

Health Informatics and Geriatric Medicine



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Introduction to Health Informatics

"Health informatics is the intersection of clinical, IT and management practices to achieve better health."

(COACH 2008)

- It is the rational study of the way we think about patients, and the way that treatments are defined, selected and evolved.
- It is the study of how medical knowledge is created, shaped, shared and applied. (Enrico Coiera 1997)
- Health Informaticians can be the bridge between technology and clinical practice.



Health Informatics

Goals of Informaticians:

- right information is available
- right people within an organization
- at the right time and place
- and for the right price
- Health Informatics is currently gaining in awareness as it supports patient safety, evidence based medicine, patient education and knowledge translation and exchange.



Gero-informatics

GERO-INFORMATICS

- Not a widely known term but exists!!
- Important because of our ageing population.
- Gaps in knowledge, practice, outcome evaluation, will begin to weigh heavily on geriatric medicine.*
- Gero-informatics specifically targets
 - Physical functional status, IADLs and ADLs.
 - Cognitive status
 - Patients' preferences for care
 - Key information from and about caregivers



Gero-informatics and the GDH

- Older adults face many challenges in improving health and obtaining high-quality, comprehensive, coordinated healthcare.
- Geriatric Day Hospital and the Interdisciplinary team
 - Evidence regarding long-term outcomes such as quality of life and institutionalization related to Canadian day hospital programs has been largely **inconclusive** (Crilly et al., 2005, Myint, 2005)
 - due to lack of **systematic data collection** tools
 - methodological **pitfalls** in defining and measuring **outcomes** in this dynamic population.*



GDH Integrated Patient Information System

Capital Health **GDH Integrated Patient Information System** EXIT

Select a patient from the drop down list then click the button to view,add or edit their information for each module:

HC

Patient Assessment	GO
Function	GO
Strength and ROM	GO
Balance and Gait	GO
Nursing	GO
Falls	GO
Social Work	GO
Goal Attainment Scaling	GO



Medication Management



Day Hospital Screening Tool

Print Screening Form

THUMBNAIL SKETCH

First Name Last Name DOB Age 98 Gender MSI 4544645645

Allergy Warning ** eggs and flu shot, new allergy

Date Screened 18-Aug-08 Referred because of: recurrent falls Description of Patient Hazel is frail, thin and pale, wears glasses.

Case Mgr

ACTIVE PROBLEMS | SENSORY FUNCTION | PMHx & MEDS | CONTACT INFORMATION | OUTCOME OF ASSESSMENT

Patient Conditions	
Condition	Details
Hypertension	
Peripheral edema	
Asthma	250mcgs puffs, 1 puff ventolin
Seizures	
Other Drugs	suspected osteo, sleep problems
*	

Medications associated with Hypertension					
Medication	Dose	Route	Freq	PRN	
Altace (ramipril)	2.5	PO	OD	<input type="checkbox"/>	SAVE DEL
metoprolol (Betaloc)	25mg	Topi	QHS	<input type="checkbox"/>	SAVE DEL
*				<input type="checkbox"/>	SAVE DEL

- All meds for Hazel
- All Medications
- Altace (ramipril)
 - metoprolol (Betaloc)
 - Lasix (furosemide)
 - Ventolin
 - Flovent (fluticasone)
 - phenobarbital
 - fosamax (Actonel)
 - Ativan (lorazepam)

Please enter any Drugs NOT Found in the box below:



Function



Function Module

Capital Health

First Name

HC

Last Name

Age 98

[Print Function Report](#)

[Exit](#)

Allergy Warning ** eggs and flu shot, new allergy

Instrumental Activities of Daily Living

Basic Activities of Daily Living

	COLLATERAL	NEVER DID	CURRENT	DESCRIPTION	CONCERNS	GOAL SET?
FINANCES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Missing Bills <input type="checkbox"/> Paying Twice <input type="checkbox"/> Spending <input type="checkbox"/> POA Needed	<input type="text"/>
<i>Notes:</i>						
DRIVING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> MVA's <input type="checkbox"/> Risky Behaviour <input type="checkbox"/> Family Concerned <input type="checkbox"/> Failed Previous Driving Test	<input type="text"/>
<i>Notes:</i>						
SHOPPING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Poor Nutrition <input type="checkbox"/> Inadequate Access	<input type="text"/>
<i>Notes:</i>						
COOKING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Leaves Stove On <input type="checkbox"/> Burning Pots <input type="checkbox"/> Needs Pre-made Meals	<input type="text"/>
<i>Notes:</i>						
MEDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Missed Doses <input type="checkbox"/> Double Doses <input type="checkbox"/> Complex Schedule <input type="checkbox"/> Needs Blister Pack <input type="checkbox"/> Needs Dosette <input type="checkbox"/> Needs VON/Supervision	<input type="text"/>
<i>Notes:</i>						
PHONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Problems using Lifeline <input type="checkbox"/> Needs Lifeline	<input type="text"/>
<i>Notes:</i>						
LAUNDRY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>		<input type="text"/>
<i>Notes:</i>						
CLEANING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> Cannot Maintain House Interior/Exterior	<input type="text"/>
<i>Notes:</i>						



IADL and ADL Report



Capital Health

Geriatric Medicine

Functional History: Information from Patient and Caregiver

Case Manager: Andrea

MSI 4544645645

HC is a 98 year old female screened on 8/18/2008 who was referred because of : recurrent falls

HC

BARCODE

PATIENT LABEL

INSTRUMENTAL ACTIVITIES OF DAILY LIVING

Legend: A= Assisted, I=Independent, D=Dependent

	COL.	N/A	CURRENT	DESCRIPTION	CONCERNS	GOAL SET
FINANCES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A	Needs help with major purchases Instructs her son regarding financial transactions.	<input type="checkbox"/> Missing Bills <input checked="" type="checkbox"/> Paying Twice <input type="checkbox"/> Spending <input checked="" type="checkbox"/> POA Needed	Monitor
DRIVING	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D	Always needs assistance	<input type="checkbox"/> MVA's <input type="checkbox"/> Risky Behaviour <input type="checkbox"/> Family Concerned <input type="checkbox"/> Failed Previous Driving Test	
SHOPPING	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A	Independent for small purchases	<input type="checkbox"/> Poor Nutrition <input type="checkbox"/> Inadequate Access	Goal



Mobility Module



Mobility Module

Capital Health

First Name

Last Name

Age 98

[Print Mobility Module](#)

CNS Status Normal Drowsy DFC Anxious

STONE ARMS/LEGS

STRENGTH ARMS

STRENGTH LEGS

BULK ARMS & LEGS

ROM

REFLEXES

SENSATION & CEREBELLAR & PRAXIS

MSK

ARMS

LEFT SIDE

RIGHT SIDE

<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Shoulder Adduction	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Shoulder Abduction	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Biceps	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Triceps	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Wrist Extensor	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Wrist Flexor	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Pronation	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Supination	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>
<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>	Grip	<input type="button" value="1"/>	<input type="button" value="2"/>	<input type="button" value="3"/>	<input type="button" value="4"/>	<input type="button" value="5"/>

LEGEND:

- 1 = Flicker
- 2 = Cannot overcome gravity
- 3 = Can overcome gravity
- 4 = Weaker than Examiner
- 5 = Can match Examiner



Balance and Gait



Balance and Gait Module

First Name **HC**

Last Name

Age **98**

[Print Balance Information](#)

[Exit](#)

BALANCE GAIT

Date **19-Aug-08**

Assessor **Debbie W.**

TUG:

Aid **4 pronged cane**

6min Walk:

Sitting Balance Unsupported	Able to sit 30sec or more
Sitting to Standing	Able to stand using hands after several tries
Immediate Standing Balance	Steady but uses walker or other support
Standing Balance Unsupported	Able to stand 2min with supervision (standby)
Standing to Sitting	Needs assistance to sit
Transfers (Bed to Chair)	Sits independently but has uncontrolled descent
Sternal Nudge	Uses back legs against chair to control descent
Standing Eyes Closed	Controls transfer from stand to sit by using hands on arms of chair
Standing Feet Together	Sits safely with minimal use of hands
Functional Reach Dist->	0 M
Retrieving Object from Floor	
Turning neck to look behind	
Turn 360 degrees	
Place Alternate Foot on Stool	
Tandem Stance	

Berg	POMA	Balance Notes
2	1	
2	2	
0	1	
3	1	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	



Goal Attainment Scaling (Prototype)



Goal Setting Module

Print Goal Report

Capital Health

First Name

HC

Last Name

Age 98

Goal Setting

Monitoring

Goal Areas Identified

- Cooking
- Shopping
- Toileting
- Mobility
- Bathing
- Blood Pressure

Cooking

Baseline To be able to remember that she is cooking something, to make sure she does not leave pots on and gets adequate nutrition because it will keep her more independent and safer

- 2 Be able to cook and use oven and burners without burning and leaving things on
- 1 Be able to microwave safely
- 0 Be able to safely store food and know when to eat
- 1 Have a VON come in three times a week
- 2 Need full supervision

Date	Current Status	Plan	Team Member	Score	Complete?
9/1/2008	Right now she is only able to store food properly, because she has forgotten how to use the stove	Buy microwaveable meals, teach how to use the microwave properly.	OT Nursing Social Work	1	<input checked="" type="checkbox"/>
9/3/2008	Same status but had a cooking lesson		OT PT Physician	2	<input type="checkbox"/>
9/2/2008				0	<input type="checkbox"/>

Notes Tracey can safely cook her own meals now after being re taught.



CGA Assessment and HABAM Data

- Computerized a prototype for the CGA assessment form and HABAM assessment scale
- Can calculate the frailty score instantly
- Data can be extracted and used for research
- Links the CGA to HABAM – all HABAM scores entered each day.



CGA and HABAM

Last Name	First Name	Hospital #	Account#	HospLocation#	DOB	Patient Status	Old Form			
Name	Fake	99999	99999		19-Jun-1918	Inpatient	<input type="checkbox"/>			
City	Province	Mths since well	Chief Life Long Occupation	Education	Gender					
Halifax	NS				M					
Mental				Emotional						
Mental Status	Delirium	MMSE	FAST	Emotional Status	Anxiety	Other				
Dementia	<input checked="" type="checkbox"/>	27	4	WNL	<input type="checkbox"/>	<input type="checkbox"/>				
Motivation		Communication		Overall Fitness						
Motivation	Health Attitude	Speech	Hearing	Vision	Overall Fitness					
Low	Poor	WNL	Impaired	Impaired	Mildly Frail					
Social										
Social	Lives	Supports	Level House	Levels #	Steps #	Caregiver Rel'n	Caregiver Stress	CG Occupation		
Married	Spouse	Informal	Level House			Spouse	Low	Housewife		
BASELINE				CURRENT				NOTES		
Mobility	Transfer	Walking	AID	Mobility	Transfer	Walking	AID			
	I	A	Walker		D	D				
Balance	WIL	Impaired	Falls	Falls#	Balance	WNL	Impaired	Falls	Falls#	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Elimination	Bowel	Bladder	Nutrition	Weight	Appetite	Feeding	ADLs	Bathing	Dressing	Toileting
	Cont	Cont		Under	Poor	I		A	I	
IADLs	Cooking	Cleaning	Shopping	Meds	Driving	Banking				
	D	D	D	D	D	D				
PROBLEMS				# of Problems	# of Meds					
				7	1					
Problem	Medication									

HABAM DATA	
ENTER DAY	1
BALANCE	
21 Stable Ambulation	
14 Stable Dynamic Standing	
10 Stable Static Standing	
7 Stable Dynamic Sitting	
5 Stable Static Sitting	5
0 Impaired Static Sitting	
TRANSFERS	
18 Independent and Vigorous	
16 Independent	
14 Independent but Slow	
12 One Person Standby	
11 One Person Minimal Assist	
7 One Person Assist	
3 Two Person Assist	
0 Total Lift	0
MOBILITY	
28 Unlimited Vigorous	
26 Unlimited	
25 Limited >50m No Aid	
21 Unlimited, With Aid	
19 Unlimited With Aid, Slow	
18 With Aid >50m	
16 No Aid, Limited 8 to 50m	
15 With Aid 8 to 50m	
14 With Aid <8m	
12 One Person Standby/+/- Aid	
9 One Person Hands On/+/- Aid	
7 Lying-Sitting Independent	
4 Positions Self In Bed	4
0 Needs Positioning In Bed	



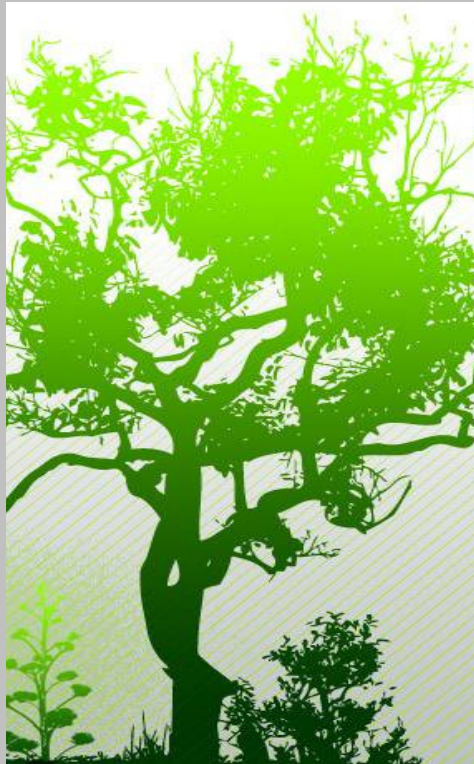
Moving Forward

- We have the data which when organized becomes meaningful information.
- Information is then interpreted and processed by our minds to become knowledge.
- Knowledge can then be shared to make care better.
 - Patient focused approach
 - Be used to inform policy makers
 - Drive research
 - Help with accountability
 - Produce reports for management
 - Be used to measure patient OUTCOMES

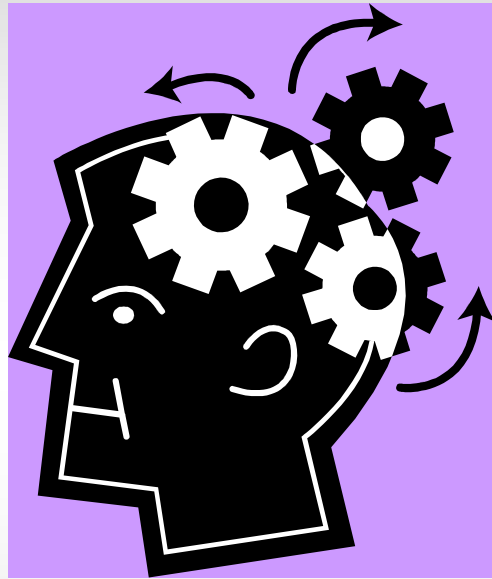


Gero-informatics

If we take care of our little corner, together we can better patient care and be leaders in innovation to help those that follow in our footsteps.



Questions...Comments...Thoughts?



Thank you!

