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The University of Manchester

Development of an Electronic LTCs Integrated Assessment Tool

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Aim

To develop an electronic long-term conditions (LTCs) integrated assessment tool to identify and address unmet health and social care needs for people with multimorbidity. The electronic format provides an efficient method for sharing an assessment and management process across multidisciplinary teams.

Objectives

•To design an electronic tool that can deliver a holistic assessment of multimorbidity.

•To provide a shared process across integrated teams to improve communication and reduce repetition of assessment.

•To improve data quality.

•To ensure that clinical assessment procedures are consistent and evidence based. •To reduce time spent on LTC assessments by the use of an electronic rather than a paper based process.

Background

LTCs such as cardiovascular disease, diabetes and respiratory disease are the leading causes of disability and death in the western world.¹ Around 15 million people in England have at least one long-term condition,¹ many have two or more (multimorbidity). Patients with multimorbidity are generally higher uses of health services, are at increased risk of premature death, unplanned hospital admissions and extended length of (hospital) stay (LOS).² Individual diseases dominate healthcare delivery, yet people with multimorbidity need a much broader approach.³ An electronic integrated assessment tool may assist CCGs and community services in delivering NHS Outcomes⁴ and the LTC QIPP,⁵ improve communication, reduce repetition and provide a shared approach to assessment and care planning across integrated health and social care teams.

Design

The design of the electronic LTC integrated assessment tool was informed by a literature review, patient interviews and discussions with health and social care professionals and clinical specialists, to develop a greater understanding of multimorbidity in terms of:

•Patients'/service users' needs.

•The risks to health and well being.

- •The impact on daily living and social life.
- •The impact on health services.

The tool provides a holistic assessment of health and social needs and is divided into physical, psychological, social and spiritual needs. The physical needs section is the largest and is sub-divided into the following:

- Sensory Cardiovascular Activities of Daily Living (ADL) Endocrine and Metabolic Bladder Respiratory • Bowel Musculoskeletal Tissue Viability



Advance Care Planning

Tool Fo	ormat				
Most Phys	ical needs pages	and Psychologic	al needs have a	standard form	at comprising:
 Symptor 	n review	 Risk asse 	ssment		
Clinical e	examination.	 Further d 	details/commer	nts.	
 Patholog 	ZV.	Clinical t	ools/clinical evi	dence.	
-					
 Other in 	vestigations.			Drope	down boxes reduce the need for
				free t	ext and improve the summary
				outpu	ut. Items are populated to other
	Casting 5 Distribution in Cas	J			s if required.
Demographic Details	Section 5. Physical needs - Car Symptom review	diovascular		pages	sh required.
Assessment Details	SOB Yes	Chest tightness	Chest pain	•	
1. Medical history Medication	SOB triggered by (1)	SOB triggered by (2) Exer			s for exacerbation Clinical guidelines
Allergies/sensitivities	SOB relieved by (1) Res			of HF. Is BNP/Ec	
2. Support (Services)	Orthopnoea Dizziness	PND	Palpitations Claudication	(add/substitute/	
3. Self reported needs	Fatigue	Syncope Sexual dysfunction			Ingingiteu.
4. Investigations	Add symptoms not listed				
5. Physical needs Cardiovascular	Clinical examination			0	
Endocrine/Metabolic	Pulse: rate	Systolic BP 14	49 Foot pulses		
Respiratory	Pulse: rhythm		0 Peripheral oedema	0	
Musculoskeletal	Heart sounds JVP	Postural hypotension	Ankle oedema 10 year MI risk %	Yes 22	
Neurological	Pathology				
Cognitive	НВ	wcc	мсу		Dieke ara
Sensory ADL	Sodium	Potassium	Urea	*	Risks are
Bladder	Creatinine		7 PCR (mg/mmol)	0	calculated from
Bowel	eGFR (1) 52		eGFR (3)		data inputted.
Tissue Viability	Fasting TC Fasting TG	Fasting LDL LFTs	Fasting HDL		-
6. End of Life	TSH	ТЗ	T4		Further details can
7. Psychological needs 8. Social needs	BNP	NT-ProBNP			ppp be added as free
9. Spiritual needs	Other Investigations				toxt
10. Adherence	Proteinuria (dipstick)	Haematuria (dipstick)	Leucocytes (dipstick)	Diagnosis of AF: score has been	
11. Summary	Nitrites (dipstick) Echo (TTE)	Glucose (dipstick)	Ketones (dipstick) Stress Echo		y (NICE 2006,p7)
12. Care Plan	ECG	CXR	Angiography	and (ESC 2012)	below.
13. HCP Correspondence	Risk assessment				
14. Patient Enablement	CHA ₂ DS ₂ -VASc score = 3	Adjusted stroke rate (%/yr) = 3.2	Moderate stroke risk	() ^{**}	
	HF: Risk of exacerbation	×	NYHA Classification III		
	BP above Target CKD Risk	Proteinuria			
	22% risk of MI in the next 10 years				Links to national
A quick link	Further details/comments				
box speeds	Turther de tansy comments				and international
•	Clinical tools/Clinical evidence				guidelines (e.g.
the					NICE) allows instant
assessment	PDF		PDF	7	,
nrocess	Adobe	kite	PDF Adder		access to clinical
process.	CHA2DS2VASc NICE (2 Managem	ESC (2012) Update	NICE (2008) BSE (2011)		information.
	score				

Activities of Daily Living (ADL) and Social Needs

For ADL (shown below) activities are discussed and observed to identify needs

	ADL needs Requires help with daily living activities	Yes	1	Observed	Discussed	
	Mobility		with equipment	✓ ×	✓	
	Transfer		with equipment	✓	 ✓ 	
	Stairs	need identifie		×	 ✓ 	
DL equipment	Bathing	need identifie		 ✓ 		
lready in use is	Washing	needs assistar	✓	 ✓ 		
•	Oral hygene	independent		×	×	
so recorded so	Dressing	needs assistar	nce, but full physical support provided	✓	 ✓ 	
at an assessment	Grooming	independent	with equipment	✓	 ✓ 	
foquipmont	Footcare	need identifie			✓ ✓	
fequipment	Food preparation		need identified			
eeded can be	Feeding	need identifie	✓	×		
made.	Cleaning	need identifie		×		
	Laundry	need identifie		×		
	Toilet Use	needs assistar	✓			
	Bladder		frequent leak, need identified continent with regular enemas and fully supported			
	Bowels DIY		needs assistance, but full physical support provided			
	Requires help for activities away from home]	Observed	Discussed	
				Observed	Discussed	
	ADL equipment	Tri -wheel wa	lkor			
	III-fitting dentures	In -wheel wa	ker			
	Risk assessment					
	ADL needs identified: 8	Moderate leve	el of need for ADL			
Power of attorney	Has a registered Lastir	ng Power of Atto	rnev	·		
Informal carer		Need identified: Unable to provide complete physical support				
Risk assessment						
			Incomplete informal carer supp			

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Embedded Health Questionnaires

I feel tense or 'wound up':	A lot of the time		
I still enjoy the things I used to enjoy:	Only a little		Validate
I get a sort of frightened feeling like something awful is about to happen:	Yes, but not too badly		are emb
I can laugh and see the funny side of things:	Not quite so much now	-	tool. Sc automa
Worrying thoughts go through my mind:	A lot of the time		interpre
I feel cheerful:	Sometimes		in the ri
I can sit at ease and feel relaxed:	Not often		section.
I feel as if I am slowed down:	Sometimes		

Validated questionnaires
are embedded into the
tool. Scores are
automatically calculated,
interpreted and presented
in the risk assessment
soction

OPD Assessment Test (CA	NT)				-	-	-			-	-		
Save Selected Options	For each item, please describe how y on a scale of 0-5 when		ırren	tly fe	el						Cle	ear pre scor	
I never cough = 0 I cough all the time =	5	С	0	С	1	•	2	c	3	С	4	С	
I have no phlegm (m = 0 	ucous) in my chest at al ly full of phlegm		0	с	1	c	2	۰	3	с	4	с	
My chest does not fe My chest feels very t	•	c	0	с	1	с	2	۰	3	с	4	с	
am not breathless =	or one flight of stairs I	с	0	с	1	с	2	٠	3	с	4	с	

Assessment Summary

Findings are brought together to provide an overall picture of the patient's needs and risks to health and social wellbeing. From this a care plan is formulated.

oconon 22. oanniary		
Medical History		
Medical conditions	Atrial Fibrilation	Diabetes Ty
	Hypertension	Left Ventri
	Rheumatoid Arthritis	
Symptom review	SOB	SOB trigger
	SOB relieved by: Rest, Medication	Balance pro
	Fall in last 12 months	Poor memo
	Leak on coughing/laughing/sneezing	
Clinical examination	Systolic BP = 145	Diastolic BF
	Ankle oedema	Difficulty ri
Pathology	eGFR (1) = 45	ACR (mg/m
Risk assessment	HF: Risk of exacerbation	CKD Risk
	Proteinuria	22% risk of
	Diabetes 9 key test not complete	Significant
	Optometry examination date unknown	ADL needs
	Moderate level of need for ADL	Pelvic floor
	Moderate level of need for managing social	Incomplete
	affairs	
	Several barriers to adherence	Not using a
Requires help with daily living	Mobility need identified (observed/	Transfer ne
activities	discussed)	support pro
	Stairs need identified (observed/ discussed)	Bathing nee
	Footcare need identified (observed/	Feeding ne
	discussed)	
Social		
Social circumstances	Home Environment: Needs modification	
Managing social affairs	Collecting prescriptions: Need identified	Finances: N
	Benefits assessments: Need identified	Home safet
	Power of attorney: Has a registered Lasting	Informal ca
	Power of Attorney	provide cor

Shared Care

Actions		
From:	Role:	Date:
То:	Role:	
Further details/comments		Date to be completed by:
Actions		
From:	Role:	Date:
_		
To:	Role:	
Further details/comments		Date to be completed by:
Actions		
From:	Role:	Date:
То:	Role:	

A **correspondence page** allows electronic communication between integrated team members. An **assessment page** documents the number of assessments completed, who the assessors were, the date, time, location and what was assessed, to allow an audit trail to be developed.

Assessment Details 1	
Others present (name) during assessment:	Relationship:
Others present (name) during assessment:	Relationship:
Assessment completed by (name):	Role:
Sections completed:	
Questions answered by:	Location:

Progress So Far

- Prototype tool designed in excel 2010.
- Tool refined following clinical specialist feedback.
- Recruitment of community services for testing
- Tool converted to excel 2003 for compatibility with test sites.
- Testing commenced by Trafford Community Matron Service.

Future Development

- Continue recruitment of ACM/Community Matron Services.
- Extend testing to other services e.g. rehabilitation/social care.
- On-going refinement as testing progresses.
- Develop links with industry to explore options for rebuilding the tool into EPR systems.

References 1. WHO. 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases: World Health Organization, 2008. 2. Salisbury C, Johnson L, Purdy S, Valderas JM, Montgomery AA. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. Br J Gen Pract 2011;61(582):e12-21. 3. Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet 2012. 4. DoH. The NHS Outcomes Framework 2012/13. London: Department of Health, 2012. 5. DoH. LTC QIPP workstream London: Department of Health, 2011.

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ADL and Social ds, the number of tified needs are ulated and a ification is given



