

Measuring complexity in the complex General Medical patient using a novel patient engagement tool: The **T**eam **A**nd **P**atient **A**lignment **S**core (TAPAS)



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Patient story



Mr MJ, a 60 yo alcoholic is admitted with a recurrent infective exacerbation of COPD. He is unkempt and inebriated on presentation with delirium. Not requiring ICU. He is malnourished on a background of chronic pancreatitis, IRDM (unstable >1 week) and cirrhosis (no varices). He is unemployed and lives alone. He has been prescribed 10 different medications for regular use. He cannot afford to pay his rent and has few social supports.

Following admission, despite improving respiratory status he develops worsening alcohol withdrawal on day 2. In discharge planning, the team is concerned about both his health risks and his ability to live independently on discharge but the patient isn't!

- How can we measure and improve our effectiveness in the management of this patient?

Background

Acute inpatient medical workload is now mainly General Medical: complex co-morbid patients with polypharmacy often also with major social issues.

- Interdisciplinary teams construct unique management plans for every patient
- Limited opportunities exist to establish stable processes and measure performance to improve outcomes
 - Crude measures only: readmission rate, LOS, HSMR
- Involvement of multiple team members increases the risk of errors/mixed messages
- Complexity and workload may drown out the patient's voice

Context: Current GenMed approach

- 4,600 separations annually, LOS 5 days
- Interdisciplinary governance model (ACU)
- Geographical, team-based patient allocation
- Interdisciplinary rounding (SIBR)
- Staffing to match demand
- Continuity of care
- Strong relationships with E&TC and subacute care
- Communication initiatives – CareTV
- Building relationships with community providers
 - DMU, medicare local project

My sabbatical mission

- To understand the processes we use to manage complex patients and develop a methodology for improvement
 - Particularly interdisciplinary management processes
- To engage more effectively with patients, families and carers
- To obtain patient satisfaction input that can immediately influence real time performance

What does the literature say about engagement tools for inpatients?

Unrelieved symptoms impair

- QoL
- Functional status
- Response to treatment

Symptom management requires:

- Accurate symptom assessment
- Good communication between patient and provider

*But comprehensive symptom assessment is rarely part of acute health care
and*

Impact of illness is often underestimated by care providers

PROMS/PREMS

- Patient Reported Outcome Measures
 - Measure impact of illness from patients' perspective
 - Monitor progress of health condition and effectiveness of treatment based on patient responses
 - Mixed evidence regarding effectiveness in improving communication between providers and patients or patient satisfaction
- Patient Reported Experience Measures
 - Measure patients' view of what happened during care
 - Monitor quality of care and service improvement

How about ambulatory and post discharge patients

- PROMS
- PREMS
- Symptom distress scores
 - Disease specific
 - Non-disease specific

Direct patient entry into the EMR

- Patient controlled medical records increasing common – eg PKB
- HowsYourHealth.org
- Myhealth etc

Measurement of symptom distress

- Many symptoms scales for isolated conditions
 - GOERD
 - Cancer and Palliative care
 - Diabetes
- Most don't distinguish between system recurrence and symptom distress
- Often very detailed and tailored towards chronic rather than acute care (except pain scores)
- None compare patient perspective to those of the treating team

General Mission Statement

To improve patient outcomes (especially patient satisfaction, LOS and readmissions) by ensuring that the interdisciplinary team's assessment of the patient aligns with the patient's own concerns.

Aim statement

- To develop a visual tool suitable for daily bedside use that improves patient outcomes (especially patient satisfaction, LOS and readmissions) by aligning a complex hospital inpatient's needs and their interdisciplinary team's management plan.
- To pilot these tools in an Australian complex medical environment by June 2015

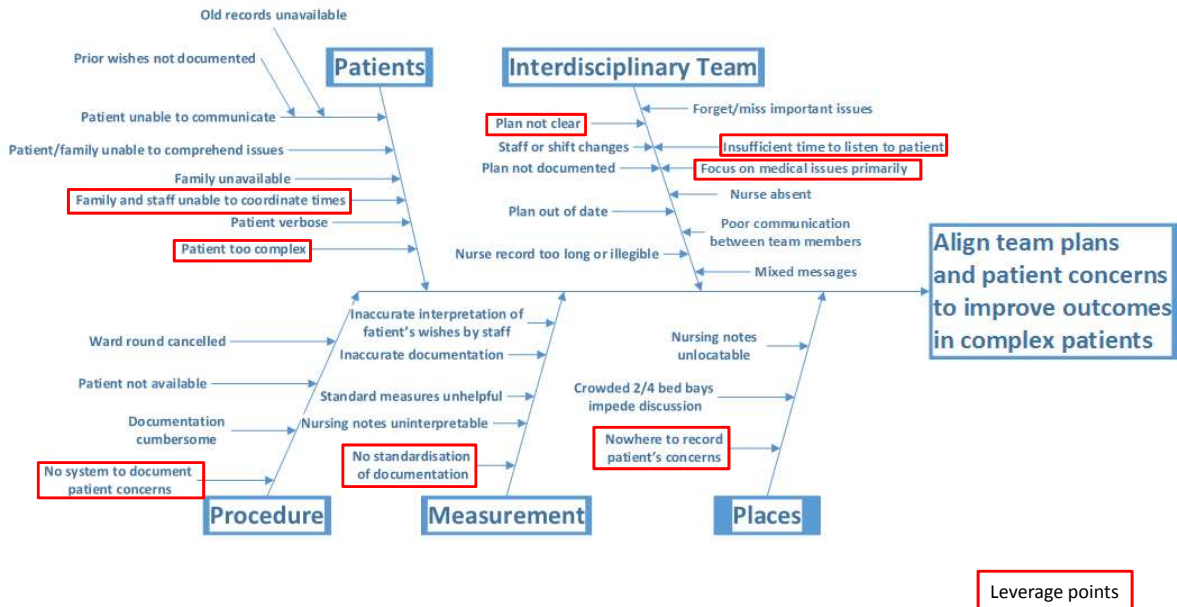
TAPAS project storyboard

- How did we get to this point?

Ishikawa diagram

A visual patient engagement tool to improve outcomes in complex patients

Cause and effect chart



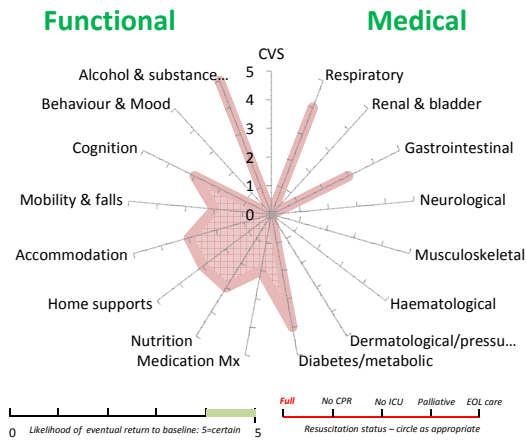
Team And Patient Alignment Score (TAPAS) Design principles

- Visualisation of complexity:
 - Inspired by radar plot use for gap analysis in complex project work (Ann Read). Generated by excel macros from excel datasheet.
- Principles
 - Check-listing and check back (confirmation)
 - Visualise complex information
 - Build new process into standard work and EMR
 - Patient engagement by *direct patient entry into EMR* in a form that staff can readily visualise.
 - Real time rather than post-discharge patient satisfaction measures to allow proactive intervention.
 - Easy real time entry into EMR that does not significantly delay interdisciplinary rounding process

Team And Patient Alignment Score (TAPAS)

The Interdisciplinary Team's assessment of the patient

Team Assessment (T-view)

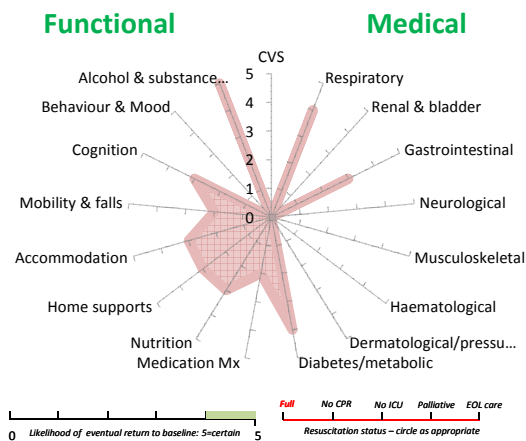


Mr MJ, a 60 yo alcoholic is admitted with infective exacerbation of COPD. He is unkempt and inebriated on presentation with delirium. Not requiring ICU. He is malnourished on a background of chronic pancreatitis, IRDM (unstable >1 week) and cirrhosis (no varices). He is unemployed and lives alone. He cannot afford to pay his rent and has few social supports.

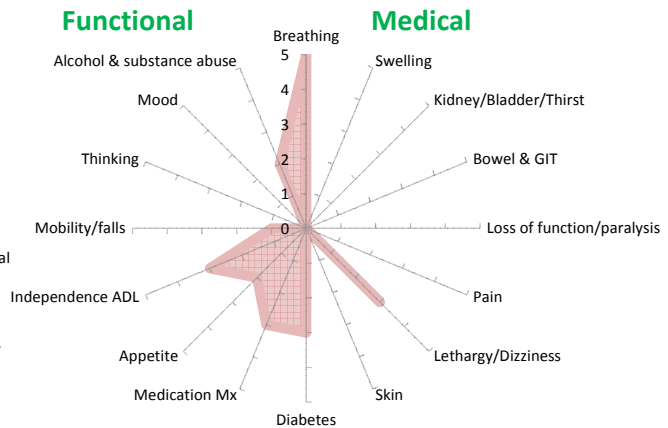
Following admission, despite improving respiratory status he develops worsening alcohol withdrawal on day 2. In discharge planning, the team is concerned about both his health risks and his ability to live independently on discharge but the patient isn't!

ID Team and Patient's assessment of their condition

Team Assessment (T-view)



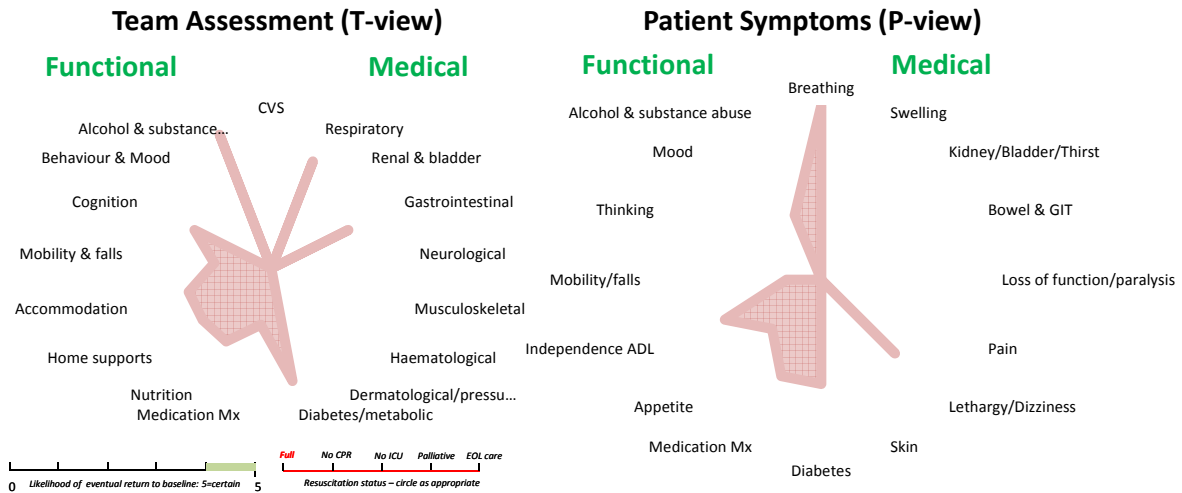
Patient Self Assessment (P-view) (symptom distress scores)



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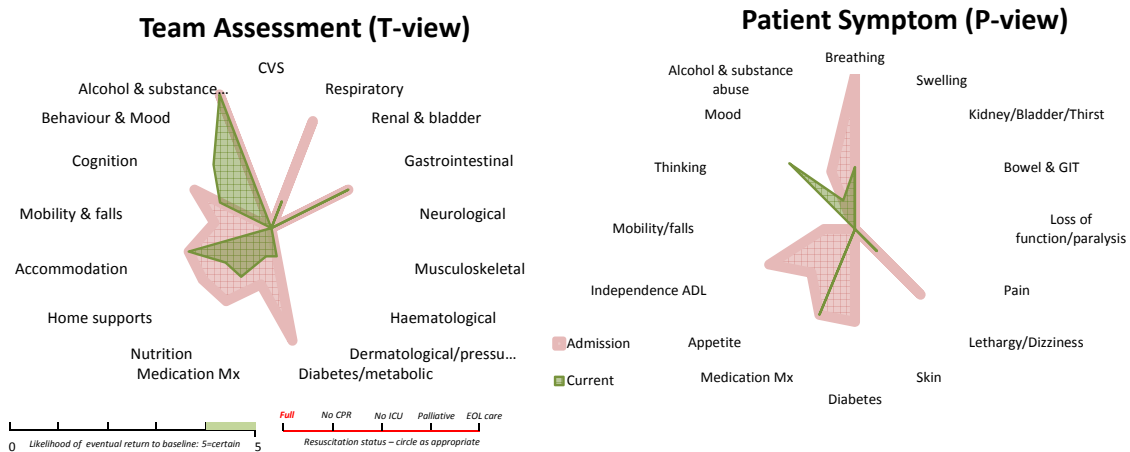
Team And Patient Alignment Score charts (Radial chart axes removed to improve visualisation)



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Documentation of change over time during admission



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Data collection methods

1. Paper

T-chart data – Registrar entry directly to paper T-view blank

P-chart data – patient self assessment (symptom distress) form with manual staff transfer to chart

Completed by patient themselves/relatives or non-team low social distance assistant (eg family, social worker or volunteer or nurse if required)

2. Digital database direct iPad tablet entry –

 with export to Excel macro to produce images

3. Incorporation directly into Cerner EMR

Patient self assessment form

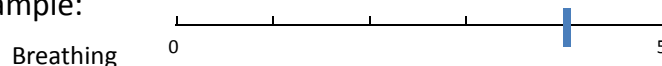
We want to make sure that we hear your concerns/wishes about your health. Could you or your family member complete the following 2 pages showing us your concerns about your health today?

Please rate each symptom or concern from good to bad using the numbers 0 to 5.

0=normal, good, no problem

5=worst ever, awful/very bad

Example:



This would indicate your breathing is distressing but not the worst you have ever had

Name: _____

Date: _____

Or patient label

- 1 **Rate all the items listed below according to whether they are causing you distress or concern: 0=normal, 1=annoying, 2=limiting, 3=severely limiting, 4=distressing, 5=worst ever**

Name:	Date
1 Your breathing? Any cough (if present)?	0 _____ 5
2 Tightness or swelling of skin	0 _____ 5
3 Passing water, Thirst	0 _____ 5
Concern about your kidneys	0 _____ 5
4 Constipation or diarrhoea Nausea and/or vomiting	0 _____ 5
5 Reduced strength or weakness Numbness or abnormal feeling	0 _____ 5
6 Pain If pain is present please say where:	0 _____ 5
7 Energy level Light headedness	0 _____ 5
8 Skin – itch, rash or ulcer	0 _____ 5
9 Diabetes	0 _____ 5

- 2 **Rate all the items listed below according to whether they are causing you distress or concern: 0=normal/nil/good, 1=annoying, 2=limiting, 3=severely limiting, 4=distressing, 5=worst ever**

Name:	Date
10 Your medications?	0 _____ 5
11 Your appetite? Weight loss?	0 _____ 5
12 Activities of daily living (self care)	0 _____ 5
13 Risk of falling	0 _____ 5
14 Your thinking or memory?	0 _____ 5
15 Your mood/anxiety or depression?	0 _____ 5
16 Alcohol or drug abuse?	0 _____ 5

Why did you come to the hospital/clinic? _____

What is your main concern about your health? _____

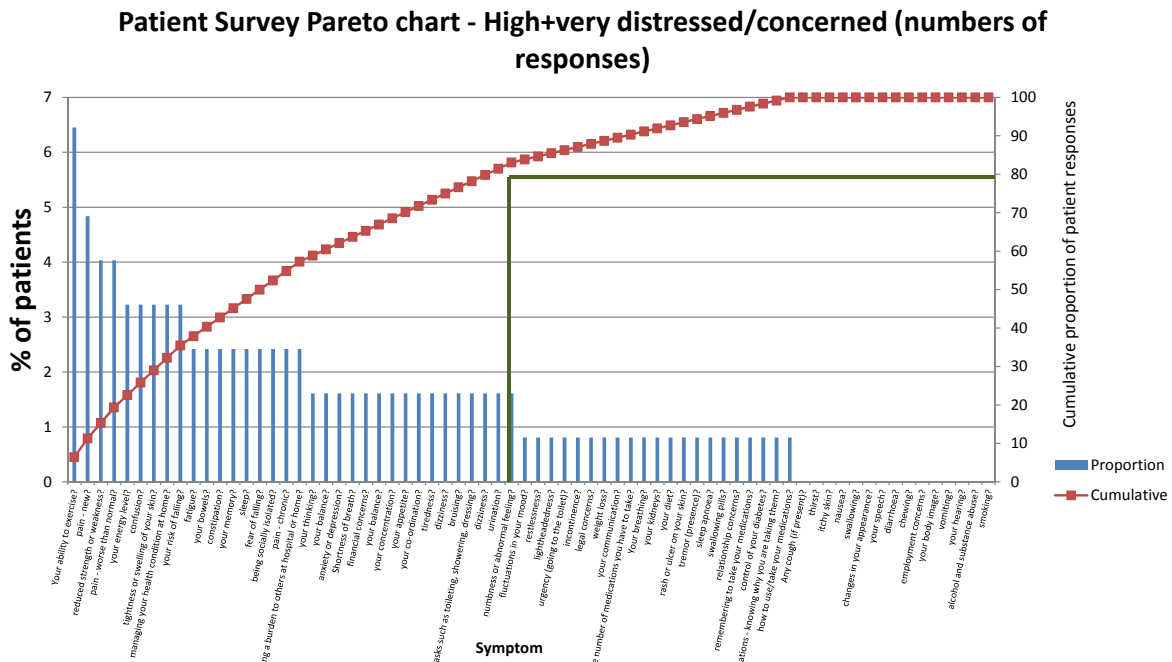
What is your main goal for this admission? _____

To what extent do you feel your wishes are being heard and respected by the doctors (circle)?

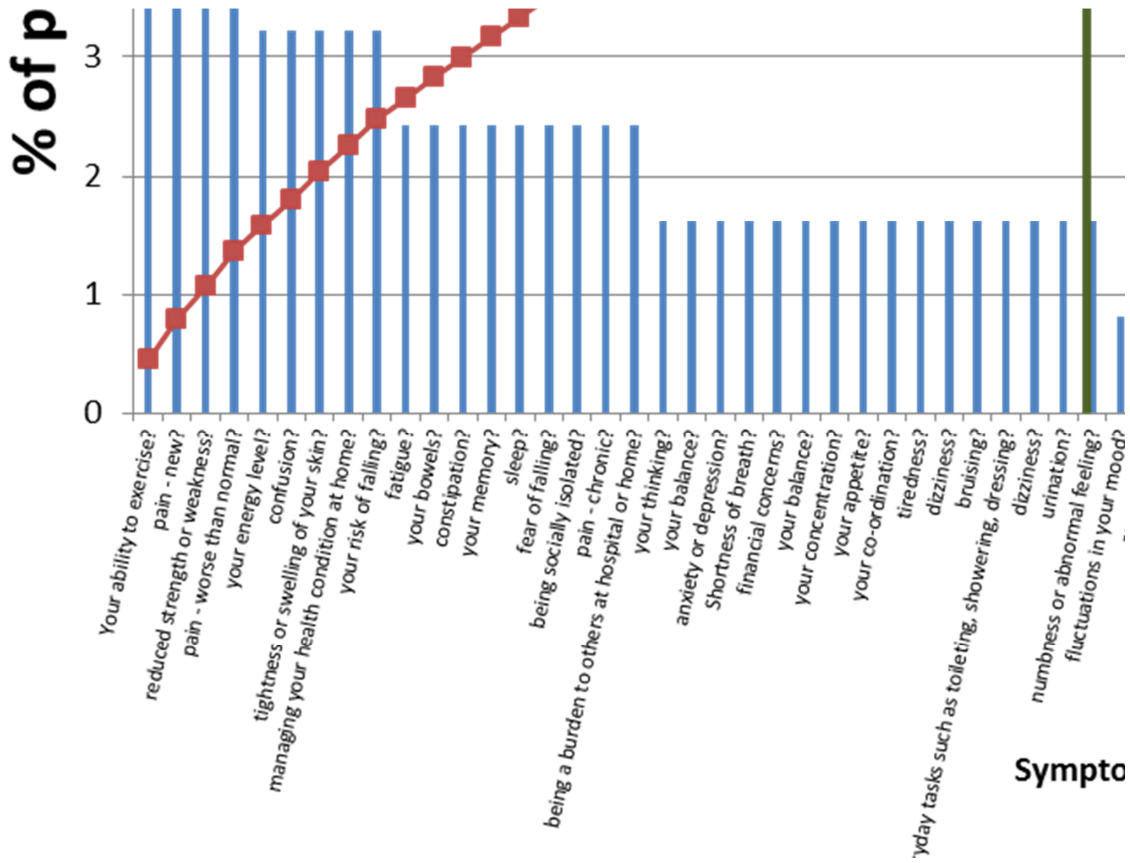
Not at all _____ Perfectly

I would like to ask this question: _____?

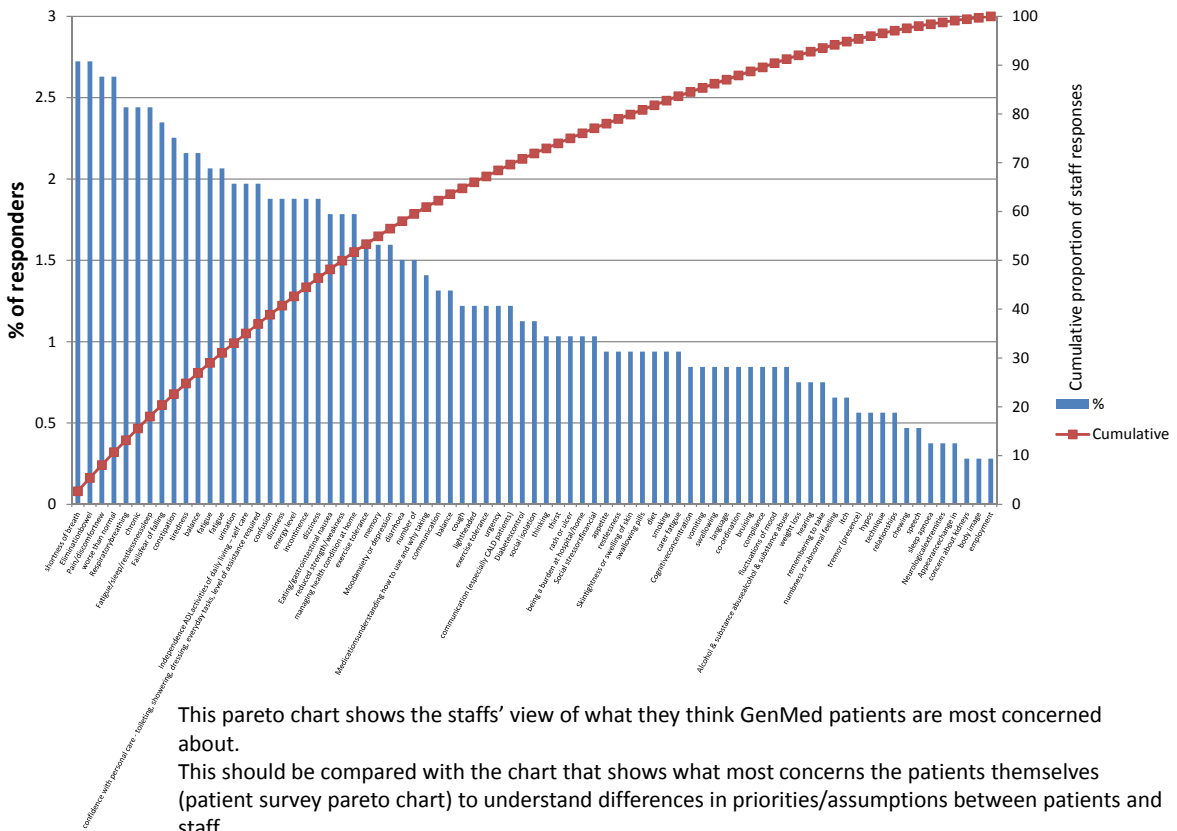
- Staff and patient survey of patient symptom distress
 - To establish common symptom profile for our patient cohort (acute GenMed ward at The Alfred)
 - And understand difference between staff and patient perceptions



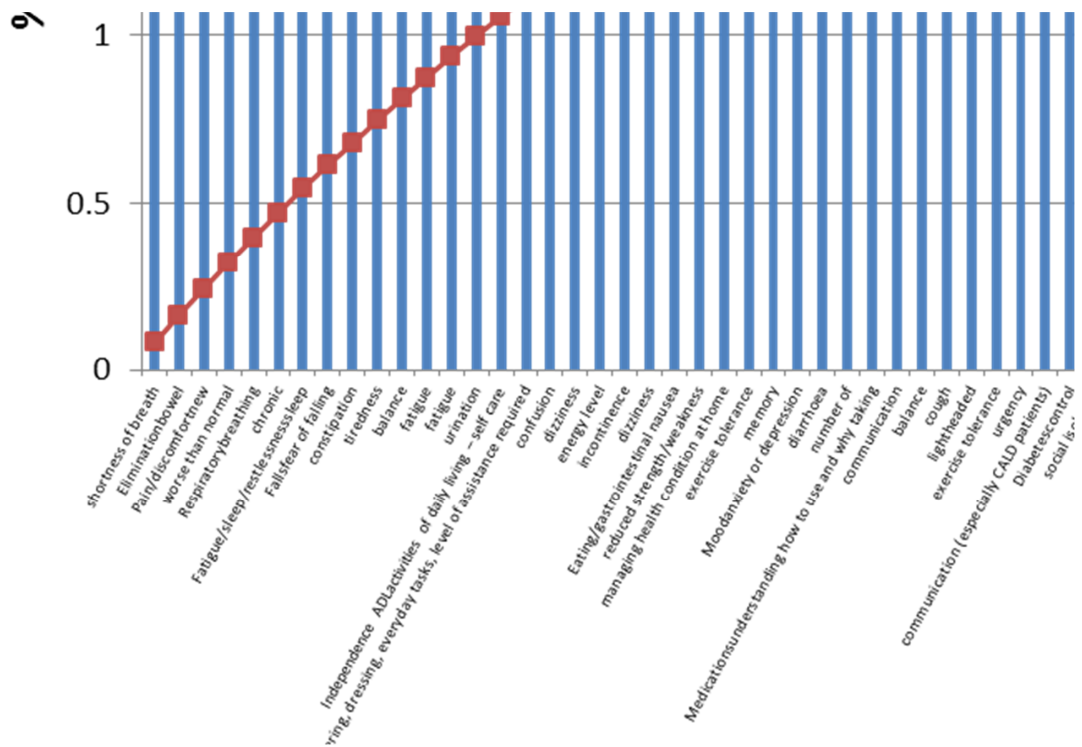
This Pareto chart shows which symptoms caused most distress (high or very distressed) for the patients surveyed. The Pareto principle here is relatively weak. I was hoping that 20% of symptoms would be responsible for 80% of the patient distress. In fact it seems that about half the listed symptoms account for 80% of the patient distress. It still helps us focus our exploration of symptoms on those that are most likely to be distressing for our patients, paying less attention to those on the right hand half of the symptom list. Interpretation is limited by the relatively small number of patients surveyed (28)



Staff survey pareto chart - always and very often, absolute numbers



This pareto chart shows the staffs' view of what they think GenMed patients are most concerned about. This should be compared with the chart that shows what most concerns the patients themselves (patient survey pareto chart) to understand differences in priorities/assumptions between patients and staff



Current status

- Development of TAPAS project on REDCaps database (in house Alfred Health server, linked with PAS) - demo
- Excel analysis – graphics and data - demo
- Weekly reporting dashboard

<http://projectredcap.org/>

- Data Import Tool
- Data Comparison Tool
- Field Comment Log
- File Repository
- User Rights and DAGs
- Data Quality

Help & Information

- Help & FAQ
- Video Tutorials
- Suggest a New Feature

If you are experiencing problems, please contact your REDCap administrator.

Admission Date/Time [admission_date]

You are completing this form for [firstname surname]

Patient Number [alfred_hospital_mrn]

Date and time of survey completion D-M-Y H:M
* must provide value

Does the patient give permission to complete this survey? Yes No
* must provide value reset

Who is completing this survey?
* must provide value

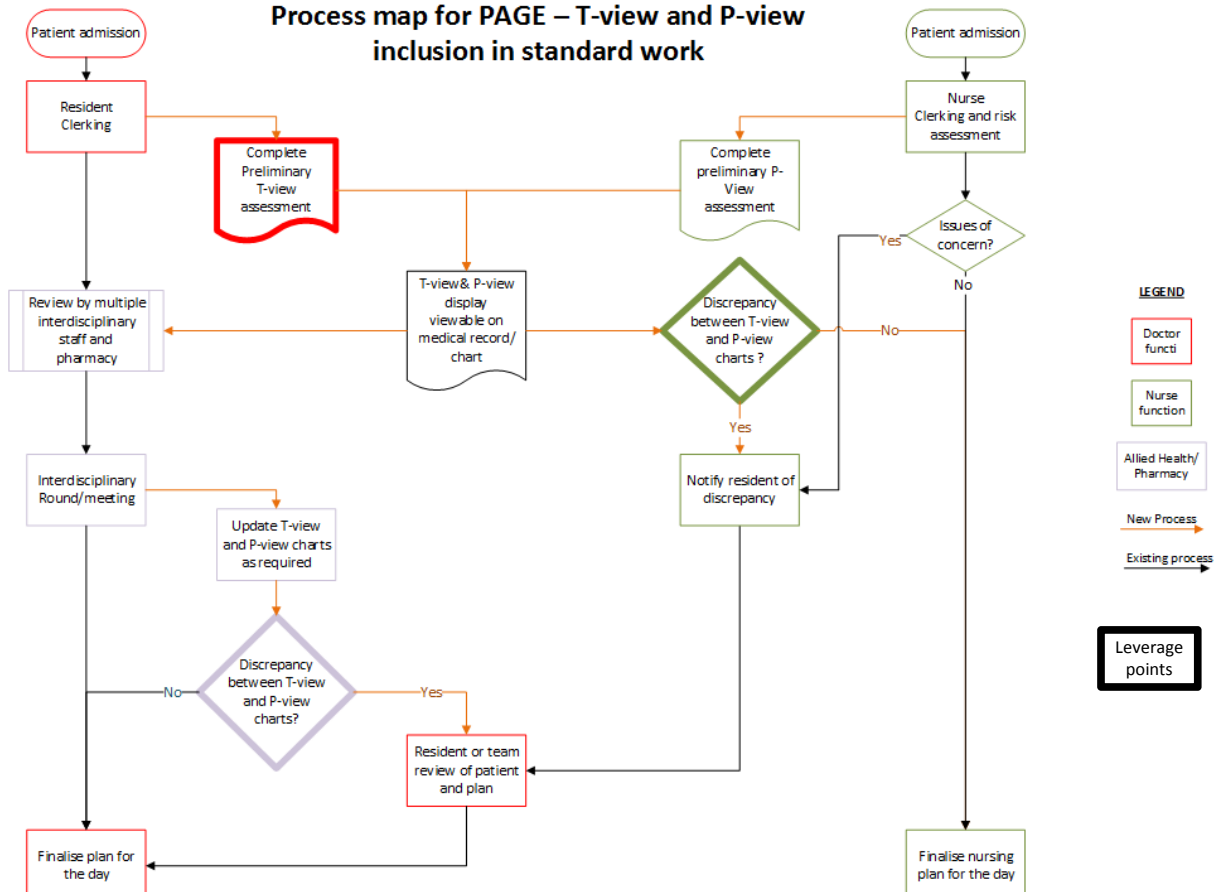
We want to make sure that we hear your concerns/wishes about your health. The following questions ask about physical symptoms that you might have. Please rate all the items listed below according to whether they are causing you distress or concern TODAY

	No distress, concern or normal	Mild distress, some concern	Moderate distress and concern	Very distressed and concerned	Highly distressed and concerned (worst ever)	Don't understand the question	7. Other
Chest pain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swelling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heart pounding, palpitations or atrial fibrillation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortness of breath?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any cough (if present)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your kidneys?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bladder discomfort or pain passing urine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accidents passing urine or incontinence?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nausea and/or vomiting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constipation or diarrhoea?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abdominal/tummy pain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Leverage point

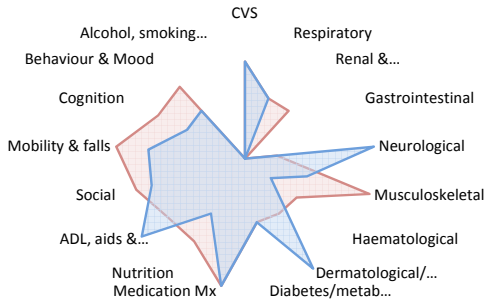
Incorporate daily comparison of the interdisciplinary team's consensus view *and* the patient's view of their condition into standard work (ie part of SIBR checklist).

Process map for PAGE – T-view and P-view inclusion in standard work

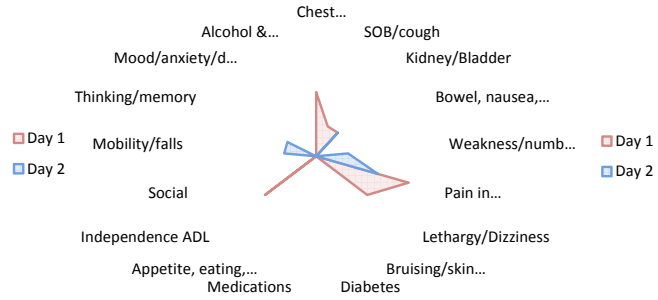


Pilot study results GenMed Alfred Health, ward 4GMU

Team Assessment (T-view)



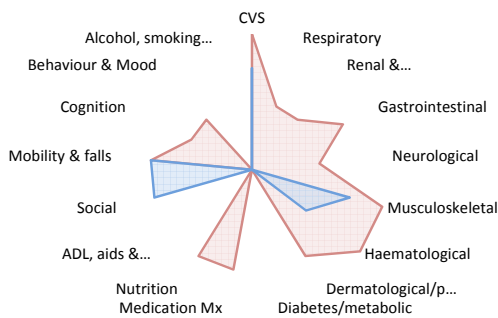
Patient Assessment (P-view)



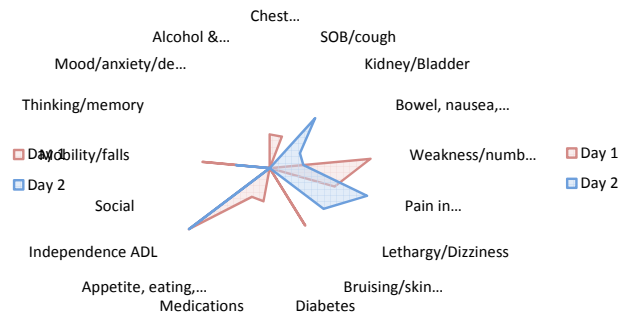
67F urosepsis, ARF due to dehydration/sepsis, T2DM OHGs, MVDisease including stroke, IHD (NSTEMI 2014) and PVD, Obesity (lap band), biliary sepsis 2014, GOERD, Fe defic anaemia Transfer to Caulfield day 2

	T-view medical	T-view functional	P-view Medical	P-view functional	T-P Medical	T-P functional
Day 1	18.0	23.5	9	2	9.0	21.5
Day 2	18.0	20.0	4	2	14.0	18.0

Team Assessment (T-view)



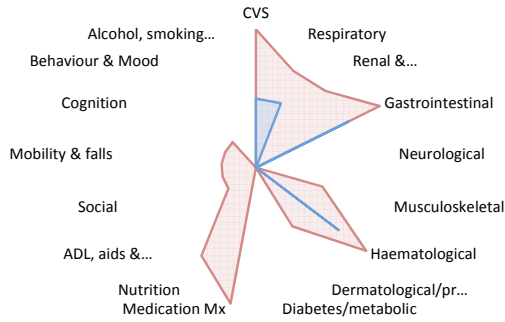
Patient Assessment (P-view)



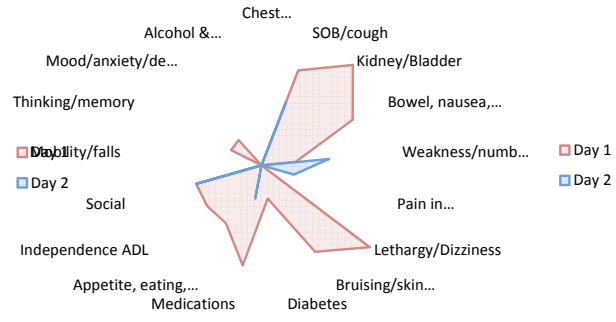
81yo male presents with R flank pain, rapid AF. Home alone, IADL. Dx pyelonephritis modified to T8/9 osteomyelitis. Also IHD, HT, OA

	T-view medical	T-view functional	P-view Medical	P-view functional	T-P Medical	T-P functional
Day 1	24.0	13.0	9	7	15.0	6.0
Day 2	8.0	6.0	9	4	-1.0	2.0

Team Assessment (T-view)



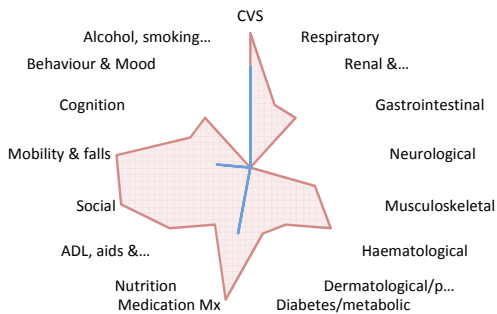
Patient Assessment (P-view)



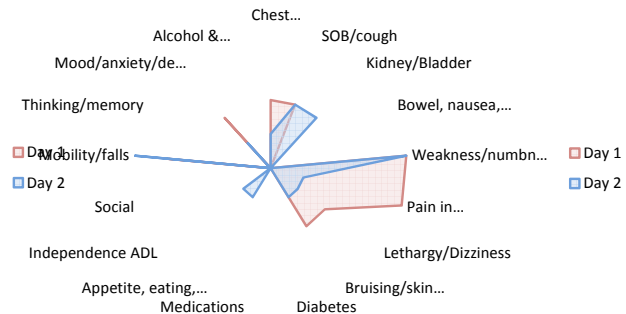
82F worsening SOB/OE, productive cough, green sputum, fever, oedema, malaena, lower abdo pain. Dx Anaemia (known GI telangiectasia) and pulmonary oedema, CREST, limited systemic sclerosis, stable diabetes, AF. Discharged for OP endoscopy/pill cam day 3.

	T-view medical	T-view functional	P-view Medical	P-view functional	T-P Medical	T-P functional
Day 1	22.0	12.0	19	11	3.0	1.0
Day 2	10.0	0.0	5	3	5.0	-3.0

Team Assessment (T-view)



Patient Assessment (P-view)

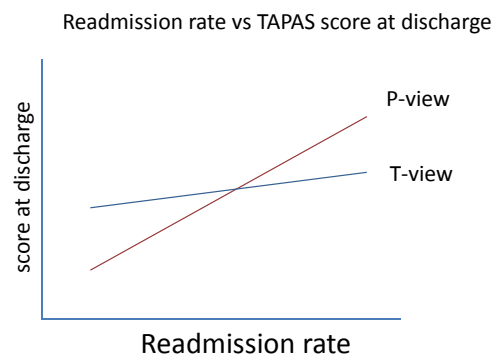
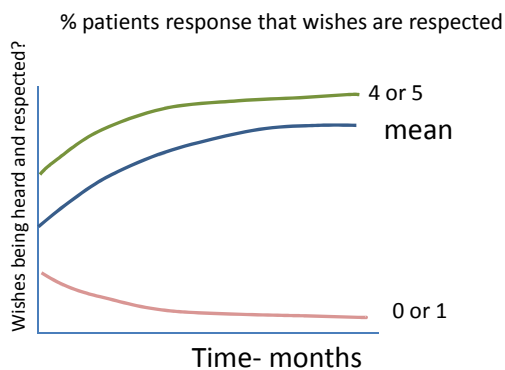
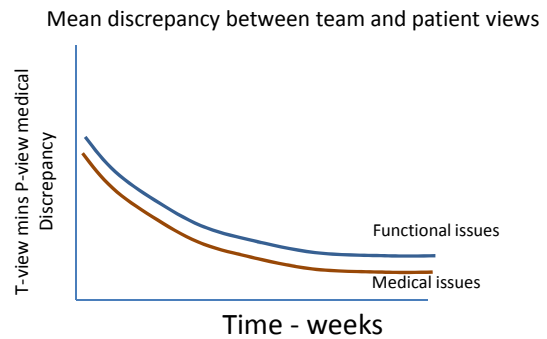
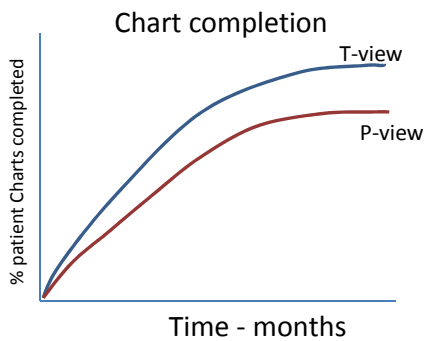


79F Recent IP with unstable angina and ADHF and aortic stenosis readmitted with angina and orthostatic hypotension. Possibly not cardiac, for trial PPI, reduced dose of irbesartan/HCT. Chronic back pain, T2DM, COPD, HT, CKD, AAA

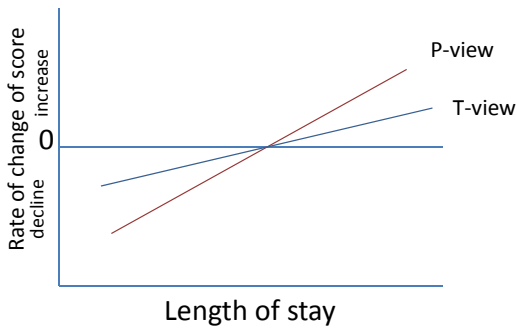
	T-view medical	T-view functional	P-view Medical	P-view functional	T-P Medical	T-P functional
Day 1	17.0	21.0	16	5	1.0	16.0
Day 2	3.0	3.0	12	7	-9.0	-4.0

Planned outcome measures GenMed Alfred Health, ward 4GMU June 2015

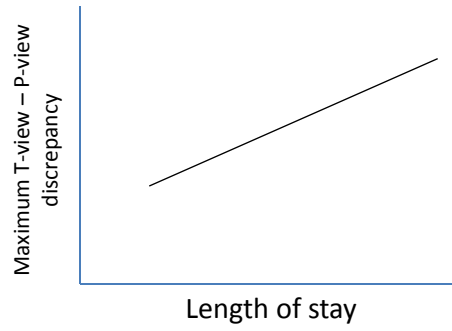
Planned measures



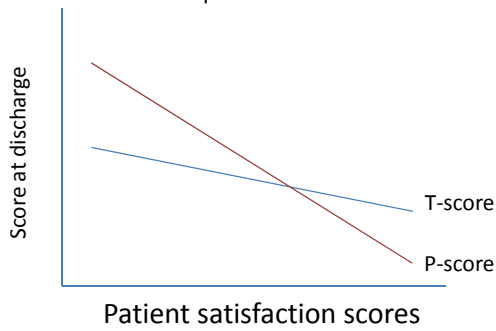
Length of stay vs rate of change of TAPAS score



Length of stay versus T-view – P-view discrepancy



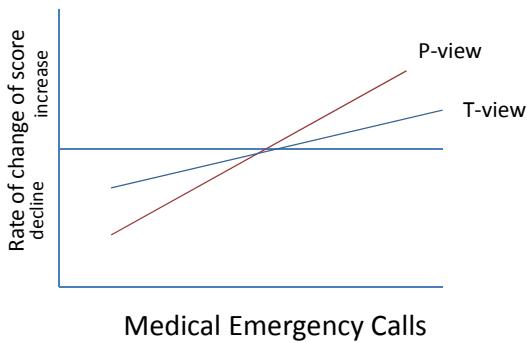
TAPAS scores at discharge vs patient satisfaction



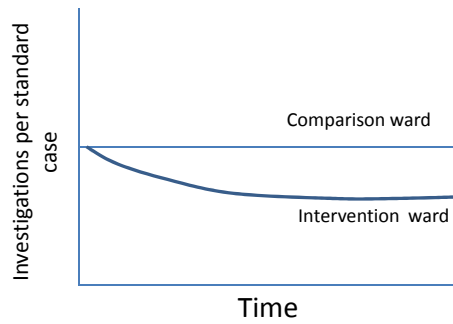
Patient satisfaction score vs maximum TAPAS score discrepancy during the admission



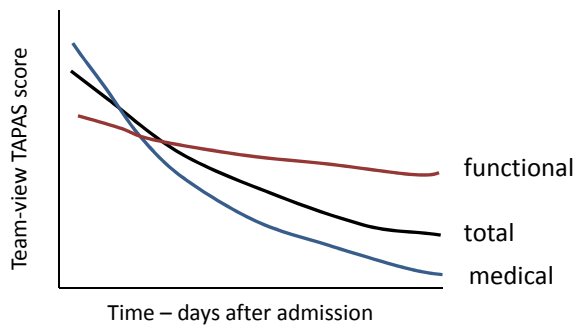
MET calls vs rate of change of TAPAS score



Effect of TAPAS intervention on resource utilisation



Rate of resolution of TAPAS scores



Balance measures

- Staff satisfaction
- Medical investigations performed
- Proportion of patients declining to participate
- Duration of interdisciplinary bedside rounds (SIBR) per patient

Conclusions

1. TAPAS T-view and P-view charts that show distinguishable features between complex patients can be generated in a real clinical environment.
2. Discrepancies between T-view and P-view charts may highlight unmet patient concerns.
3. Changes in T-view and P-view charts with time appear to reflect patient progress.
4. The utility of this approach remains to be evaluated

Potential application of TAPAS

1. Patient satisfaction (real time, more objective measure)
2. Readmission
3. Length of Stay
4. Improved global patient assessment
5. Resource management at local ward level
6. Understanding casemix
7. Earlier detection of deterioration
8. Baseline status for chronic patients.

Acknowledgements

Alfred Health/Monash University

- Sara Holton – Health Science researcher
- Aimee Daley – GenMed QI and research nurse
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- Dev de Silva – Social worker and Allied Health advanced practitioner
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- Amy McKimm – redesign lead Alfred Health
- Marg Way – quality lead Alfred health
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- Ann Read (use of radar charts in project work)
- Dr Bill Beninati and staff of LDS ICU (pilot site)
- Andrew Knighton – Intermountain analyst
- Patzy Vanderberg – secretarial support