1. PROJECT INFORMATION

Project Title	Depression screening in patients with one or more long-term conditions – Tilbury pilot

Project Sponsor	Ian Wake

Cabinet Member	Councillor Halden

Project Manager	

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2. PURPOSE OF THIS PROJECT

People with long-term physical health conditions are some of the most frequent users of health services. Many people with a [physical health] long-term condition (LTC) also have a mental health (MH) problem. Together these lead to poorer health outcomes and reduced quality of life. People with LTCs and co-morbid MH problems die earlier than those without MH problems.

Figure 1 shows the relationship between mental health and physical health co-morbidity (lifted directly from Barnett et al., 2012)[1]. As the number of physical health disorders increases, so does the proportion of patients with MH problems.

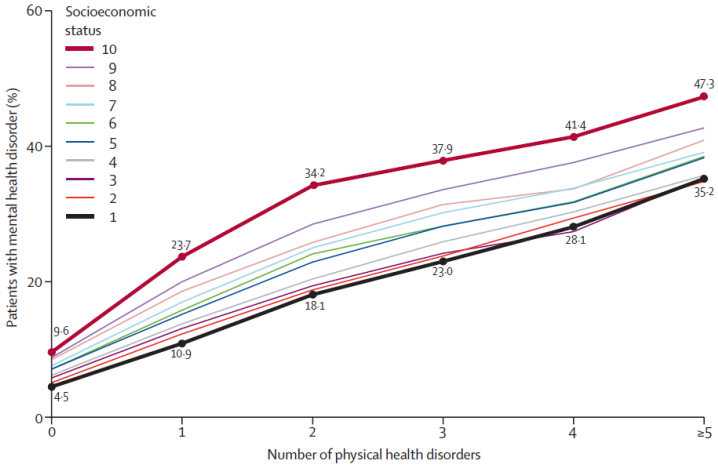

Figure 1

The proportion of people with a LTC who have also been found with depression is highest in the group of people who are relatively deprived. For example, in the more deprived group, 23% of COPD patients, 21% of CHD patients and 21% of diabetic patients are also depressed.

[1] Barnett et al. (2012). Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet, 380, 37-43. http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(12)60240-2.pdf

Care for large numbers of people with LTCs could be improved by the better integration of MH support with primary care LTC management programmes. The challenge is to integrate interventions for MH within physical health management protocols rather than merely overlaying MH interventions on top of existing protocols.

The purpose of *depression screening in patients with one or more long-term conditions* is to achieve:
1. better management of the LTC(s),
2. earlier identification and management of MH problems,
3. better quality of life (physical *and* mental health outcomes),
4. increase in life expectancy.

This project interacts with the main project, *stretched QOF (quality outcomes framework) to incentivise improved management of long-term conditions*.
The purpose of the stretched QOF project is to pilot a programme which incentivises primary care to manage LTC patients from the point that QOF payments stop.

In doing so, we expect that in the pilot area of Tilbury we would observe:

1. A higher number of people with a LTC who are diagnosed with Depression, and the ratio of the observed: expected[2] levels will increase.
2. In the cohort of LTC patients who are shifted from being not diagnosed to diagnosed with depression:
    a) A reduction in emergency admissions due to LTCs
    b) A reduction in admissions for self-harm or intentional injury
3. We also expect that there would be a reduction in take up of the older adults MH services for patients who do not have a previous diagnosis of Depression; however we feel that this would not be measurable.

3. NEEDS ASSESSMENT

The Tilbury ACO Needs Assessment identified that LTC management in Primary Care in Tilbury is in need of improvement.
QOF currently pays Practices based on the percentage of patients who receive specific, evidence-based interventions and/or treatments. Maximum funding is awarded when the proportion of patients reaches a given threshold, usually around 70-85% depending on the indicator.
Practices generally score around the level that they require for maximum payment. This either suggests that this is readily *achievable* level or that Practices do not have the resources for better results without additional funding.

<u>Prevalence of Depression and LTCs</u>
Figure 2 shows the overlap between LTCs and MH problems (lifted directly from Naylor et al., 2012)[3].

[2] Expected numbers of patients with Depression are taken from modelled PHE estimates 2016

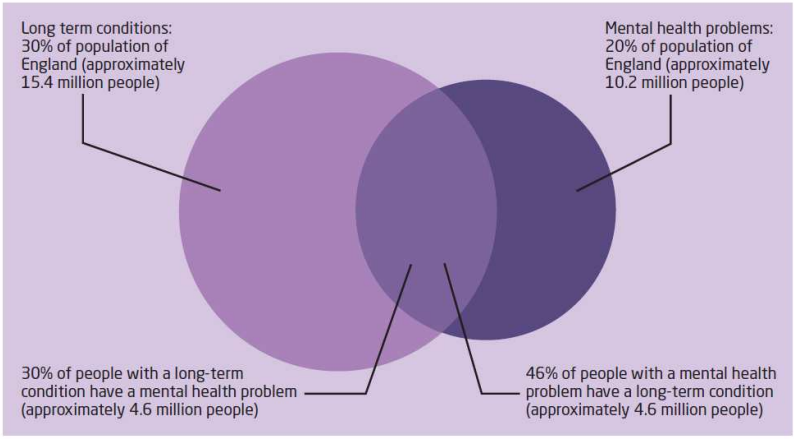

Figure 2

If the proportions shown in Figure 2 were applied to the population of Thurrock and Tilbury then the number of people would be as follows (Table 1).

Table 1

	Thurrock (nearest 100)	Tilbury (nearest 100)
Population (all age)	173,400	38,246
Long-term condition (30%)	52,000	11,500
Mental health problem (20%)	34,700	7,600
30% of people with a LTC also have a MH problem	15,600	3,400
46% of people with a MH problem also have a LTC	16,000	3,500

Population source = registered population 01.01.17 (NHS digital)

The 2007 adult psychiatric morbidity survey (APMS)[4] in England, showed 23% of the adult population aged 16+ years to have a MH problem, including 16% diagnosed for depression or anxiety. The latest APMS (2014)[5] reports that 17% of adults had a common mental disorder (CMD), in the week prior to interview. Depressive episodes and mixed anxiety/depression is estimated by the APMS 2014 to account for 65% of all CMD.

4. EVIDENCE BASE

Naylor et al. (2012)[6] quote numerous papers stating the increased cost to the system of co-morbid MH problems; the costs arise from higher rates of: GP consultations, hospital admissions, emergency hospital admissions, hospital readmissions, outpatient attendance and increased

[3] Naylor et al. (2012). Long-term conditions and mental health; the cost of co-morbidities. https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf
[4] APMS 2007, http://content.digital.nhs.uk/pubs/psychiatricmorbidity07
[5] APMS 2014, http://content.digital.nhs.uk/catalogue/PUB21748
[6] Naylor et al. (2012). Long-term conditions and mental health; the cost of co-morbidities. https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf

hospital lengths of stay. Wider costs such as increased sick days have also been found. It has been reported that the higher costs could be attributable to the severity of physical disease, but an association between poor MH and higher costs has been observed across the spectrum of physical severity; the additional costs are largely a consequence of treating the physical disease rather than the costs of treating the MH problems. For the NHS, the calculated cost of treating each person with a LTC = £3,910; the corresponding cost for treating each person with combined LTC and MH problem = £5,670.

Integrating MH support into LTC management will exploit the commonality of approaches e.g. actions therapy for treating depression and self-management approaches for LTC. Integration would involve IAPT (improving access to psychological therapies) which may include MH specialists working within primary care teams screening for MH problems in high risk groups. The General Practice Forward View (2016)[7] suggests that a MH professional be available in a GP setting (approximately one full-time equivalent available per 2 to 3 average sized Practices).

A stepped approach might be as follows for suspected mild to moderate cases:

- Computerised cognitive behaviour therapy (cCBT)
- Guided self-help
- One on one CBT
- CBT and other low intensity psychosocial interventions and medication
- Medication and high intensity psychosocial interventions

Screening to detect depression in patients with LTC is recommended by NICE, but not effective in its own right. Screening has to be done in conjunction with new approaches to the LTC management should depression be identified. Katon et al. (2010)[8] found improved outcomes over usual care in the control of LTC and depression when an intervention involved nurse who provided guideline-based patient-centred management of depression and the chronic disease(s).

5. PROJECT OUTCOMES

1. A higher number of people with a LTC who are diagnosed with Depression, and the ratio of the observed: expected levels will increase.
2. In the cohort of LTC patients who are shifted from being not diagnosed to diagnosed with depression
    a) A reduction in emergency admissions due to LTCs
    b) A reduction in admissions for self-harm or Intentional injury
3. We also expect that there would be a reduction in take up of the older adults MH services for patients who do not have a previous diagnosis; however we feel that this would not be measurable.

[7] General Practice forward view, https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf
[8] Katon et al. (2010). Collaborative care for patients with depression and chronic illness. The New England journal of medicine, 363, 2611-2620. http://www.nejm.org/doi/pdf/10.1056/NEJMoa1003955

4. DELIVERY PLAN AND KEY MILESTONES

Key Milestones (Key events indicating progress)	To be reached by (date)	Who is responsible for meeting the Milestone?
Practice Staff Engagement		
Multi-Disciplinary LTC workforce trained to deliver		
Purchase of cCBT licence		

5. FINANCIALS: Costs, Resources, Cashable Benefits, Cost Avoidance, Return on Investment

Table 2 – Costs/Investments

		Cost £	Cost time
1	Awareness raising / screening Make GPs, practice staff, social care workers aware that anyone with a LTC is 2 to 3x more likely to have a MH problem	£0 PHQ-2 and PHQ-9 are free to use	11,500 x 2min = 380hrs PHQ-2 at every annual review X £43 per hour[9] (NURSE) = £16,340 per year
2	computerised CBT for all with LTC	£29.5k This is the price quoted on a website of one provider http://www.beatingtheblues.co.uk	
3	Nurse-led care Integrating management of LTC *and* depression.	This is covered by the general case for change document under the workforce section. Not an additional cost	This is covered by the general case for change document under the workforce section Not an additional cost
4	Anti- Depressant Prescribing (treatment for those detected from this programme)	Annual cost £56.34 per patient[10] 66% of patients diagnosed need anti-depressants Max= 1,791.8*0.66*£56.34=£66,627	
5	Counselling (treatment for	¼ of those on anti-	

[9] Source: Personal Social Services Research Unit (2017) Unit Costs of Health and Social Care. Available from: http://www.pssru.ac.uk/project-pages/unit-costs/2016/index.php [Accessed 21.09.17]

[10] Source: McCrone, P. *et al* (2008) Paying the Price – The Cost of Mental Health Care in England. Kings Fund. Available from: https://www.kingsfund.org.uk/sites/default/files/Paying-the-Price-the-cost-of-mental-health-care-England-2026-McCrone-Dhanasiri-Patel-Knapp-Lawton-Smith-Kings-Fund-May-2008_0.pdf [Accessed 21.09.17]

	those detected from this programme)	depressants also need counselling at £971[11] Max £287,073	

Total potential Costs =£399,540

Table 4 - Cost Avoidance/returns

LTC Patients	30% of Tilbury population	11,500
LTC patients with MH problem	30% of LTC patients	3,400
Number of LTC patients with MH condition undiagnosed	Observed to expected ration = 0.527[12]	1,792
Increased annual cost of treating a LTC patient if they have a MH condition	£5670-£3,910	£1,760
Total additional cost of LTC patients with undiagnosed MH conditions in Tilbury	£1,760*1,792	£3.2M
Savings to NHS if we detect 10% of currently undiagnosed Depression	1,792*0.1*£1,760	£315,392
Current number of care home placements due to LTC patients having undiagnosed Depression	1,792/200 NNT to avoid 1 care home placement =200[13]	8.92
Total Annual Cost of care home placements due to undiagnosed depression	8.92*£628 (weekly placement cost)[14]*52.14 weeks	£292,076
Annual Savings to ASC if we detect 10% of currently undiagnosed Depression	((1,792*0.1)/200)*£628*52.14 weeks	£29,339

Min Cost avoidance = £315,954 (NHS) + £29,339 (ASC) = £345,293
Max Cost avoidance = £3.2M (NHS) + £292,076 (ASC) = £3,492,076

Estimated Return on investment

Min : (£345,293-£399540)/£399540=-£0.14 (negative)
Max: (£3,492,076-£399540)/£399540=£7.74

8a. NON FINANCIAL BENEFITS

[11] Source: McCrone, P. *et al* (2008) Paying the Price – The Cost of Mental Health Care in England. Kings Fund. Available from: https://www.kingsfund.org.uk/sites/default/files/Paying-the-Price-the-cost-of-mental-health-care-England-2026-McCrone-Dhanasiri-Patel-Knapp-Lawton-Smith-Kings-Fund-May-2008_0.pdf [Accessed 21.09.17]
[12] Source: Quality Outcomes Framework (2015/16) and PHE Modelled Estimates (2016)
[13] Source: Essex County Council Depression Screening Business Case, 2014
[14] Source: Personal Social Services Research Unit (2017) Unit Costs of Health and Social Care. Available from: http://www.pssru.ac.uk/project-pages/unit-costs/2016/index.php [Accessed 21.09.17]

Benefit Description	Measure to track realisation of benefit	Benefit realisation timescales:
Increase in number of LTC patients on Depression register	Mede / Systm 1 report	As soon as the programme begins
In the cohort of LTC patients who move from not having a depression diagnosis to having one; a reduction in non-elective admissions for their LTC's	Mede / Systm 1 report	Not measurable until at least 12 months following commencement of the programme. We need to wait until we have diagnosed a large enough cohort and then see what happens to them for 6-9 months following diagnosis and compare to same time frame before diagnosis.
In the cohort of LTC patients who move from not having a depression diagnosis to having one; a reduction in non-elective admissions for self-harm and intentional injury	Mede / Systm 1 report	Not measurable until at least 12 months following commencement of the programme. We need to wait until we have diagnosed a large enough cohort and then see what happens to them for 6-9months following diagnosis and compare to same time frame before diagnosis.

8b. POTENTIAL DIS-BENEFITS		
Dis-benefit description	**Measure to track realisation of dis-benefit**	**Dis-benefit realisation timescales and mitigation**
Using the time of Practice staff may lead to longer waits for patients also wanting appointments from Practice staff	Measure via GP Patient Survey or patient complaints	Increase in number of staff working in General practice as per main ACP case for change
An increase in patients with depression diagnosis means that Primary care staff need to care for these patients, this may result in more appointments being needed	Ongoing practice feedback	Multi-disciplinary LTC teams/clinics as per main ACP case for change QOF payments and stretched QOF payments should enable some further mitigation against this

9a. KEY RISKS TO PROJECT DELIVERY		
Risk Type, Risk Level and Risk Description	**Risk Mitigation**	**Who will monitor this Risk?**
Capacity to deliver	Increasing capacity under other programmes	Ian Wake
Extra hours required by GP Practice staff		Ian Wake / Emma Sanford
Additional support to nurse-led clinic (GP, psychiatrist, psychologist)	Support from MH team	Ian Wake / Emma Sanford
Success of Mede Analytics project – will impact on evaluation		Emma Sanford

9b. KEY ASSUMPTIONS AND CONSTRAINTS		
ASSUMPTIONS		
Assumption	**What happens if assumption is no longer correct**	**Who will monitor the assumption**
GP Practice staff support project	Project will fail	Ian Wake
All detected patients are treated effectively such that their risks become in line with a LTC patient with no MH condition	Returns on Investment will be lower than Expected	Emma Sanford
Costs of Multi-Disciplinary LTC, nurse led clinics will cover the delivery of this programme	Additional cost	Ian Wake
No costs needed for additional support by GP, Psychiatrists, psychologist	Additional cost	Ian Wake
NNT to prevent 1 care home placement = 200	Savings different to estimated	Emma Sanford
CONSTRAINTS		
Constraint	**What happens if the Constraint is no longer correct?**	**Who will monitor this Constraint?**
Nursing staff training to roll out combined LTC *and* MH clinic		

9c. DEPENDENCIES		
Inbound: This project is dependent on the delivery of these projects/activities		
Project/Activity	What is the dependency?	Who will monitor the dependency?
Mede Analytics	Evaluation is dependent on this	Emma Sanford
Stretched QOF	Payments to practice through this project will support mitigation against additional time costs	Emma Sanford
Detection of LTC programmes	The costs of this programme could increase if the LTC detection programmes are successful. However so will the returns	Emma Sanford
Outbound: Other projects or activities will not deliver if this project fails to deliver		
Project/Activity	What is the dependency?	Who will monitor the dependency?

10. GOVERNANCE ARRANGEMENTS

ACP project team to determine project management arrangements.
Project to be accountable to ACP Executive.

11. APPENDICIES

Patient health questionnaire (PHQ)
PHQ screening for MH problems could take place in primary or secondary care:

- Primary care. It is appreciated that identifying depression early could be problematic because the LTC itself may lead to sleep disturbance, fatigue, change in appetite, weight change (e.g. in diabetes, Egede and Ellis, 2010)[15]
- Secondary care
    - Liaison psychiatry – identifying and supporting MH needs while in hospital. Up to 25% of people aged 65+ in acute hospital beds are occupied by people with dementia (Alzheimer's Society, 2009)[16]

[15] Egede and Ellis (2010). Diabetes and depression: global perspectives. Diabetes research and clinical practice, 87, 302-312. http://www.diabetesresearchclinicalpractice.com/article/S0168-8227(10)00047-1/pdf
[16] Alzheimer's Society (2009). Counting the cost: caring for people with dementia on hospital wards. https://www.alzheimers.org.uk/download/downloads/id/787/counting_the_cost.pdf

Health, social care or Practice staff should be alert to possible depression (particularly in those with a history of depression) and consider asking people two questions. The two questions are called the PHQ-2 patient health questionnaire. This is a first line depression screening measure which uses two questions from the PHQ-9:

1. During the last 2 weeks, how often have you been bothered by: little interest or pleasure in doing things?
- Not at all = 0
- Several days = 1
- More than half the days = 2
- Nearly every day = 3

2. During the last 2 weeks, how often have you been bothered by feeling down, depressed or hopeless?
- Not at all = 0
- Several days = 1
- More than half the days = 2
- Nearly every day = 3

If the sum of the scores of the two questions is 3 or more then this indicates a positive screen for depression and then patients would be further evaluated e.g. using PHQ-9. The quick PHQ-2 depression screening could be employed at the time of diagnosis and subsequent follow-up appointments or a telephone call 2 weeks after a diagnosis or following a medication change or news of the worsening of the LTC.

PHQ-9 patient health questionnaire. A free-to-use nine-question tool (questions from DSM-IV) to assess depression (http://www.phqscreeners.com) which has yielded the same results regardless of whether carried out face to face or over the telephone (Pinto-Meza et al., 2005)[17]. The scoring of PHQ-9 is a reliable and valid measurement of depression severity (mild, moderate, moderately severe and severe). Using re-interview by a mental health professional as the criterion standard a PHQ-9 score ≥10 had a sensitivity (correctly identified positives) of 88% and a specificity of 88% (correctly identified negatives) for major depression (Kroenke et al., 2001)[18].

[17] Pinto Meza et al. (2005). Assessing depression in primary care with the PHQ-9: can it be carried out over the telephone. Journal of general internal medicine, 20, 738-742. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1490180/pdf/jgi_05335.pdf

[18] Kroenke et al. (2001). The PHQ-9; validity of a brief depression severity measure. Journal of general internal medicine, 16, 606-613. http://onlinelibrary.wiley.com/doi/10.1046/j.1525-1497.2001.016009606.x/epdf