Birmingham and Solihull NHS
Mental Health NHS Foundation Trust

Re Audit of Vitamin D Monitoring and Management of Deficiency in a Forensic CAMHS Unit

Audit ID	1292	
Division	Secure Services	
Programme/zone	Youth	
Teams	Pacific and Atlantic Wards	
Audit Type	Re-audit	Local audit
Project start date	13/03/2017	
Project completion date	31/05/2017	

Introduction:

Audit Brief description:

An Audit of the investigation, treatment and monitoring of Vitamin D levels with the Forensic CAMHS inpatient service.

Audit Aims/objectives:

To audit the practice of vitamin D monitoring in a forensic (CAMHS) setting, against recommendations made by the CMO.

Patient and public involvement in this clinical audit project:

How this audit will benefit patient care:

This audit hopes to make recommendations to further improve Vitamin D investigation and treatment within the service, with the potential to roll out any changes across other services.

Level of service users involvement in this audit project:

None.

Standards:

Standards	Target	Standards Reference:
Inpatients should have Vitamin D levels checked routinely on admission Vitamin D insufficiency should be treated according to guidelines Vitamin D levels should be re-checked following completion of treatment	100%	Birmingham Cross-City CCG. Summary of National Osteoporosis Society Guidance 2013. 'Vitamin D & Bone Health: A Practical Guideline for Patient Management' with Local Recommendations for Adult Patients.
		[StandardsSub]
		[StandardsItem]

Method:

Audit methodology	Retrospective
Data sources	Case note review
Sampling Method	Systematic sampling
Population size	10
Sample size	10
Data collection for the period of	13/01/2017 to 13/04/2017

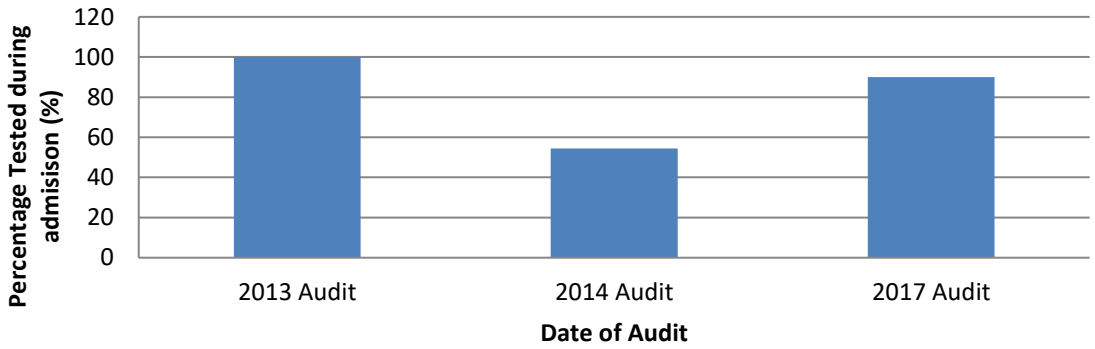
Results:

There were 10 inpatients admitted to Ardenleigh during the period of data collection. 8 were male, and 2 female. Ages ranged from 16 to 18. The table below demonstrates the variation of ethnic backgrounds within the sample:

Ethnicity	Number (%)
Caucasian	6
Afro-Caribbean	2
Asian	1
Mixed	1

9 inpatients (90%) had their Vitamin D levels checked during their admission; one patient declined any baseline investigations including blood tests.

Figure 1: Bar chart comparing the checking of Vitamin D status for FCAMHS inpatients 2013-2017

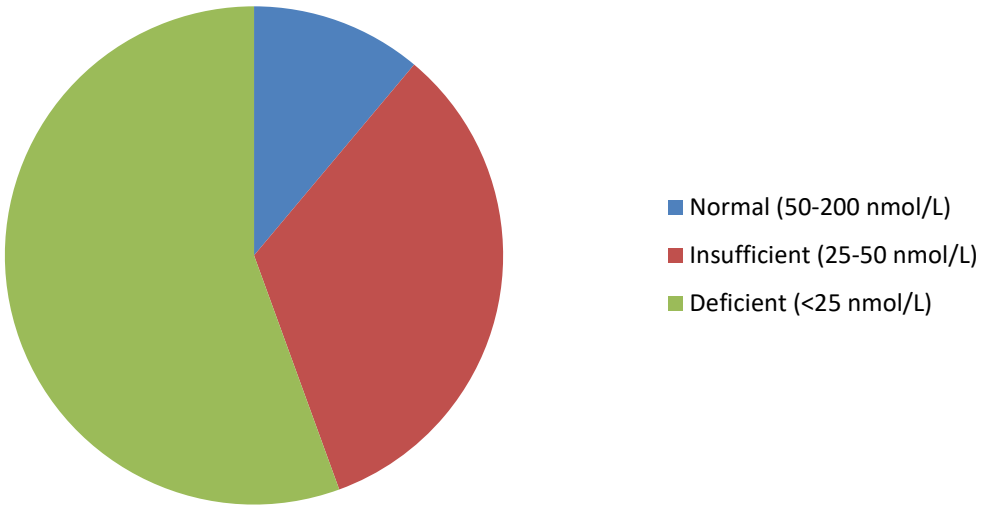


Of these patients, the majority had their levels checked within the first week of admission:

Figure 2: Pie chart demonstrating the time period following admission in which Vitamin D level was first checked

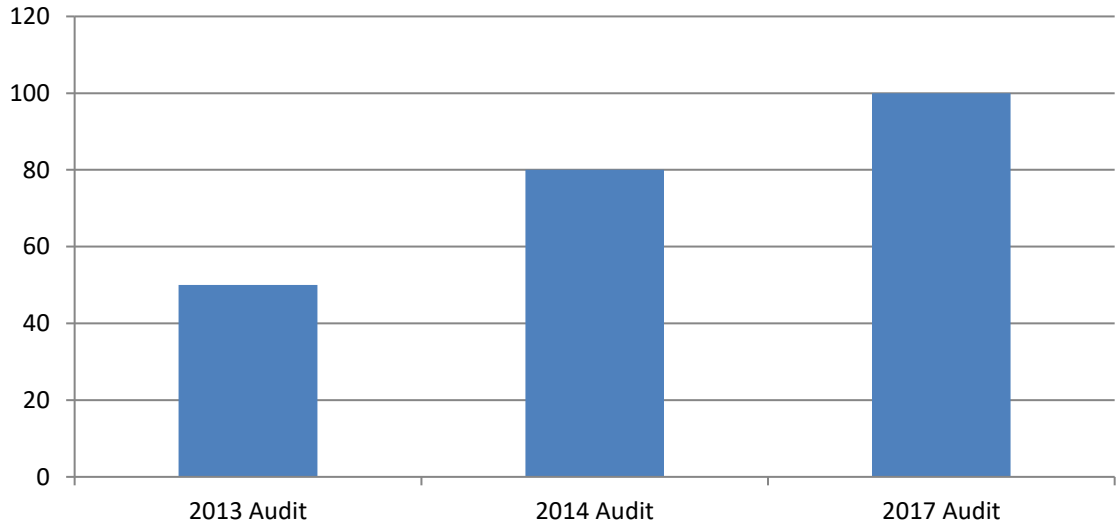
8/9 (89%) patients tested during their admission were found to have low levels of Vitamin D, with results ranging from 16.0 to 64.7 nmol/L. Of these 8 patients, 3/8 (37.5%) were deemed to have insufficient Vitamin D levels (25.0 to 50.0 nmol/L) and the remaining 63.5% documented as having inadequate levels (< 25.0 nmol/L) according to local laboratory reference ranges.

Figure 3: Pie Chart showing Vitamin D Status of patients tested



100% of patients with low Vitamin D were correctly commenced on a treatment dose of Vitamin D replacement (colecalciferol 3200 units OD for 13 weeks).

Figure 4: Graph showing percentage of patients with low Vitamin D being provided with treatment



Only 7 patients (78%) had their levels re-checked during admission at least once; of note the patient with an originally normal Vitamin D level has not had this re-tested, despite being an inpatient for a

further 7 months. The other patient without a repeat sample had blood taken for testing, but a result has not been reported by the laboratory. Of those rechecked, 100% now had adequate Vitamin D status. 87.5% were continued on maintenance therapy, of 800 units colecalciferol OD.

Conclusions:

In summary, this re-audit has identified an improvement in the proportion of patients having their Vitamin D levels tested during admission compared to 2014, as all patients admitted to the FCAMHS service at Ardenleigh were asked for a blood sample for Vitamin D levels to be taken. In keeping with previous audit results, 89% of patients tested have inadequate levels of Vitamin D. This re-audit has shown an improvement in treatment for Vitamin D inadequacy, with all identified patients correctly treated initially.

Key findings/risks:

89% of FCAMHS inpatients have low levels of Vitamin D requiring treatment, and this is currently identified and managed appropriately by the medical teams.

Recommendations:

1) For medical teams to continue to check Vitamin D levels for inpatients routinely at the point of admission to FCAMHS and to treat accordingly.
2) This should be rechecked 6 monthly, pre-CPA reviews, for all patients, including those who previously had normal Vitamin D levels.
3) Update to the FCAMHS Service Standards for Vitamin D monitoring, including clear guidance outlining when to recheck levels.
4) To re-audit in 12 months' time.

Action Plan:

Is re-audit necessary? Yes Date re-audit planned: March 2018

ID	Action (*Please detail actions required to implement recommendations*)	Person responsible	Target date
1	FCAMHS Service Standards to be updated to include requirement for Vitamin D levels to be checked at the point of admission and 6 monthly therefore pre-CPA for all inpatients.	Lead Auditor	January 2018
2	Re-audit in 12 months' time	Lead Auditor	March 2018
3			
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