clinical epidemiology and
health service evaluation unit

Centre of
Research Excellence
in Patient Safety

Turning an Indicator Into Action:
The General Medical Indicator Program (GMIP)

Caroline Brand

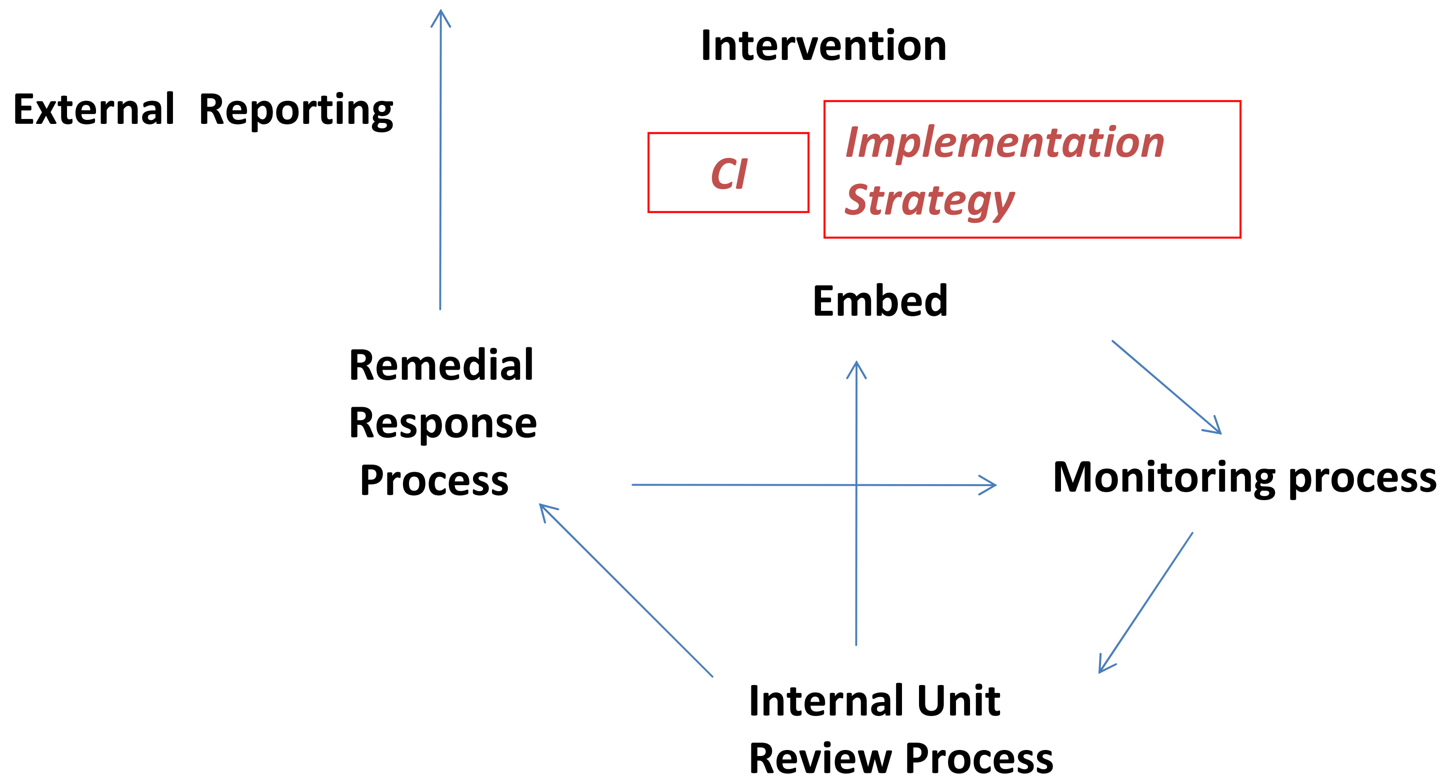
CREPS Implementing Quality Indicators
Sydney June 11th 2009

Implementation made easy?

- Intervention is highly desirable
- Implementation is mandated
- Setting is receptive
- Incentives are great enough

YOU DON'T NEED TO BE HERE?

Implementing what intervention?



GMIP Implementation Process

- 2005 Development of the GMCI set
- 2006 Pilot implementation & evaluation
- 2007-8 Program refinement
- 2008-9 Second phase implementation, ongoing monitoring and feedback

Brand C et al IMJ In Press

Challenges for the GMIP

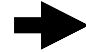
- Not mandated
- Structural system constraints
  - workforce constraints
  - financial constraints
  - Lack of access to validated tools for measuring performance, especially for non procedural physicians
  - Lack of integrated data systems for documenting & monitoring
- Hierarchical Factors
  - Clinician-executive relationship issues - “trust” ?
- Collegial factors
  - Traditional horizontal accountability model
  - Stages of change
  - Professionalism, self motivated desire to improve

Existing strengths

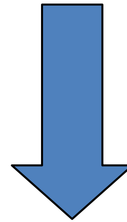
- Collaborative history between CEHSEU & general Medicine
- Physician leadership in improving quality of care
  - University affiliation
    - academic interest
    - Strong teaching focus
- Expertise in quality improvement, implementation & evaluation methods
- Organisational support for quality improvement

GMCI Development
Phase 1: 2005

- Guidelines
- ACHS
- ACOVE
- AHRQ



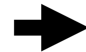
Seek input for target areas



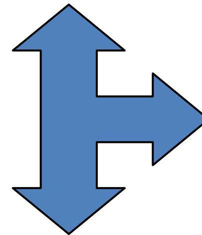
- cognition
- CHF
- COPD
- *IHD*
- *pneumonia*
- diabetes
- *central venous lines*
- VTE
- LTF
- *Vaccinations*
- continuity of care

- PHO
- Importance for teaching
- Relevance to GMU
- Measurement attributes

Feasible to implement

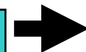


Apply prioritisation filter



- cognition
- CHF
- COPD
- diabetes
- VTE
- LTF
- continuity of care

- Review Literature
- Iterative discussion



Summarise and Define CI set

Users: Perceived importance of GMCI

Indicator	Not important		Somewhat important		Important		Very important	
	n	%	n	%	n	%	n	%
Thrombo-embolus prophylaxis	0	0	2	3	27	45	28	47
Cognitive status	1	2	7	12	32	53	17	28
CHF & ACE inhibitors	0	0	5	8	26	43	26	43
CHF & β Blockers	0	0	5	8	27	45	25	42
Cardiac Rehabilitation	1	2	10	17	30	50	10	17
COPD rehabilitation	0	0	6	10	30	50	21	35
Diabetes & Lower Limb assessment	2	3	7	12	35	58	13	22
Diabetes & ophthalmology referral	1	2	10	17	25	42	21	35
LTF documentation	1	2	13	22	26	43	17	28
Vit D	3	5	11	18	24	40	19	32
Bone protective treatment	1	2	7	12	21	35	27	45
Written care plan	1	2	8	13	21	35	27	45

GMIP
Pilot Implementation
2006

Develop an implementation framework

- Develop a program rationale
- Link to evidence based implementation strategies
- Link to impact evaluation strategies and measurement tools

Greenhalgh T *Milbank Q* 2004

Grol R. BMJ 1997

Wensing M & Grol R. *Br J Gen Pract* 1998

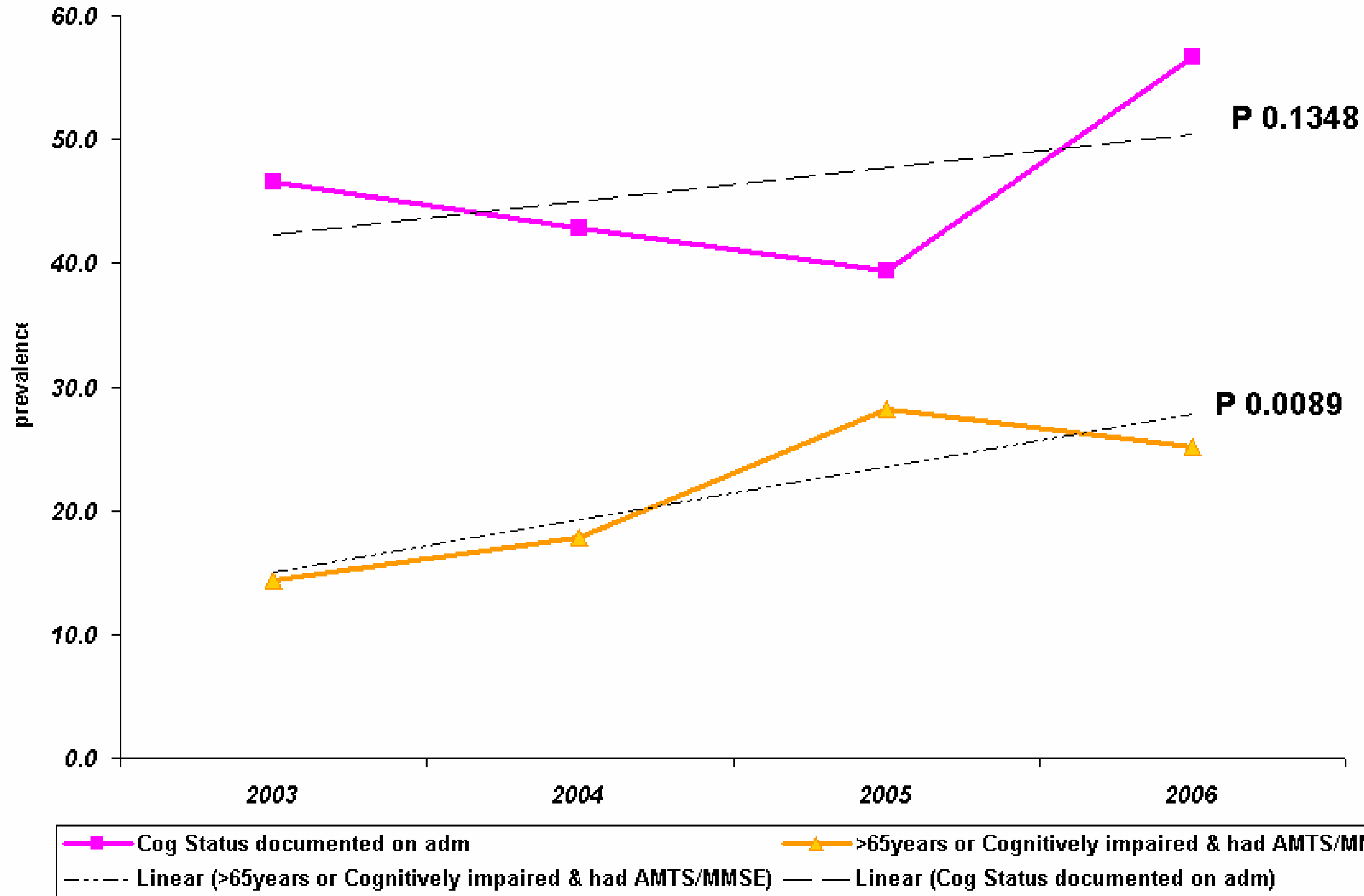
Brand C et al In Press IMJ 2009

NICS. http://www.nhmrc.gov.au/nics/

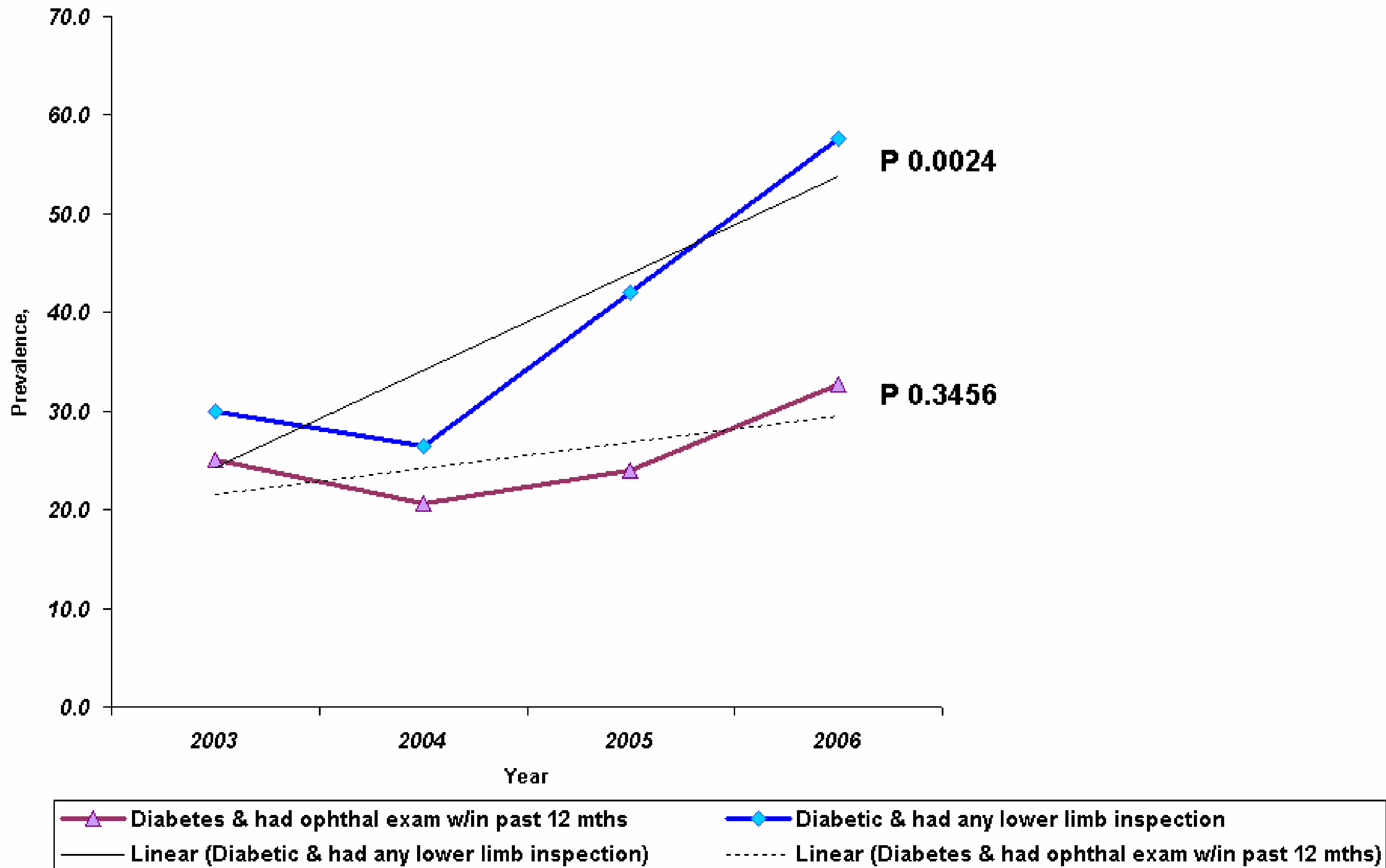
User perception of implementation strategies

Strategies and resources		Not at all useful		Somewhat useful		Very useful		Unsure	
	N	N	%	N	%	N	%	N	%
Posters	36	12	33.3	16	44.4	4	11.1	4	11.1
Reminder cards	35	6	17.1	10	28.6	17	48.6	2	5.7
Registrar pack	19	7	36.8	4	21.1	3	15.8	5	26.3
Weekly team audits	35	7	20.0	13	37.1	11	31.4	4	11.4
Project officer	25	9	36.0	6	24.0	3	12.0	7	28.0
Orientation	20	6	30.0	3	15.0	9	45.0	2	10.0
Grand round	33	2	6.1	16	48.5	14	42.4	1	3.0
Peer review /unit meetings	37	2	5.4	14	37.8	20	54.1	1	2.7
Informal staff discussions	42	2	4.8	15	35.7	23	54.8	2	4.8

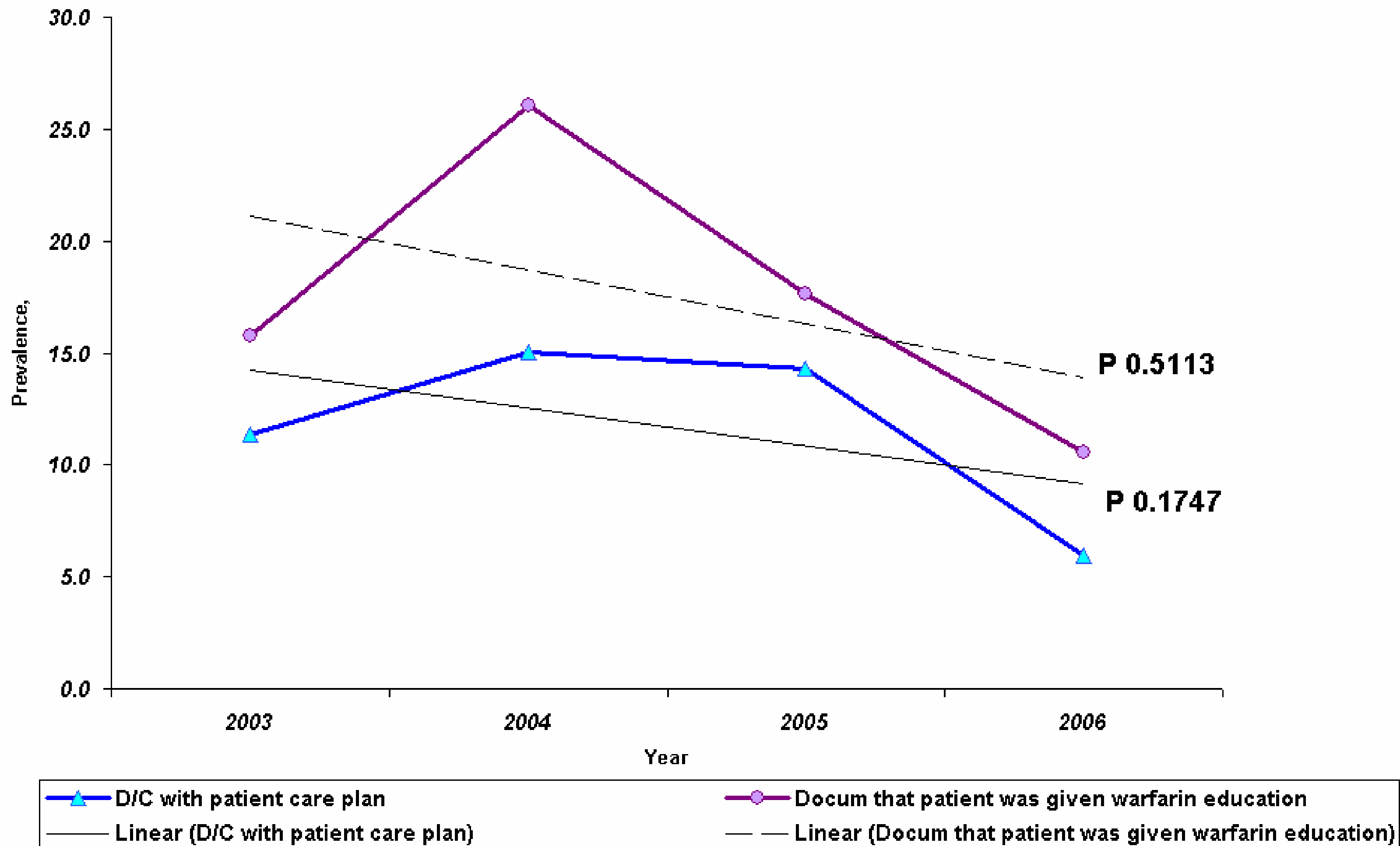
Impact on CI adherence: Cognition



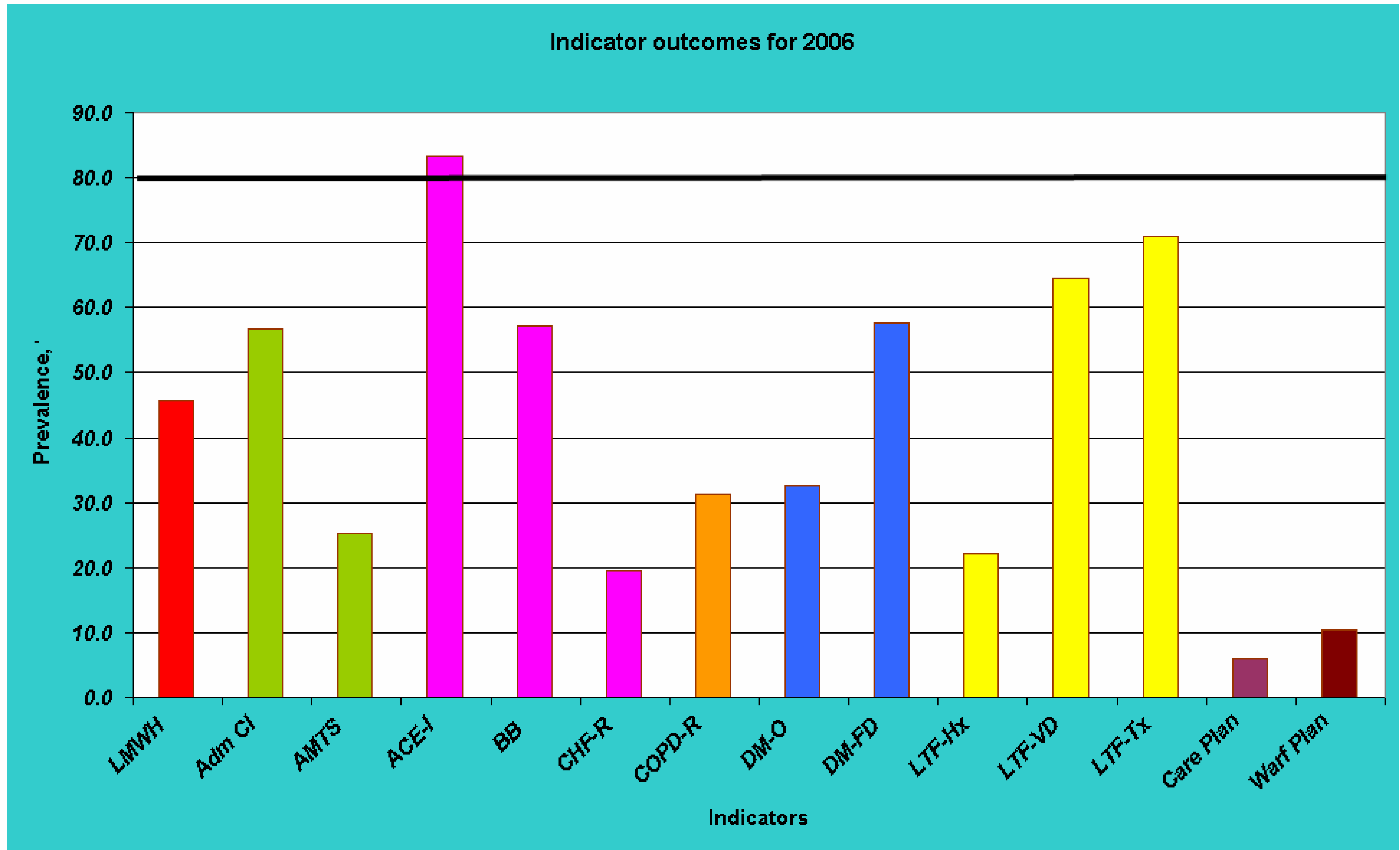
System Influences: Diabetic Foot Guidelines



System constraints: Patient Care Plans



Adherence to CI, November 2006



Implementation Phase 2: 2008/9

- Integrative tools
- Monitoring and feedback
- Embed in unit and organisational governance
- Using the data

Admission Sheet

THE ROYAL MELBOURNE HOSPITAL

MEDICAL EXAMINATION SHEET (2)

Medical Unit: ________ Ward: ________

Date: ________________

SURNAME | UR
GIVEN NAME | DOB | SEX
ADDRESS
SUBURB | POSTCODE | TELEPHONE

Systems Examination:

Investigations:

MEDICAL EXAMINATION

IP 5K

THE ROYAL MELBOURNE HOSPITAL

MEDICAL EXAMINATION SHEET (3)

Medical Unit: ________ Ward: ________

Date: ________________

SURNAME | UR
GIVEN NAME | DOB | SEX
ADDRESS
SUBURB | POSTCODE | TELEPHONE

Impression / Provisional Diagnosis:

Differential Diagnosis:

Management Plan (incl treatment, referrals, review timeline):

Expected Date of Discharge:

Signature *Name (Print)* *Designation* *Date / /*

THE ROYAL MELBOURNE HOSPITAL

MEDICAL ADMISSION HISTORY SHEET (1)

Medical Unit: ________ Ward: ________

Date: ________________

SURNAME | UR
GIVEN NAME | DOB | SEX
ADDRESS
SUBURB | POSTCODE | TELEPHONE

Consultant HMO Date Time

Presenting Complaint and Duration:

Current Active Problems:

MEDICAL ADMISSION HISTORY

IP 5K

THE ROYAL MELBOURNE HOSPITAL **Medical Indicators** **Discharge Checklist**	SURNAME	URN
	GIVEN NAME / DOB / GENDER	
	ADDRESS	
	SUBURB / POSTCODE	TELEPHONE

GENERAL MEDICINE CLINICAL INDICATORS PROGRAM

Admission Date / / **Discharge Date:** / / **Medical Unit:**

See reverse side for contraindications (C/I) & exclusions (Excl). Please record these in the medical record.

GMCI-1 VTE Prophylaxis –Assess for ALL patients	
Patient without C/I or exclusions on admission, e.g. on warfarin, was prescribed thrombo-prophylaxis within 24 hours of admission	Yes☐ No☐ C/I or Excl☐
GMCI-2 Cognitive status –ALL patients	
2a A statement about Cognitive Status was documented on admission	Yes☐ No☐
Patient is ≥ 65 years Yes☐ No☐ *If No, go to GMCI-3* ***2b* If YES,** formal cognitive screening was performed (AMTS / MMSE)	Yes☐ No☐ Excl☐
GMCI-3 CHF *Patient has CHF- Yes ☐ No ☐ If No, go to GMCI-4*	
3a ACE inhibitor / A2Receptor antagonist has been prescribed ***3b*** B blocker therapy has been prescribed	Yes☐ No☐ Excl☐ Yes☐ No☐ Excl☐
3c The patient has been referred for cardiac rehabilitation	Yes☐ No☐ Previously referred☐ Excl☐
3d Patient with CHF & Atrial fibrillation has warfarin prescribed	Yes☐ No☐ Excl☐ No AF☐
GMCI-4 COPD *Patient has COPD- Yes ☐ No ☐ If No, go to GMCI-5*	
Patient has been referred to pulmonary rehabilitation	Yes☐ No☐ Previously referred☐ Excl☐
GMCI-5 Diabetes *Patient has Diabetes- Yes ☐ No ☐ If No, go to GMCI-6.*	
5a Patient has been referred for ophthalmology review (1 – 2 yearly) ***5b*** Lower limb assessment for diabetic foot disease was performed	Yes☐ No☐ Excl☐ Yes☐ No☐
GMCI-6 25OH Vitamin D management - All patients ≥ 65 years *Patient is ≥ 65? Yes☐ No☐* *If No, go to GMCI-7*	
6a 25 OH Vitamin D Level assessed ***6b*** Patient with 25 OH Vitamin D deficiency is prescribed treatment	Yes☐ No☐ Excl☐ Yes☐ No☐ Not Applicable☐
GMCI-7 Low Trauma Fracture management - All patients > 50 years *Patient is ≥ 50? Yes☐ No☐* *If No, sign off and complete last section.*	

MEDICAL INDICATORS DISCHARGE CHECKLIST

Contraindications (C/I) and exclusions (excl) for indicators. (If applicable, document in medical record)

VTE Prophylaxis

Patients are excluded -

- if on warfarin or with heparin infusion insitu
- with active bleeding or bleeding tendencies
- with active peptic ulcer
- who are fully ambulant
- who are long term bed bound
- who have refused therapy
- with previous Adverse Drug Event (ADE)
- with other C/I - (should be documented)

Cognitive status

No exclusions for documentation of cognitive status on admission

Cognitive assessment: All patients ≥65 years should have formal assessment performed at admission or at the earliest appropriate time.
Patients with a change in cognition should be monitored during admission.
(Other tools are available if aphasia or language difficulties are present)
Exclusions: -patients <65 years.

CHF

Exclusions and C/I for ACE inhibitor use:
Patient has -

- Hypotension
- Developed a cough
- Renal dysfunction
- Electrolyte abnormalities eg. hyperkalaemia
- Severe aortic stenosis
- Bilateral renal artery stenosis (unilateral if single kidney)
- Previous ADE

Exclusions and C/I for β blocker use:
Patient has -

- Severe airways obstruction
- R ventricular failure with pulmonary hypertension
- Cardiac conduction disease eg. sick sinus syndrome, sinus bradycardia, 2nd or 3rd degree AV block
- Systolic BP <100mmHg
- Previous ADE

CHF rehabilitation Exclusions:
Patient refusal Previous attendance Terminal CHF Other C/I (document in med record)

CHF & AF: exclusions and contraindications to warfarin use:
Falls risk Bleeding risk Active peptic ulcer Previous ADE Other C/I (document in med record)

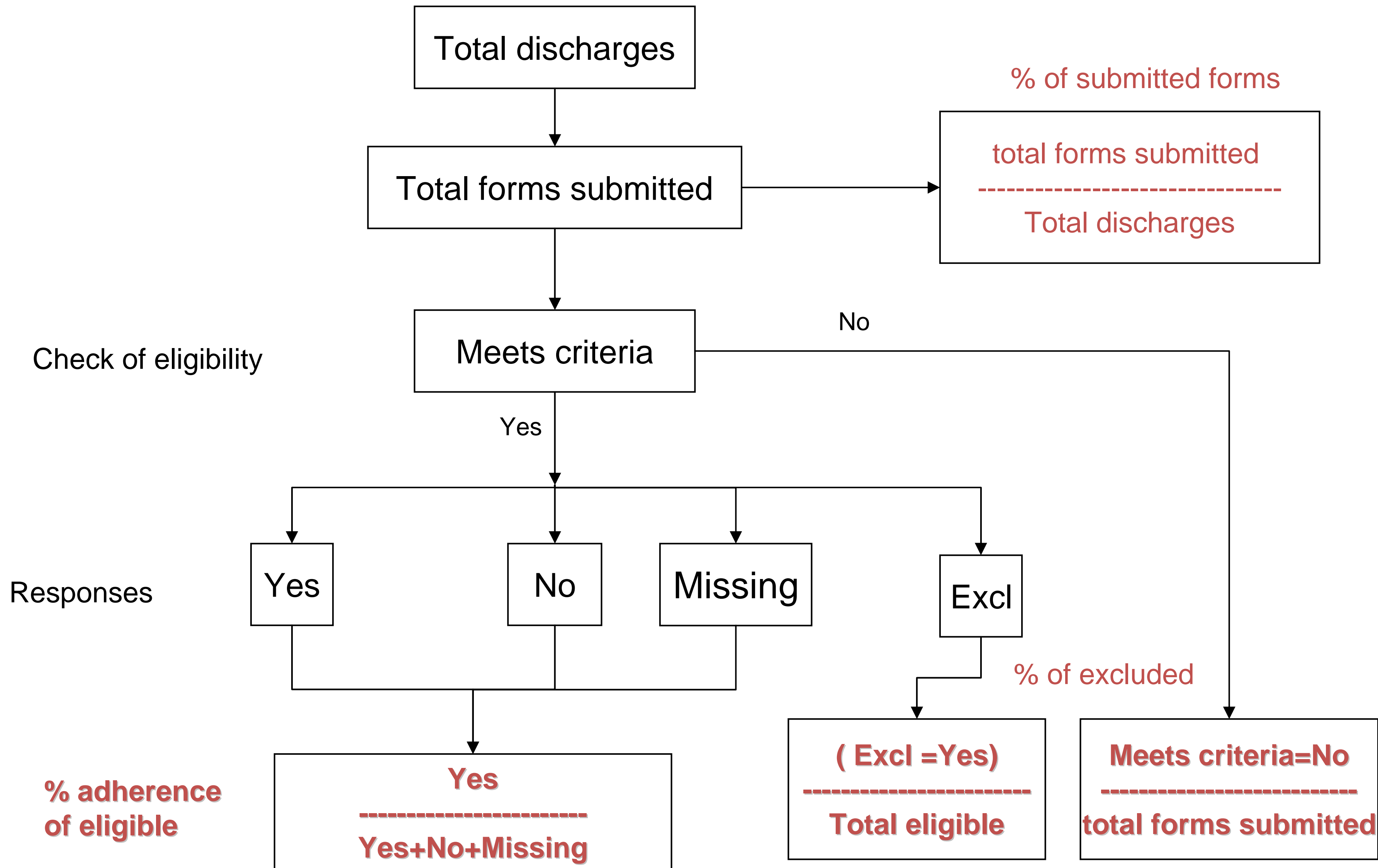
COPD rehabilitation Exclusions:
Patient refusal Previous attendance Terminal COPD Other C/I (document in med record)
*Continuing to smoke or NESB do not exclude patient from referral/rehabilitation.

Diabetes

Ophthalmology assessment exclusion: previous assessment within last 1 – 2 years

Limb inspection: – at **each** admission- check pedal pulses, monofilament or other sensation check, general limb inspection for ulcers, tinea, skin integrity etc
If Diabetic Foot Disease present –assess at least 3 monthly

GMIP: Data analysis algorithm



GMIP Report

	MUZ	MUY	MUV	MUW	Total
Total discharges					
Total forms submitted					
Total forms completed (without missing data)					

Table of indicators

All results show % of adherence for eligible patients (i.e. who have no exclusion criteria)

Indicator	MUZ	MUY	MUX	MUW
DVT prophylaxis given				
Documentation of Cog status on admission				
AMTS/MMSE performed on patients 65 & over				
CHF & discharged on ACEI/A2RA				
CHF & discharged on β-Blocker				
Referral to CHF rehabilitation organized				
CHF & AF discharged on warfarin				
Referral to COPD rehabilitation organized				
Diabetics referred to ophthalmologist				
Lower Limb Assessment performed				
Vit D level assessed				
Treatment prescribed for Vit D deficiency				
Discharged on LTF drugs (& history of LTF)				

CEHSEU clinical epidemiology and health service evaluation unit

General Medical Indicators Project (GMIP) Collaborative Database

MELBOURNE H

URNumber: Discharge Date: Discharge Unit: MU1 MU2 MU3 MU4 Age 68

DVT prophylaxis - Assess for All patients

Patient without C/I or exclusions on admission, e.g. on warfarin, was prescribed thrombo-prophylaxis within 24 hours of admission Yes No Excl

Cognitive status - All patients

A statement about Cognitive Status was documented on admission Yes No

Formal cognitive screening was performed (AMTS/MMSE) Yes No Excl

CHF Yes No

ACE inhibitor / A2Receptor antagonist has been prescribed Yes No Excl

B blocker therapy has been prescribed Yes No Excl

The patient has been referred for cardiac rehabilitation Yes No Previously referred Excl

Patient with CHF & Atrial fibrillation has warfarin prescrib Yes No Excl No AF

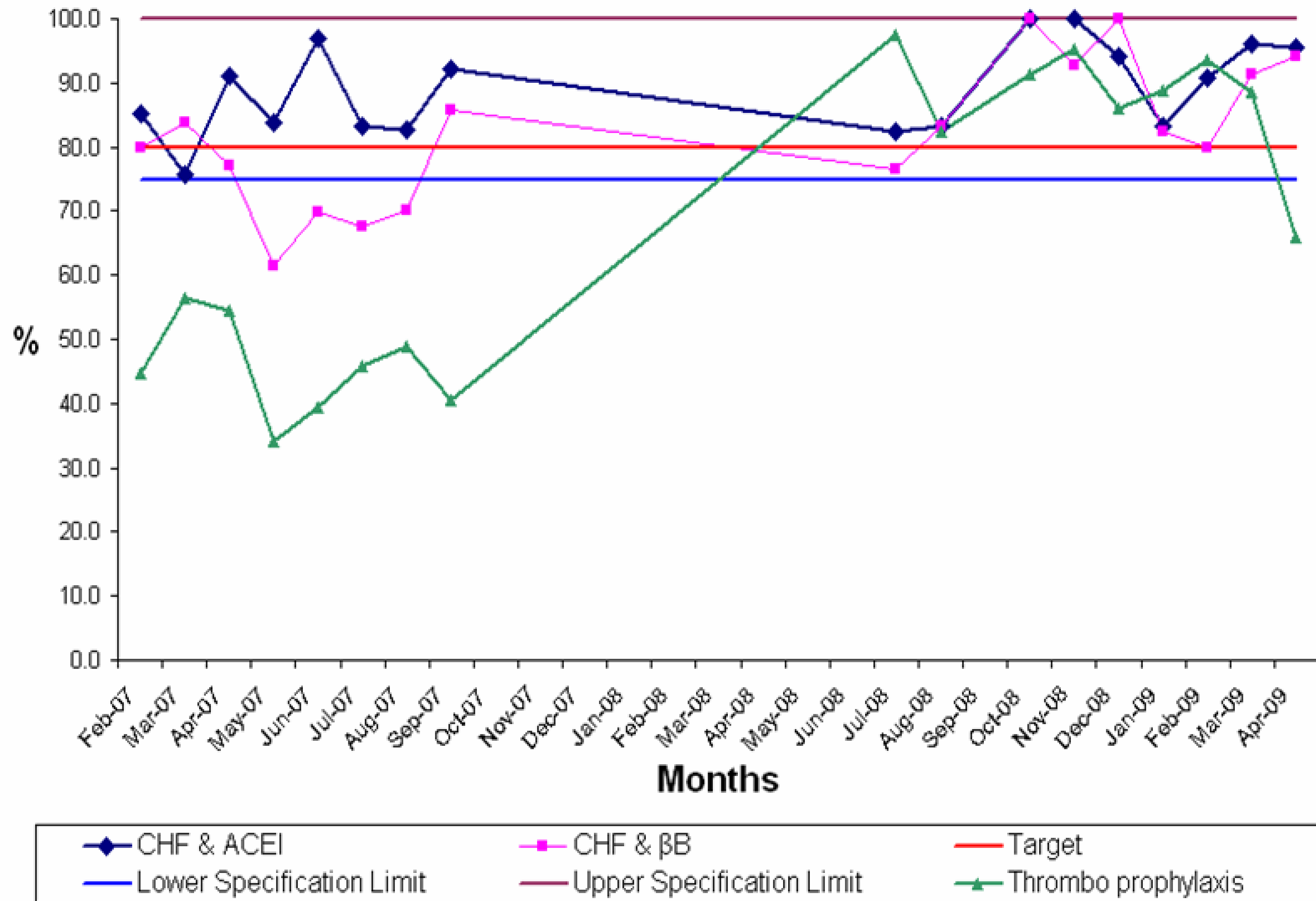
COPD Yes No

Diabetes Yes No

25OH Vitamin D management

25 OH Vitamin D Level assessed Yes No Excl

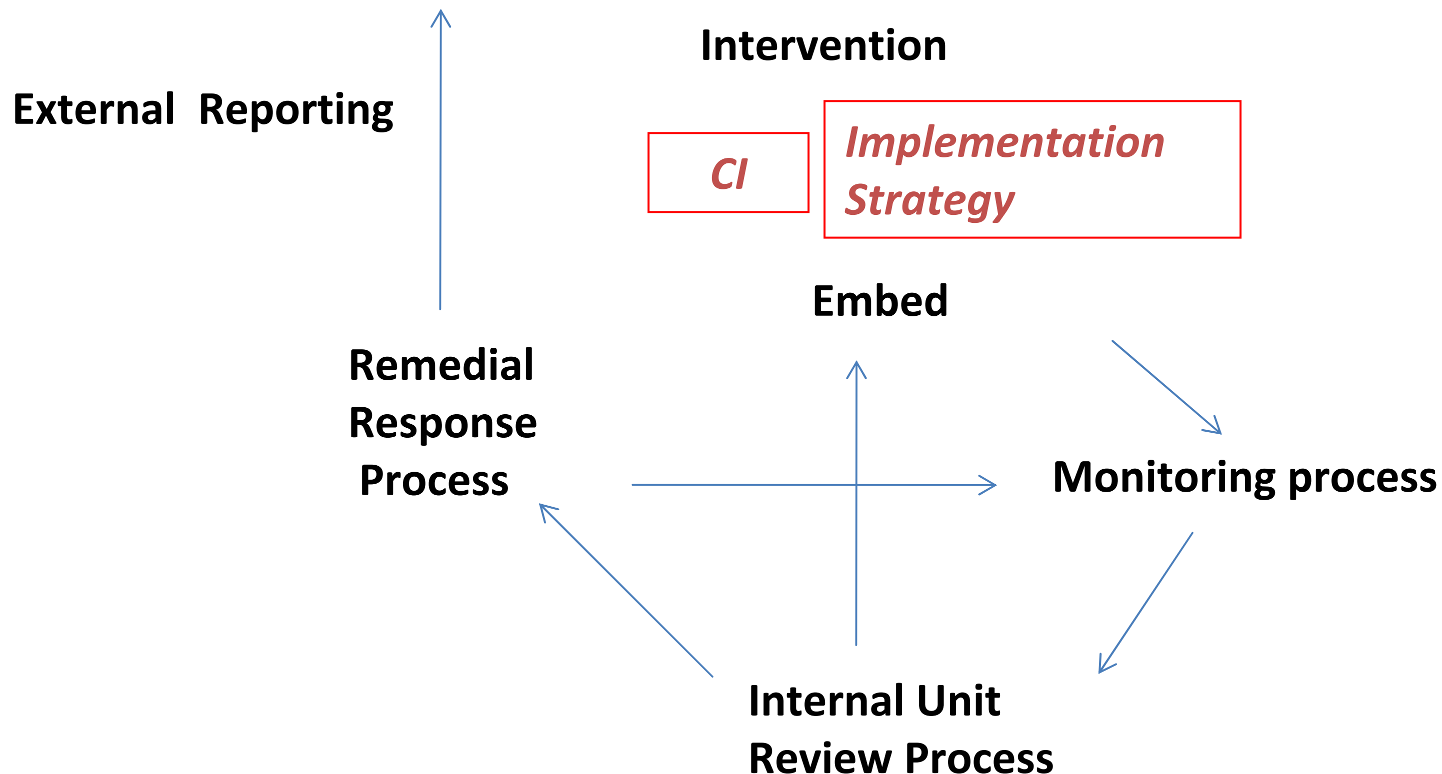
VTE & CHF CI: 2007/8-2008/9



GMCI in a comprehensive performance framework

Type of indicator: impact on implementation

Governance: Unit – Divisional- Organisational - External



Lessons about implementing process CI

- Implementation that involves a many to many behavioural change process is more difficult than a one to many process - that is more difficult than a many to one process!
- Support from key clinical leaders and managers does not guarantee implementation success
- Administrative support does not guarantee success
- Contextual factors can be difficult to understand, harness and control
- Early user support may not predict longer term sustainability.

Where to from here

- *There needs to be a strong commitment to developing infrastructure to support integration of CI into routine clinical data collection.*
- *We need to strengthen internal governance*
- *The role of incentives need to be investigated*

Acknowledgements

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