  
請拉叫人鐘

Please pull the call bell if you need assistance

UCH Task Force on Hospital Fall Prevention (3)

AV&ADU\_N-585\_12.05r\_call bell

## 小心跌倒



BEWARE OF FALL



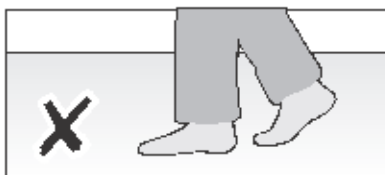
# Hospital Poster – Shower Chair



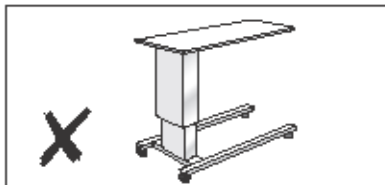
# Patient Pamphlet

## 你不應做的事：

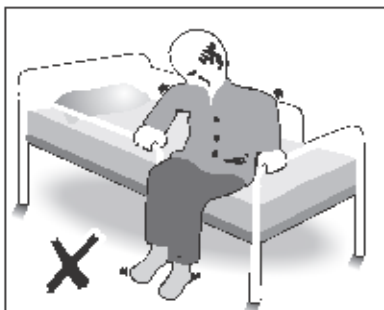
- 只穿襪走路



- 依扶床上桌、鹽水架、傢俱等步行



- 跨越床欄或獨自由床尾下床



## 各位親屬，為預防長者跌倒，您必須做的事：

- 向醫護人員提供長者跌倒歷史、食藥情況、和飲酒歷史等
- 帶備長者慣用的助行器、防滑鞋、助聽器、眼鏡等
- 重覆提醒長者聽從醫療人員指導作活動和步行
- 若有需要可轉介職業治療師，為長者出院前預先改善家居環境，減低跌倒風險  
(可參閱醫院管理局或衛生署有關單張)

### 注意：

有跌倒風險的長者，如因病情影響，未能意識有跌倒風險，醫護人員在屢勸無效的情況下，會對長者作適度的約束，以防跌倒意外發生



資料由本院內科及老人科部提供  
視聽及美術設計組製作



## 留院長者 預防跌倒須知



九龍彌敦道和街一百三十號

二〇一四年二月

CAT. NO. : 277



# Ward Facilities

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- Proper use and availability of bed pan, urinals and commodes in wards especially for patients with borderline mobility
- Pilot the application of Fall Alarm Pad



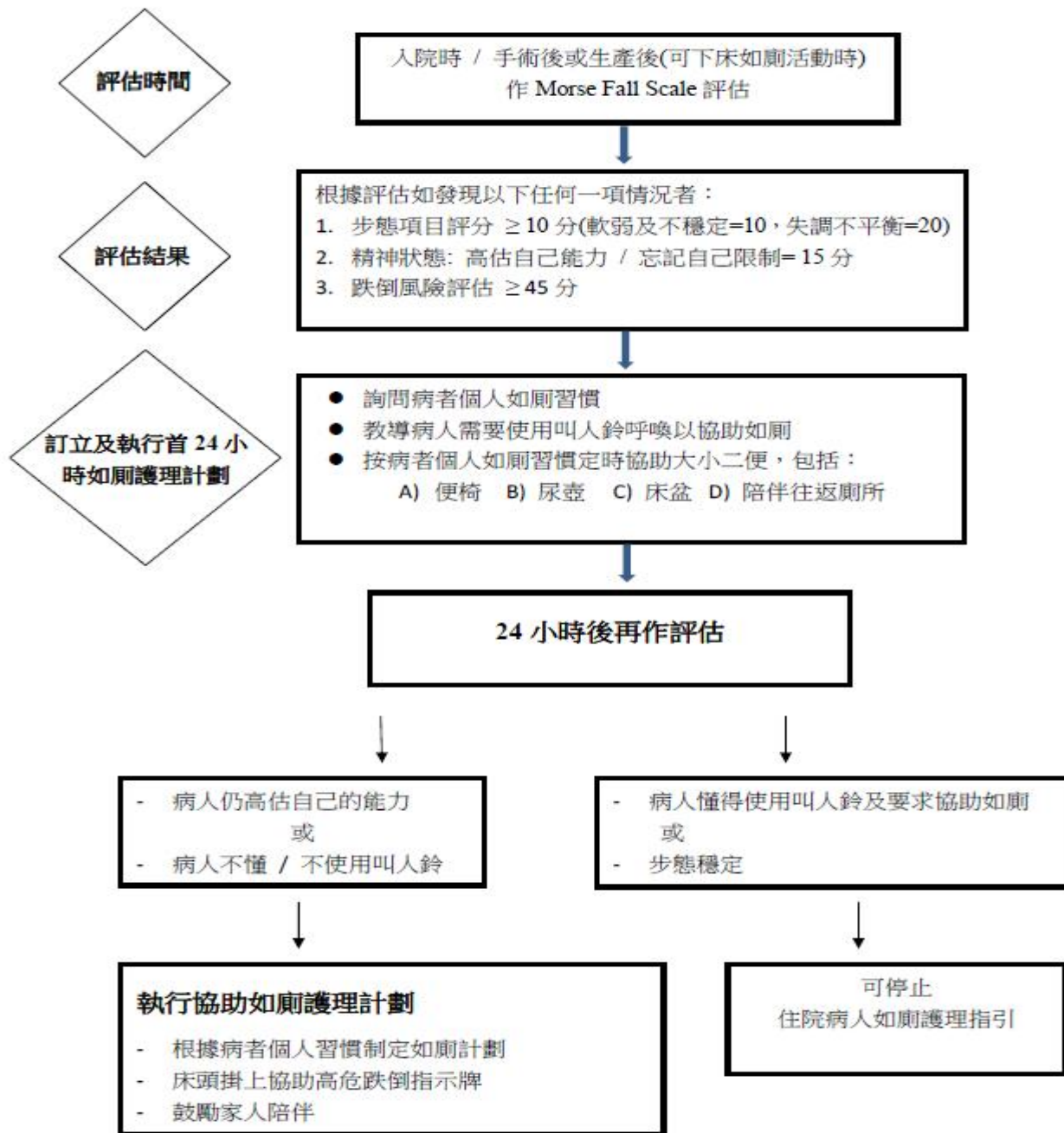
# Toileting Assessment and Care Plan for high risk patients

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High Risk Patients identified in Morse Fall Scale (score more than 45, gait impairment, unaware of self limitation)

Provide monitoring and supervision of toileting within the first 24 hours then assess the ability to adhere to toileting need of the patient

# 住院病人如廁防跌護理指引





# Rehabilitation and Training

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- Early Referral to **Fall Assessment Service Team** (FAST) for patients with recent history of falls at home or admitted for fall related reasons for detail assessment, intervention and rehabilitation



基督教聯合醫院  
UNITED CHRISTIAN HOSPITAL



醫院管理局  
HOSPITAL  
AUTHORITY

## UCH Fall Prevention & Intervention Program for Elderly (UCH.FPI Program)

Non- ID Patient Gum Label

### Inter-Disciplinary Fall Assessment Form

<b>Active Diagnosis:</b>		<input type="checkbox"/> Please call FAST Team again <i>(When general condition improves)</i>		<b>Name of Assessor:</b>		
				<b>Assessment Date :</b> <i>(Doctor, Nurse, PT, OT)</i>		
<b>Source of Patient</b>	<input type="checkbox"/> AED <input type="checkbox"/> Fall in Hospital <input type="checkbox"/> Medicine & Geriatrics <input type="checkbox"/> Orthopaedics <input type="checkbox"/> Surgical <input type="checkbox"/> Others					
<b>Fall History</b>	<b>Time &amp; Location</b>	Approximate at : ____ am / pm <input type="checkbox"/> Toilet/ Bathroom <input type="checkbox"/> Bedside <input type="checkbox"/> Living room <input type="checkbox"/> Kitchen <input type="checkbox"/> Outside Home				
	<b>Activity during fall</b>	<input type="checkbox"/> Micturition <input type="checkbox"/> Lying / Sitting to Standing <input type="checkbox"/> Prolonged Standing <input type="checkbox"/> Walking <input type="checkbox"/> Sudden Head Turning <input type="checkbox"/> Others:				
	<b>Fall Mechanism</b>	<input type="checkbox"/> Dizziness <input type="checkbox"/> Collapsed or LOC <input type="checkbox"/> Fall from height (bed, chair etc)				
		<input type="checkbox"/> Tripped <input type="checkbox"/> Slipped <input type="checkbox"/> LL Weakness <input type="checkbox"/> Lost Balance <input type="checkbox"/> Inflicted by Others				
	<b>Injury Sustained</b>	<input type="checkbox"/> No <input type="checkbox"/> Minor Injury <input type="checkbox"/> Head Injury <input type="checkbox"/> Colles' Fracture <input type="checkbox"/> Hip Fracture <input type="checkbox"/> Others:				
<b>Past History of Fall</b>	<input type="checkbox"/> No <input type="checkbox"/> Yes (Number of falls in past 6 months = ) <input type="checkbox"/> Fall Pattern (If any):					
<b>Risk Areas</b>	<b>Medical History</b>	<b>Fall - Related Medications</b>	<b>Mobility</b>	<b>Cognitive/ Sensory / Functional</b>		
	<input type="checkbox"/> Old CVA with residual neurological impairment <input type="checkbox"/> Postural related dizziness or known postural hypotension <input type="checkbox"/> Parkinsonism <input type="checkbox"/> Dementia <input type="checkbox"/> DM neuropathy <input type="checkbox"/> Lower limb arthritis	<input type="checkbox"/> Psychotropic drugs <input type="checkbox"/> Anxiolytic drugs (e.g. Benzodiazepine, Hypnotics) <input type="checkbox"/> Alpha Blocker <input type="checkbox"/> Diuretic <input type="checkbox"/> Digoxin or Antiarrhythmics <input type="checkbox"/> Number of regular drugs > 4	<input type="checkbox"/> Lower limb weakness <input type="checkbox"/> Balance deficit <input type="checkbox"/> Gait deficit <input type="checkbox"/> Poor sitting balance <input type="checkbox"/> Improper use of walking aid <input type="checkbox"/> Inappropriate shoes <b>Timed Up &amp; Go Test</b> <input type="checkbox"/> ≥ 14 sec <input type="checkbox"/> Not Applicable	<b>Premorbid Cognitive Status:</b> <input type="checkbox"/> Confusion <input type="checkbox"/> Disorientation <b>Sensory Loss:</b> <input type="checkbox"/> Vision <input type="checkbox"/> Hearing <b>Premorbid ADL Function:</b> <input type="checkbox"/> ADL dependence <input type="checkbox"/> Improper use of assistive devices <i>(such as bathing &amp; toileting devices, handrails, commode)</i> <input type="checkbox"/> Over - Confident/ Poor Insight		
<b>Fall Risk Level</b>	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High					
<b>Identified Problems &amp; Needs</b>	<input type="checkbox"/> Manage new medical problem/s <input type="checkbox"/> Education and Information		<input type="checkbox"/> Medication Review / Withdrawal <input type="checkbox"/> Mobility Training		<input type="checkbox"/> Functional /Cognitive/ Sensory Loss Management <input type="checkbox"/> No	
<b>Actions</b>	<input type="checkbox"/> Discussed with Case MO <input type="checkbox"/> Refer for Discharge Support <input type="checkbox"/> IDSP <input type="checkbox"/> Others:		<input type="checkbox"/> Referred to Physiotherapist <input type="checkbox"/> Referred to Occupational Therapist		<input type="checkbox"/> NA	
<b>Suggestions for Follow Up</b>	<input type="checkbox"/> In Patient Rehabilitation (2D/ KH/ HHH) <input type="checkbox"/> GDH Rehabilitation <input type="checkbox"/> Geriatric Falls Prevention Clinic 預防跌倒門診 (Doctor & Nurse FU) <input type="checkbox"/> Allied Health Fall Prevention Clinic <input type="checkbox"/> CNS <input type="checkbox"/> NA					

Remarks: Please  indicate 'Yes'      Team Leader (Geriatrician) fax number: 1-3513-5940      IDSP= Integrated Discharge Support Program



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# **Review of Inpatient Falls**



Please stick patient label with name,  
age, sex, HN, and specialty

(No need to provide ID Number)

**Data Set for Fall Risk Assessment of  
Confirmed Inpatient Fall Reported via AIRS**

AIRS Case No: \_\_\_\_\_ Date of fall: \_\_\_\_\_

The MFS before index fall: \_\_\_\_\_ Severity Index of Incident: \_\_\_\_\_

**1. What risk factors for falls and injury were present?**

- a) Past history of fall  Yes  No
- b) Lower limbs weakness  Yes  No
- c) Gait deficit  Yes  No
- d) Balance impairment  Yes  No
- e) Confusion  Yes  No
- f) Visual impairment  Yes  No
- g) Medications  Yes  No

Other risk factors, if any:

<p><b>2. What was the <u>activity</u> at the time of the fall?</b> (tick one only)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> a) related to toileting and continence care (including walking to/from toilet, etc.)</li> <li><input type="checkbox"/> b) grooming or bathing (including walking to/from toilet, etc.)</li> <li><input type="checkbox"/> c) try to reach bed side or distant objects</li> <li><input type="checkbox"/> d) transfer by self or others without specified purpose</li> <li><input type="checkbox"/> e) walking without specified purpose</li> </ul>	<p><b>3. What was the <u>mechanism</u> of the fall?</b> (tick one only)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> a) slip/trip and fell</li> <li><input type="checkbox"/> b) transfer by others</li> <li><input type="checkbox"/> c) lower limbs weakness / lost balance</li> <li><input type="checkbox"/> d) loss of consciousness</li> <li><input type="checkbox"/> e) uncertain</li> </ul>	<p><b>4. What <u>interventions</u> were in place at the time of the fall?</b> (can choose more than one answer)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> a) alarm pad</li> <li><input type="checkbox"/> b) under direct personal supervision and care</li> <li><input type="checkbox"/> c) had been advised for using call bell for assistance</li> <li><input type="checkbox"/> d) mobility aids</li> <li><input type="checkbox"/> e) pharmacological restraint</li> <li><input type="checkbox"/> f) physical restraint</li> <li><input type="checkbox"/> g) regular toileting support</li> </ul>
<p>Others:</p>	<p>Others:</p>	<p>Others:</p>

**5. Other important remarks:**

Assessor: \_\_\_\_\_ Date of assessment: \_\_\_\_\_

The contributing factor is communicated with Duty IC / WM \_\_\_\_\_  Unnecessary

Please Fax to 1-3513-5953 for Data Collection AND

Send this form to S-14B, Ms Fung Oi Kuen (UCHFPI Program Coordinator, DECT 6532)

- Geriatrics nurse and doctor will monitor progress for follow up arrangement, including reviewing electronic patient record and telephone follow up if necessary.



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# **Data from Falls Review**

# Falls as analyzed by Sex & Age groups 2012

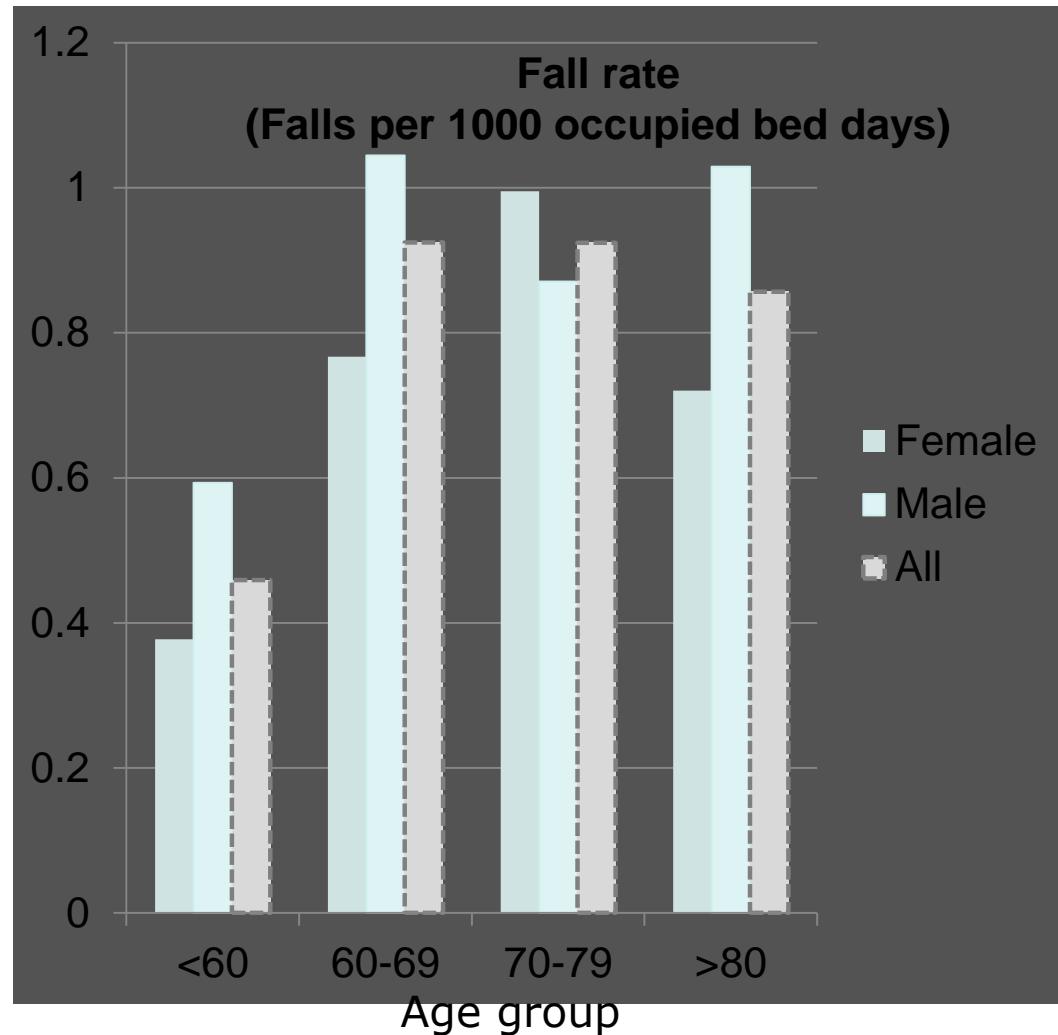
	Age Group	# of fall	% of total 2012 fall cases
Female	<60	23	10%
	60-69	14	6%
	70-79	31	13%
	>80	38	16%
<b><u>Female Total: 106 (46%)</u></b>			

	Age Group	# of fall	% of total 2012 fall cases
Male	<60	22	9%
	60-69	25	11%
	70-79	36	16%
	>80	43	19%
<b><u>Male Total: 126 (54%)</u></b>			

Sex Ratio  
(Female : Male)  
53 : 63

# Fall Rate by Sex & Age group

	Age	#of fall	Bed days	Fall rate
Female	<60	23	61273	0.375369
	60-69	14	18322	0.764109
	70-79	31	31229	0.992667
	>80	38	52834	0.719234
Female Total: 106 (46%)			163658	0.647692
Male	<60	22	37766	0.582535
	60-69	25	24405	1.02438
	70-79	36	41586	0.865676
	>80	43	41877	1.026817
Male Total: 126 (54%)			145634	0.865183
All	<60	45	99039	0.454366
	60-69	39	42727	0.912772
	70-79	67	72815	0.92014
	>80	81	94711	0.855233
Total: 232 (100%)			309292	0.7501

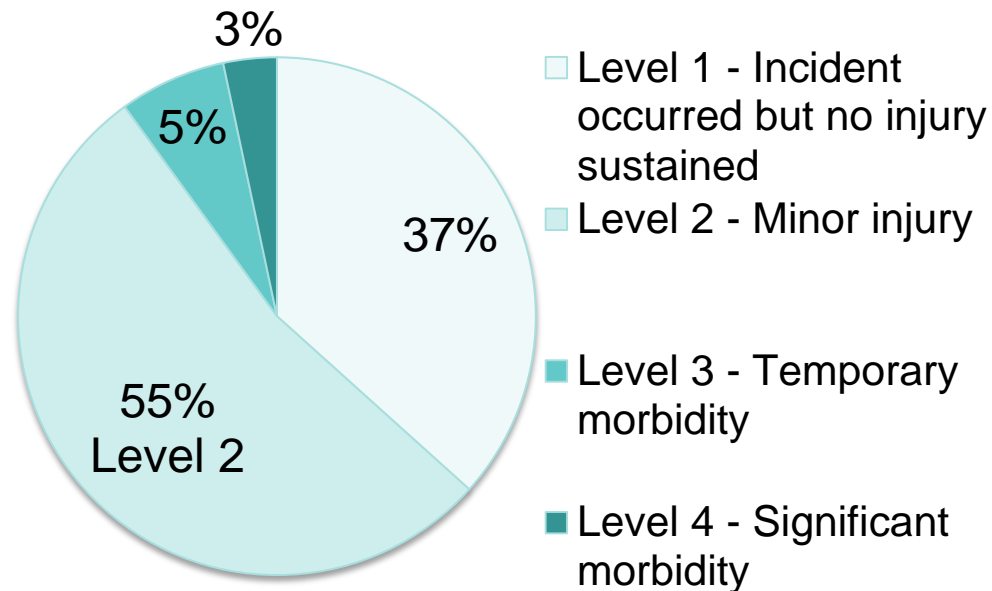


Data of 2012 (updated on 08/11/2013)

# Severity Index of Incident

from HA-AIRS:  
Patient Fall Incident Report

Severity level	# of fall	% of total 2012 fall cases
Level 1	86	37%
Level 2	128	55%
Level 3	12	5%
Level 4	6	3%
TOTAL	<u>232</u>	<u>100%</u>



Data of 2012 (updated on 08/11/2013)

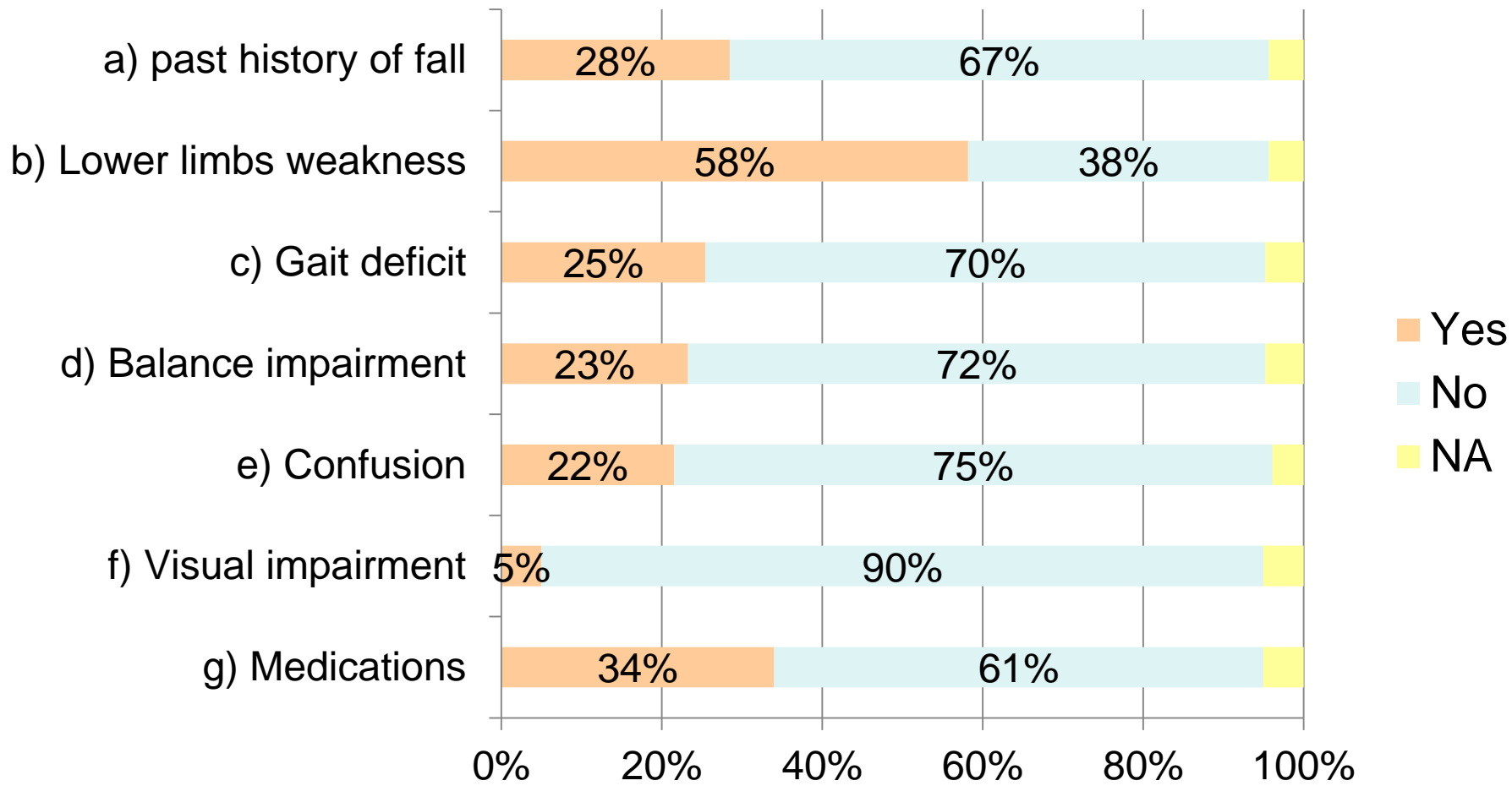
# Severity Index of Incident by Age group

Number of falls

		Level 1 + 2		Level 3 + 4	
Age Groups	<60	43	19%	2	1%
	60-69	39	17%	0	0%
	70-79	63	27%	4	2%
	>80	69	30%	12	5%
	<b><u>TOTAL</u></b>	<b>214</b>	<b>92%</b>	<b>18</b>	<b>8%</b>

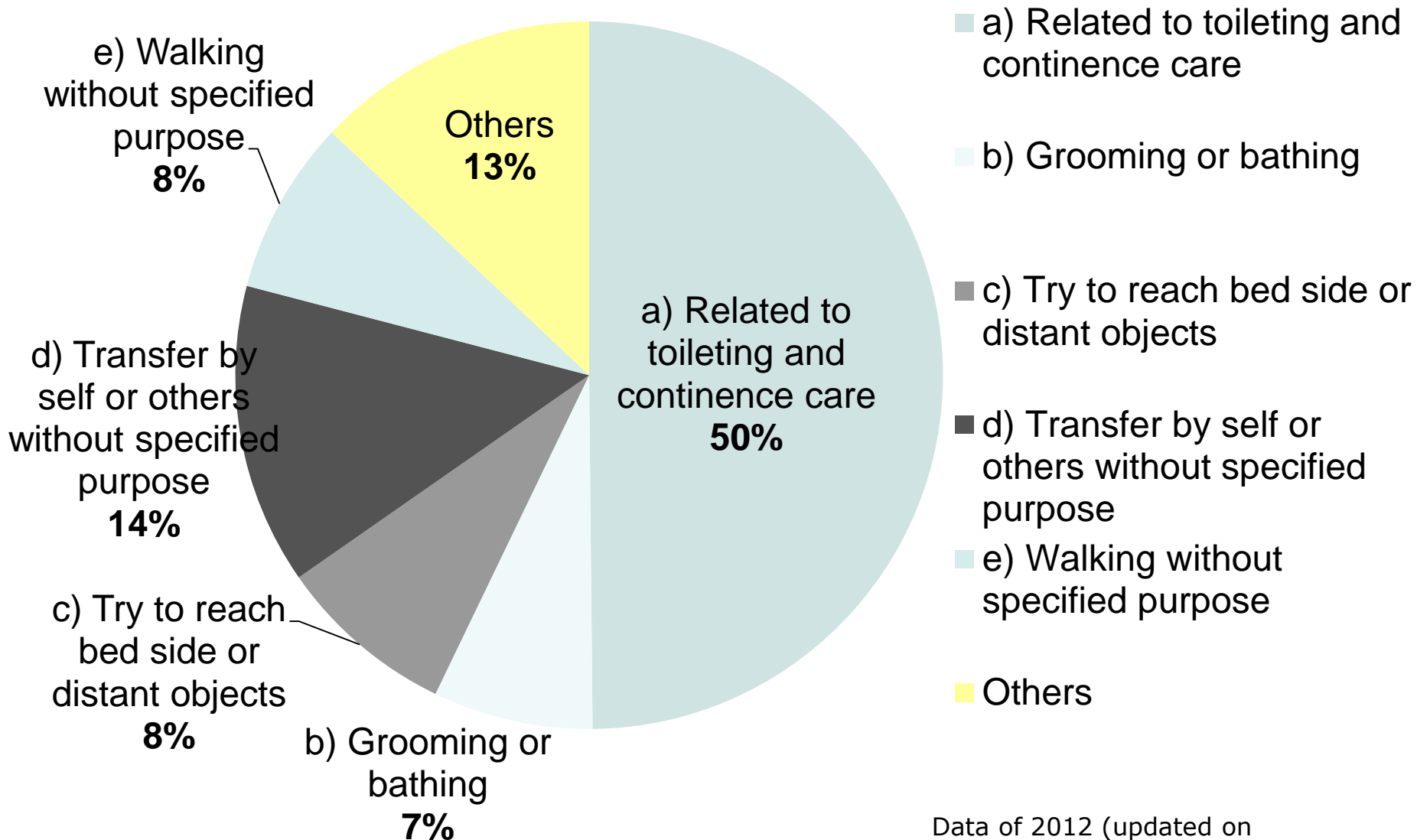
Data of 2012 (updated on 08/11/2013)

# Risk Factors for falls and injury



Data of 2012 (updated on 08/11/2013)

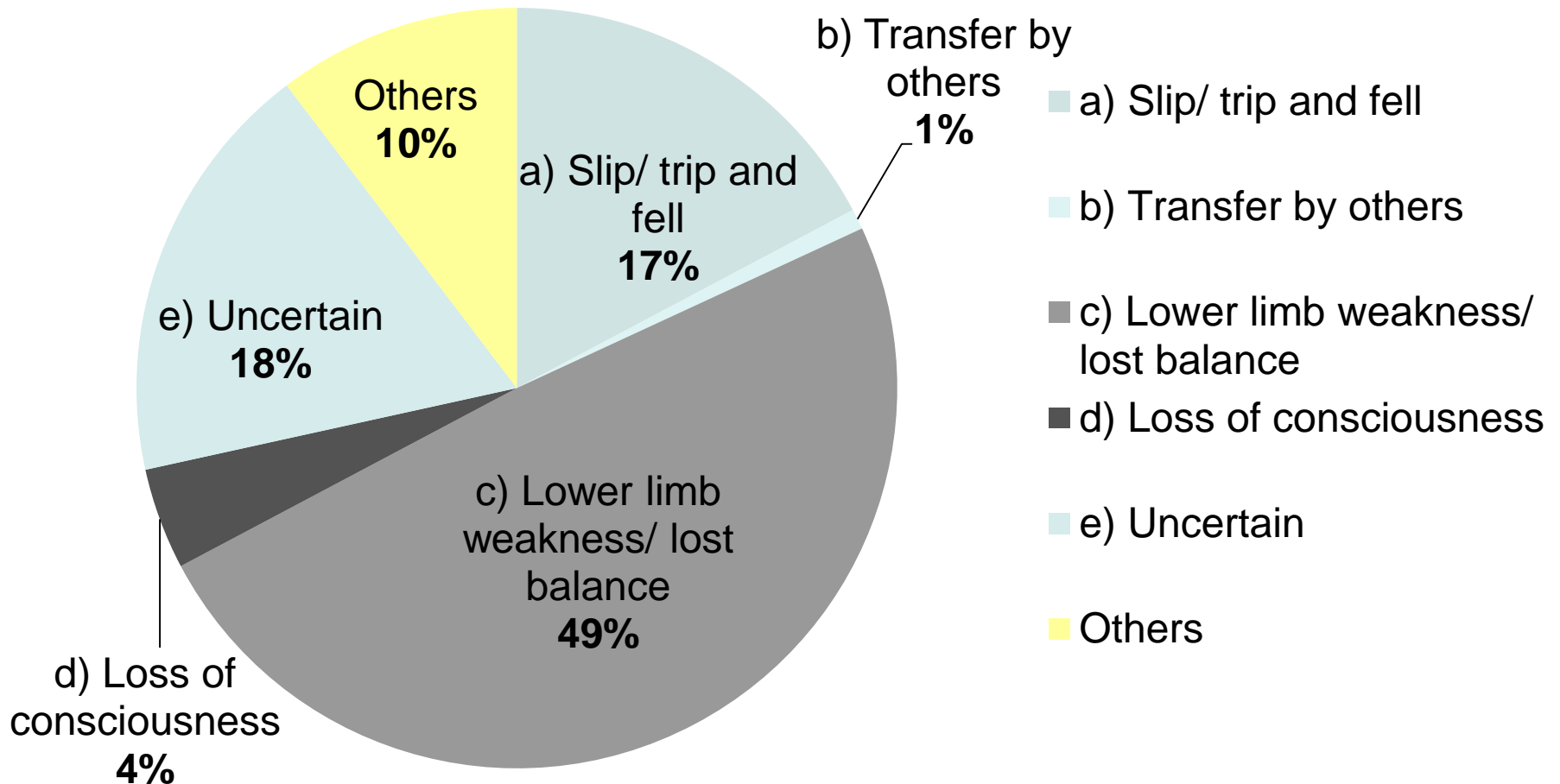
# Activity during fall incident



Data of 2012 (updated on 08/11/2013)



# Mechanism of fall incident

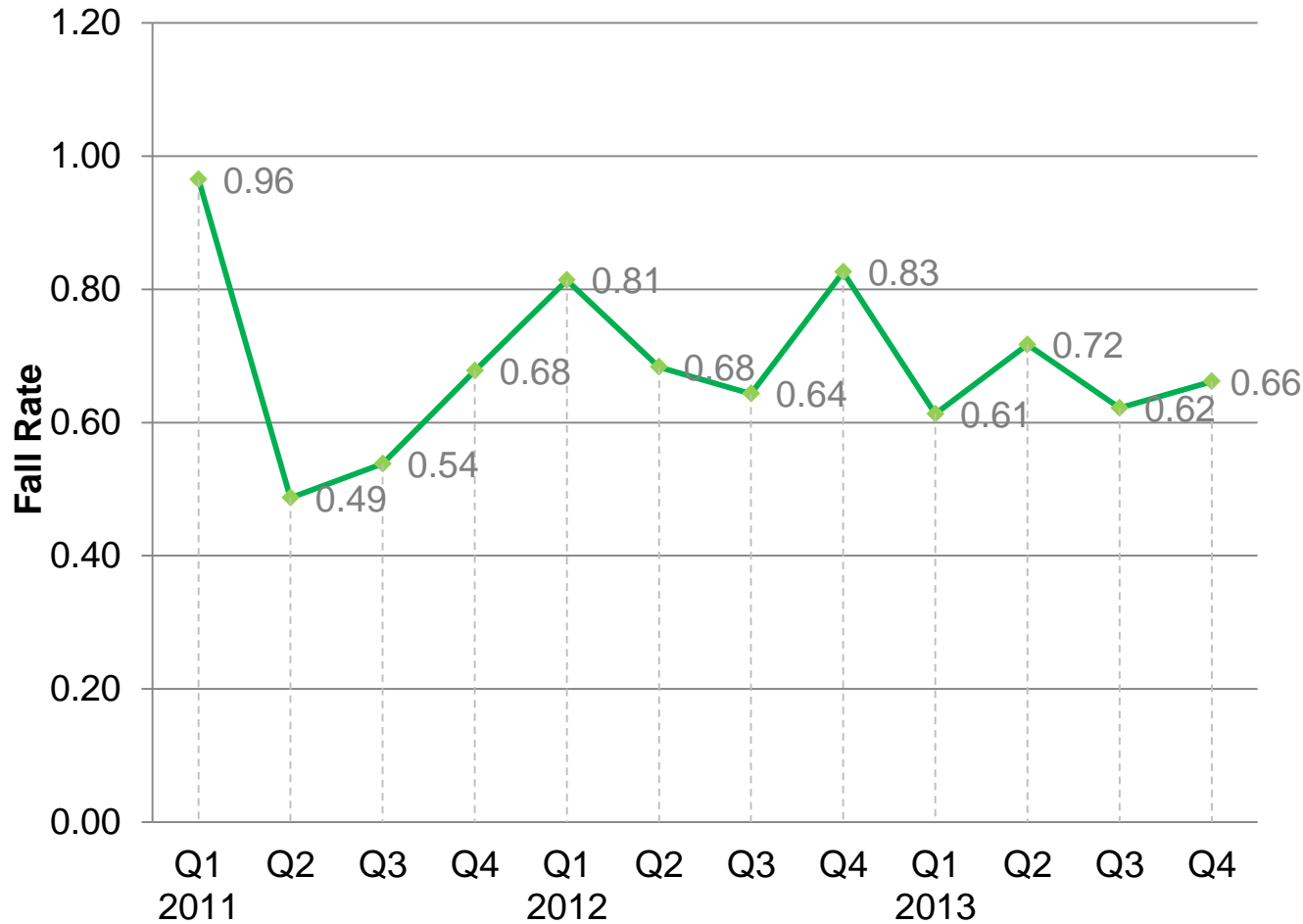


Data of 2012 (updated on 08/11/2013)

# Fall Rate (2011 - 2013)

		<u>Fall Rate</u>
<b>2011</b>	Q1	0.96
	Q2	0.49
	Q3	0.54
	Q4	0.68
<b>2012</b>	Q1	0.81
	Q2	0.68
	Q3	0.64
	Q4	0.83
<b>2013</b>	Q1	0.61
	Q2	0.72
	Q3	0.62
	Q4	0.66

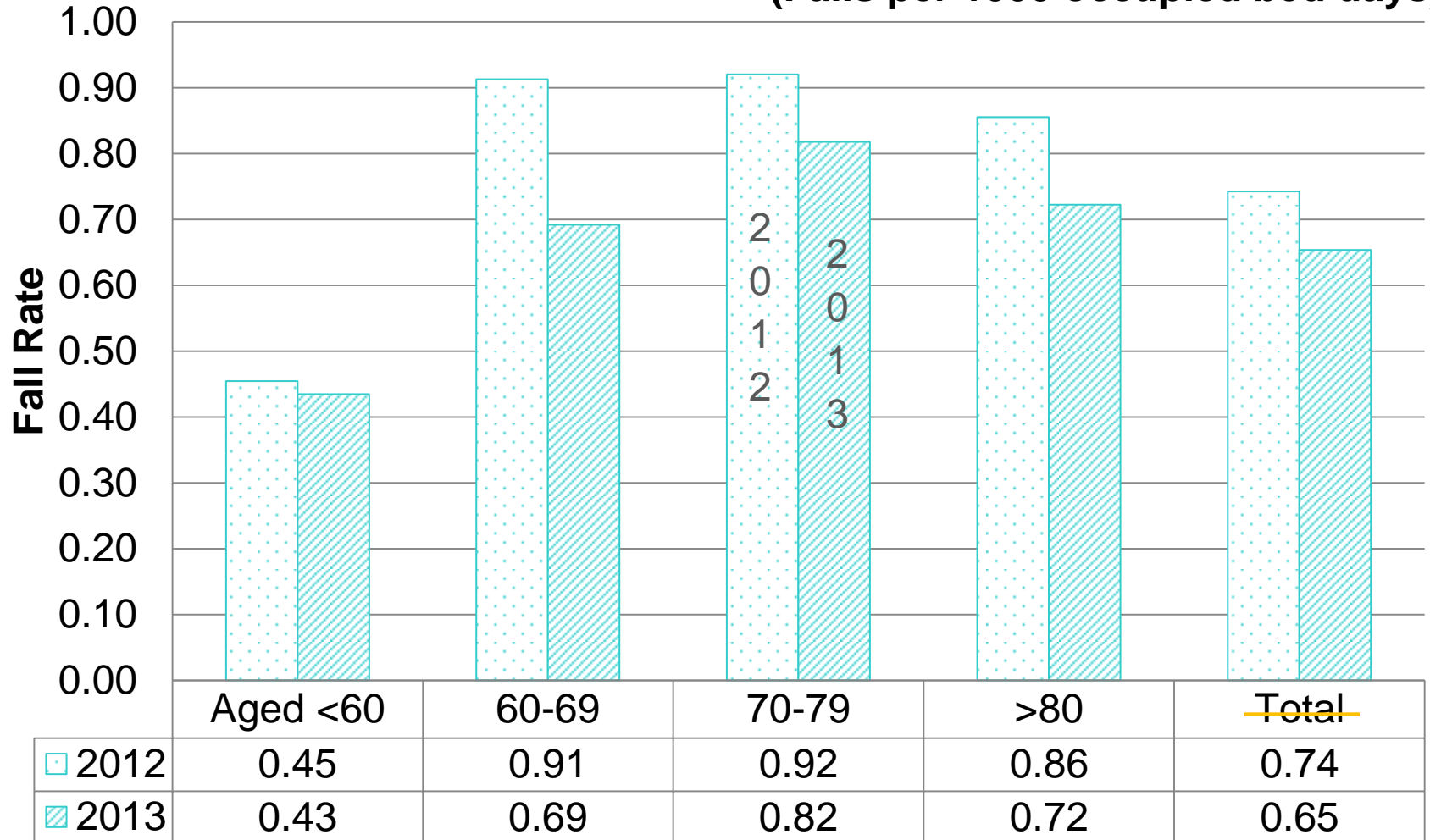
Per 1000 bed days



	<b>2011</b>	<b>2012</b>	<b>2013</b>
<u>Fall Rate</u>	0.67	0.74	0.65

# Fall Rate by Age group (2012 & 2013)

(Falls per 1000 occupied bed days)





# Summary

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- Hospital-Wide Fall Prevention Management Structure was set up
- Established Risk Assessment for patients to supplement Morse Fall Scale
- Environmental Assessment performed and improvement undertaken
- Provide fall prevention devices and equipment through Annual Plan
- Regular Staff, Patient and Relative Education
- Systematic Collection of Fall Data for monitoring of fall risks and development of intervention
- Implementation of Toilet Plan for High Risk Patients
- Encouraging result in Downward Trend of In-patient Falls

# ACHS Gap Analysis Report

## 4-8 March 2013

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**Falls prevention and management** is excellent at UCH. This program is multidisciplinary and very well considered and evaluated. It is clear that a lot of effort has gone into all aspects of this criterion. The focused post fall evaluation is excellent and guides further practice both for individual patients and for general practice change. The Consultants found that everyone in the clinical areas knows about their role in preventing and managing falls. Several publications were also noted.

AUSTRALIAN LAW COUNCIL

# Fall Prevention Ward Co-ordinators

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# Thank You!

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