

# Measuring and Improving Vitamin D Promotion and Prescribing to Prenatal and Postnatal Women within the North West.

Preliminary Report – June 2011  
Part 1: The Provider Services Audit

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## Foreword

Vitamin D is an essential nutrient for healthy bones and optimum wellbeing. This report highlights the growing concern that some sections of our population may not be generating enough natural vitamin D through exposure to sunlight or their dietary intake is sub-optimal. In particular, expectant mothers and new born children may be at particular risk of low vitamin D levels. There are NICE guidelines in place that recommend health professionals to inform women of the importance of maintaining their own and their baby's vitamin D stores, although information about vitamin D is provided at the professional's discretion. Our audit and survey highlights the absence of vitamin D policies in place, and the need for more effort incorporating the role of vitamin D in training packages. This latter point is important given the survey findings showing a relative lack of knowledge about the facts and importance of vitamin D among both midwives and health visitors.

I congratulate the team on raising awareness of this important topic and their findings. I commend this report to both PCTs and Acute Trusts to encourage them to meet the challenge of developing and implementing vitamin D policies, and expanding training opportunities for both midwives and health visitors. I look forward to a further review of progress in due course.



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# Table of Contents

<b>1</b>	<b>Executive Summary .....</b>	<b>5</b>
1.1	Introduction .....	5
1.2	Findings .....	5
1.3	Recommendations .....	6
<b>2</b>	<b>Background .....</b>	<b>7</b>
2.1	What is vitamin D? .....	7
2.2	The importance of vitamin D to maternal and foetal health.....	7
2.3	Vitamin D Deficiency as a Public Health Issue .....	7
2.4	Current Policy and Guidelines .....	8
2.5	Aims and Objectives .....	9
<b>3</b>	<b>Method .....</b>	<b>10</b>
3.1	Participants .....	10
3.2	Data Collection tools.....	10
3.3	Steering group.....	10
3.4	Procedure .....	10
3.5	Data analysis.....	11
<b>4</b>	<b>Findings.....</b>	<b>12</b>
4.1	Current Trust Vitamin D Policies and Practice.....	12
4.2	Staff Survey .....	13
4.2.1	Response Rate .....	13
4.2.2	Knowledge of vitamin D.....	13
4.2.3	Vitamin D training and Practice .....	16
4.2.4	Healthy Start .....	19
4.3	Staff survey findings by PCT .....	21
4.3.1	Knowledge Results.....	21
4.3.2	Vitamin D practice .....	23
4.3.3	Healthy Start .....	24
4.4	Staff survey findings by Acute Trust .....	26
4.4.1	Knowledge findings.....	26
4.4.2	Vitamin D practice .....	28
4.4.3	Healthy Start .....	29
<b>5</b>	<b>Discussion and Conclusion .....</b>	<b>31</b>
5.1	Discussion.....	31
5.2	Study limitations.....	33
5.3	Recommendations.....	33
5.4	Conclusion .....	33
<b>6</b>	<b>Acknowledgements.....</b>	<b>35</b>
<b>7</b>	<b>References.....</b>	<b>36</b>
<b>8</b>	<b>Appendix.....</b>	<b>37</b>

## List of Figures

Figure 1: Summary of current Trust policy and practice findings.....	12
Figure 2: Survey responses from PCTs .....	13
Figure 3: Survey responses from Acute Trusts .....	13
Figure 4: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb .....	14
Figure 5: No. of correctly identified food types by midwives and health visitors .....	14
Figure 6: Correctly and incorrectly identified food types by midwives and health visitors .....	15
Figure 7: No. of correctly identified risk factors/symptoms of vitamin D deficiency by midwives and health visitors...	15
Figure 8: Most commonly identified risk factors/symptoms of vitamin D deficiency by midwives and health visitors ...	16
Figure 9: Proportion of clients vitamin D is discussed with between midwives and health visitors.....	16
Figure 10: Reasons for not discussing vitamin D amongst midwives and health visitors who reported not discussing with 'all' clients.....	17
Figure 11: Resources referred to by midwives and health visitors when discussing vitamin D with clients .....	18
Figure 12: Confidence in discussing vitamin D with clients amongst midwives and health visitors .....	18
Figure 13: Proportion of clients Healthy Start is discussed with by midwives and health visitors .....	19
Figure 14: Reasons for not discussing Healthy Start amongst midwives and health visitors who report not discussing with 'all' clients.....	19
Figure 15: Healthy Start (HS) support, resource availability and distribution .....	20
Figure 16: Total vitamin D knowledge scores by PCT.....	21
Figure 17: No. of correctly identified food types by PCT .....	22
Figure 18: No. of correctly identified risk factors/symptoms of vitamin D deficiency by PCT .....	22
Figure 19: Proportion of clients vitamin D is discussed with by PCT.....	23
Figure 20: Confidence in discussing vitamin D with clients amongst health visitors by PCT.....	24
Figure 21: Proportion of clients Healthy Start is discussed with by PCT.....	25
Figure 22: Total vitamin D knowledge scores by Acute Trust .....	26
Figure 23: No. of correctly identified food types by Acute Trust .....	27
Figure 24: No. of correctly identified risk factors/symptoms of vitamin D deficiency by Acute Trust.....	27
Figure 25: Proportion of clients vitamin D is discussed with by Acute Trust .....	28
Figure 26: Confidence in discussing vitamin D with clients amongst midwives by Acute Trust.....	29
Figure 27: Proportion of clients Healthy Start is discussed with by Acute Trust .....	30
Figure 28: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb by PCT.....	58
Figure 29: Correctly and incorrectly identified food types by PCT .....	59
Figure 30: Most commonly identified risk factors/symptoms of vitamin D deficiency by health visitors at each PCT ....	60
Figure 31: Reasons for not discussing vitamin D who reported not discussing with 'all' clients by PCT .....	60
Figure 32: Resources referred to by health visitors when discussing vitamin D with clients by PCT.....	61
Figure 33: Awareness of DH vitamin D leaflet and experience of vitamin D training amongst health visitors by PCT ...	61
Figure 34: Usefulness of potential training in vitamin D by PCT .....	62
Figure 35: Reasons for not discussing Healthy Start amongst health visitors who report not discussing with 'all' clients by PCT.....	62
Figure 36: Healthy Start support, resource availability and distribution amongst health visitors by PCT .....	63
Figure 37: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb by Acute Trust.....	63
Figure 38: Correctly and incorrectly identified food types by Acute Trust .....	64
Figure 39: Most commonly identified risk factors/symptoms of vitamin D deficiency by Acute Trust .....	65
Figure 40: Reasons for not discussing vitamin D who reported not discussing with 'all' clients by Acute Trust.....	65
Figure 41: Resources referred to by midwives when discussing vitamin D with clients by Acute Trust.....	66
Figure 42: Awareness of DH vitamin D leaflet and experience of vitamin D training amongst midwives by Acute Trust	66
Figure 43: Usefulness of potential training in vitamin D by Acute Trust.....	67
Figure 44: Reasons for not discussing Healthy Start amongst midwives who report not discussing with 'all' clients by Acute Trust .....	67
Figure 45: Healthy Start support, resource availability and distribution amongst midwives by Acute Trust .....	68

# 1 Executive Summary

## 1.1 Introduction

Vitamin D is an important nutrient obtained naturally through exposure to sunlight and to a much lesser extent from our diet. Deficiency in vitamin D is not a new entity and associated conditions, such as rickets, that were thought to have been eradicated 35 years ago are now making a comeback<sup>1</sup>. For individuals whose exposure to the sun is inadequate and those deemed 'at risk' there is a need for supplementation.

The majority of vitamin D is naturally obtained by the body through exposure to sunlight, but within a climate where sunlight is sparse, especially in the winter months; adequate exposure to sunlight is often unattainable. It is also extremely difficult to achieve adequate levels of vitamin D from diet; and individuals belonging to high risk groups require more sunlight and a higher intake of vitamin D rich food or vitamin supplements.

The steady increase of vitamin D related diseases has led to a review of guidelines and renewed messages to promote more sun exposure and supplement uptake, especially amongst pregnant women, where vitamin D deficiency pre- and post-natally can have detrimental effects on the vitamin D status of the child and bone health in later childhood. In 2008, NICE issued guidelines which advised that women should be informed of the importance of maintaining their own and their baby's vitamin D stores<sup>2,3</sup>. Information provided to pre- and post-natal women on the importance of vitamin D, the associated health implications of vitamin D deficiency, safe dosage and recommended preventative measures is provided at the health professional's discretion. In order to translate these key messages, the training and knowledge of health professionals, who have primary contact with these women, may need to be addressed.

We set out to assess the policies and practice relating to the promotion and prescribing of vitamin D to pregnant women within self selected health economies across the North West. This paper reports the first two elements of a three part audit involving:

1. A **provider service audit** to assess current vitamin D policies, personnel and support available in hospitals and community facilities for pre- and post-natal care.
2. A **staff survey** of midwives' and health visitors' current knowledge, practice and training needs relating to vitamin D supplementation with pre- and post-natal women.
3. An **audit of case notes** at participating Trust sites to determine the current local practice in assessing those women deemed at risk of vitamin D deficiency and delivering information on the importance of vitamin D with pre- and post-natal women.

## 1.2 Findings

### The provider services audit

- Only one Acute Trust (of 8) and one Primary Care Trust (of 6) had a vitamin D policy in place.
- Four Trusts had either a team of experts available with a role relating to vitamin D or a vitamin D representative/coordinator.
- Just under half of the Trusts reported incorporating vitamin D into training packages.
- The majority of Trusts reported giving information about vitamin D to their staff.
- The majority of Trusts were also willing to implement a vitamin D policy, and indicated that it would take between four to nine months to develop, approve and implement.

## **The staff survey**

- A total of 178 health visitors and 206 midwives across 6 PCTs and 8 Acute Trusts responded giving a response rate of 44% and 14% respectively.
- There appears to be a lack of knowledge amongst midwives and health visitors about the facts and importance of vitamin D and confidence is generally low.
- Although a higher proportion of health visitors (50%) discuss vitamin D with their clients than midwives (20%), levels are still low.
- The main reason reported by staff for not discussing vitamin D with women was a lack of knowledge.
- Although NICE guidelines advocate that health professionals recommend vitamin D supplementation, few frontline staff report receiving training in this area.

Where policies were in place, it was clear that midwives and health visitors were more knowledgeable regarding vitamin D, and were more likely to discuss vitamin D with women than those from Trusts which have yet to tackle this issue.

## **1.3 Recommendations**

- Midwives and health visitors need to be educated through a stand alone or incorporated training session, which addresses both the importance of vitamin D to health and how it can be obtained: through sun exposure, vitamin supplementation, and appropriate food sources, and training into how to deliver this information to all pre- and post-natal women.
- Leaflets on vitamin D uptake in pregnancy/breast feeding should be created (reviewed if already in place) and made widely available to health visitors and midwives.
- All Trusts should ensure that they have information on, and up-to-date distribution lists for Healthy Start available to health visitors and midwives.
- We would encourage those Trusts with a written vitamin D policy to share this with other trusts.
- All Trusts should start the process of developing a vitamin D policy relating to pre- and post-natal women.
- We would encourage those Trusts that have training in place and have health visitors/midwives with higher levels of confidence and/or reported higher levels of delivering vitamin D information to clients, to share their training packages with other Trusts.

Health professionals are key to the promotion of vitamin D, and there is a need to increase their awareness of 'at-risk' groups, symptoms and interventions available to clients, and strengthen their confidence to discuss supplementation and to identify high risk mothers.

## 2 Background

### 2.1 What is vitamin D?

Vitamin D is an important nutrient obtained naturally through exposure to sunlight and to a much lesser extent from our diet. Calcitriol, the active form of vitamin D, prompts the intestinal absorption of calcium and phosphorus and aids re-absorption of calcium in the kidneys. Vitamin D maintains calcium levels within the body, and the ongoing process of mineralisation and demineralisation relies on vitamin D uptake. Vitamin D is fundamental to bone growth and bone remodelling where inadequate amounts of vitamin D in the body may cause brittle or misshapen bones. Insufficient vitamin D levels hinder bone mineralisation, which in turn can lead to bone diseases such as rickets in children and osteomalacia in adults<sup>1,4</sup>.

### 2.2 The importance of vitamin D to maternal and foetal health

It is essential to promote the uptake of vitamin D during and post pregnancy (and ideally preconception) as the mother must supply the foetus with an adequate amount of vitamin D to ensure normal bone mineralisation during foetal growth. This in turn places a weighty burden on the mother's own vitamin D supply, increasing the risk of vitamin D deficiencies to occur in her own store and increasing the risk of preeclampsia<sup>5</sup>. Research has shown that maternal vitamin D deficiency affects bone health in newborns, subsequently causing childhood rickets and other bone diseases/deformities<sup>1</sup> and is associated with other pathologies such as type 1 diabetes and neurological disorders<sup>5</sup>.

### 2.3 Vitamin D Deficiency as a Public Health Issue

In the UK, the population receives limited amounts of sunlight and as such vitamin D stores can only be built up during the months of April to September, therefore we must also rely on other sources for vitamin D such as supplements and dietary intake<sup>4</sup>. Ethnic minority populations were traditionally recognised as 'high risk' groups due to their skin pigmentation and the covering of skin for religious reasons, however it is becoming increasing more of a problem in pregnant white women, even with reports of vitamin D deficiency from Southern England<sup>6</sup>. It has been suggested that for a fair-skinned person, 20-30 minutes of exposure to sunlight on the face and the forearms, between the hours of 10am and 3pm, 2-3 times per week, during the summer months, is sufficient to achieve healthy vitamin D levels. However, those with pigmented skin would require a 2-fold to 10-fold increase in exposure<sup>4</sup>. However, this advice goes against that of skin cancer campaigns and the frequently accepted view within society that any sun exposure is risky and should be avoided without adequate sun protection, a factor which may have further hindered our uptake of vitamin D over the last 10 years. Furthermore, improving vitamin D uptake through diet alone is difficult, as there are a limited number of foods which contain vitamin D, and often in very small quantities, such as oily fish, eggs and liver products, and a number of fortified foods which include margarine, breakfast cereals and powdered milk. However, during pregnancy, women are advised to limit their consumption of oily fish and avoid liver products and raw/undercooked eggs altogether<sup>7</sup>, thereby restricting the uptake of vitamin D through natural sources of foods.

A recent UK survey found that over 50% of the adult population were insufficient in vitamin D and 16% were regarded as severely deficient during the winter and spring months<sup>8</sup>. A further study of pregnant women living in the Belfast area (54-55 degrees north) found that 35%, 44% and 16% were vitamin D deficient, and 96%, 96% and 75% were vitamin D insufficient at 12, 20 and 35 weeks gestation respectively (winter, spring and summer); and that over 75% of the women had insufficient vitamin D levels<sup>9</sup>. The study reported that deficiencies also existed in those taking daily vitamin D supplements, which reinforces current concerns that the recommended daily dose of 10 micrograms of vitamin D is not sufficient to provide an adequate amount of vitamin D<sup>5,10</sup>. The 'Shine on Scotland' campaign, founded by 16 year old schoolboy Ryan McLaughlin from Glasgow, promotes a national supplementation program of vitamin D to pregnant women and children with the aim to help reduce the incidence of multiple sclerosis (MS) and to help improve the general health of all children<sup>11</sup>.

Vitamin D deficiency is of growing concern within the North West and this concern is backed up by research findings which indicate that an intervention to increase the uptake of vitamin D in areas where exposure to sunlight is low, and/or there is a high prevalence of low socioeconomic status and/or nutritional food intake is known to be poor<sup>1</sup>. Across England, the increase in cases of rickets<sup>1</sup> has raised awareness of the need for training of healthcare professionals, education of patients and the prescription of vitamin D supplementation to rise up the health inequalities agenda.

## **2.4 Current Policy and Guidelines**

The Department of Health and NICE guidelines state that women who are child bearing or breast feeding should include 10 micrograms of vitamin D in supplement form per day to maximise their vitamin D store<sup>2,12</sup>. The NICE guidelines also state that health professionals who have direct or indirect contact with pregnant and breast feeding women should be educated about the importance of vitamin D supplements, with the intention that they inform and advise the women they meet<sup>2</sup>. Professional bodies should ensure that health professionals have appropriate knowledge and skills to give advice on the nutritional needs of women, the importance of a balanced diet, and the rationale for recommending dietary supplements such as vitamin D to pregnant and breastfeeding women<sup>3</sup>.

At booking (by 10 weeks) midwives should offer every woman advice on the benefits of taking vitamin D supplements (10 micrograms per day) during pregnancy and whilst breastfeeding, highlighting its use to increase mother and baby vitamin D stores and reduce the risk of the baby developing rickets<sup>3</sup>. Midwives and health visitors should also advise all pregnant and breastfeeding women about the availability of suitable vitamin D supplements, such as the Healthy Start vitamins. Health professionals should offer the maternal Healthy Start vitamins to those who are, or may be, eligible and particular attention should be paid to those women who are at a higher risk of vitamin D deficiency<sup>2</sup>, which include:

- women of South Asian, African, Caribbean or Middle Eastern descent;
- women who have limited sunlight exposure to their skin; those who are mostly housebound or remain covered when outdoors;
- women who have a diet low in vitamin D: a diet that does not include foods such as oily fish, eggs, meat, vitamin D-fortified margarine or breakfast cereal; and women with a pre-pregnancy body mass index above 30 kg/m<sup>2</sup>.

These women in particular should be asked whether they are following the advice to take vitamin D supplements during pregnancy and while breastfeeding.

The Healthy Start scheme, launched in 2006, replaces the welfare food scheme, where eligible beneficiaries receive vouchers each week that can be used to purchase fresh fruit and vegetables, fresh milk and formula milk. Beneficiaries are also entitled to free Healthy Start multi-vitamin supplements which include the recommended daily allowance (RDA) of vitamin D. This scheme urges health professionals to:

- give health advice regarding the Healthy Start vitamins to pre- and post-natal women;
- promote nutritional awareness;
- and offer Healthy Start information and leaflets to women and families.

The NICE guidance<sup>2</sup> also states that PCTs should promote the Healthy Start scheme and ensure adequate supplies of vitamin supplements and application forms, and community pharmacists should ensure that the Healthy Start vitamins are available to purchase by those who are not eligible to receive them free of charge.

The growing concern relating to the increase in incidence of rickets has led to a drive by the Department of Health, local PCTs, and midwives to promote the uptake of vitamin D supplements across the North West, however it has become apparent that vitamin D uptake is inadequately promoted within the maternity care pathway, and the uptake of healthy start vitamin tablets is low even amongst those entitled to free supplies<sup>13</sup>. Each PCT has provisions



in place to support low income families through the Healthy Start initiative, however quarterly regional data indicate that uptake of vitamin D supplements is low. The Healthy Start scheme is only available to low income families, leaving others to buy vitamin D supplements at a cost ranging from £3.55 – £4.49 for 30 tablets from local pharmacies<sup>2</sup>. Over the course of 9 months (or more if the mother is breast feeding), the additional cost of vitamin D supplements may result in pre- and post-natal women not taking them, especially if they have not been educated about the importance of vitamin D during pregnancy.

It is clear that improving and promoting vitamin D intake throughout pregnancy through supplementation is essential for the health of both the mother and the newborn child, particularly where bone diseases amongst the population can be prevented by increasing vitamin D uptake through exposure to sunlight and educating women about the vitamin D content in their diet<sup>14</sup>. However, despite the NICE guidance and the growing public concern regarding vitamin D, there is little known about the current practice and policies in place across the North West to tackle the issue.

## **2.5 Aims and Objectives**

The overall aim of the audit was to measure policies and practice relating to vitamin D promotion and prescribing to pregnant women within the North West. We aimed to underline any gaps in the service and gain an insight into:

- current local vitamin D policies in place;
- current vitamin D advice given to pregnant mothers by midwives and health visitors;
- training needs of healthcare professionals; and the supply and demand of vitamin D supplements.

## 3 Method

### 3.1 Participants

The following hospitals in Greater Manchester, Merseyside and Lancashire participated in the audit:

- Central Manchester University Hospitals NHS Foundation Trust (CMFT)
- Liverpool Women's NHS Foundation Trust (LWH)
- Pennine Acute Hospitals NHS Trust (PAT)
- Stockport NHS Foundation Trust (SFT)
- Wirral University Teaching Hospital NHS Foundation Trust (WUTH)
- Wrightington, Wigan and Leigh NHS Foundation Trust (WWL)
- East Lancashire Hospitals NHS Trust (staff survey only)
- Royal Bolton Hospital NHS Foundation Trust (staff survey only)

And the following Primary Care Trusts (PCTs) also participated:

- Liverpool Community Health NHS Trust (NHS LIV)
- NHS East Lancashire (NHS EL)
- NHS Ashton, Leigh and Wigan (NHS ALW)
- NHS Heywood Rochdale and Middleton (NHS HMR)
- NHS Manchester (NHS MAN)
- NHS Wirral (NHS WIR)

### 3.2 Data Collection tools

Two proformas were developed to collect information from each site: one for senior staff to complete on behalf of the Trust: **Provider Services Trust proforma**, and the other to be completed by midwives and health visitors: **Staff survey**.

The Provider Services Trust proforma (see Appendix 8.1) was developed to obtain information about current vitamin D practice and policies in place at each site, including whether there were any local guidelines, training programmes, in-house leaflets and current practice regarding the Healthy Start scheme.

The staff survey (see Appendix 8.2) was developed to measure midwives' and health visitors' current knowledge, practice and training needs relating to vitamin D supplements and advice to pre- and post-natal women.

### 3.3 Steering group

To define the audit objectives a panel of experts were invited to be on the steering group (the members of which are listed in the Acknowledgements). The group discussed existing vitamin D issues in their area and highlighted concerns regarding uptake of vitamin D amongst pre- and post-natal women and lack of healthcare professionals' awareness of the importance of, and sources of vitamin D.

### 3.4 Procedure

All hospitals in Greater Manchester, Merseyside and Lancashire were contacted and asked if they would like to participate in the audit. Once recruited, senior contacts at each participating site were sent a copy of the Provider Services Trust proforma (see Appendix 8.1) by email in September 2010 and were asked to complete and return it on behalf of the Trust with any relevant policy documents or in-house leaflets attached by November 2010.

The staff survey (see Appendix 8.2) was originally developed using the online survey creator 'surveygizmo', which was piloted with lead contacts at each Trust. Once agreed, a link to the online survey was sent by email to the lead contacts at each site and then forwarded on to all midwives and health visitors within their Trust. On clicking the link, staff were informed of the overall content and purpose of the survey, that it would take approximately 10 minutes to complete, that any identifiable information would be kept strictly confidential, and that it was important to answer the questions honestly and without referring to other sources. The survey was split into 4 sections; demographics, knowledge of vitamin D, current practice and training

in vitamin D, and the role of the Healthy Start scheme. On completion of the survey, respondents were asked to share any comments about the survey or the subject matter in general, they were fed back the answers to the knowledge questions, and directed to other online sources of information. This allowed the survey to also become a training exercise in itself.

The survey links were also sent out in September 2010. However, as the deadline approached (November 2010), it became apparent that despite frequent reminders, the response rate was particularly poor across the participating organisations. Therefore, a hard copy was developed and sent out to lead contacts at each site to disseminate to staff. Each copy included a pre-paid envelope for the respondent to complete and return the survey in their own time. However, this meant that the survey was no longer seen as a training exercise as the answers to the knowledge questions could not be given at the end of the survey. Alternatively, respondents could remove the back sheet for their own information which included directions to other sources and contact information of the project coordinator to request the answers to the knowledge questions by email if they so wish.

### **3.5 Data analysis**

The data obtained from the provider services Trust proforma was analysed descriptively and summarised into individual sections by Trust, and further summarised into a table to compare services across Acute Trusts and PCTs.

The data from the survey was analysed using descriptive statistics and presented using charts to show percentages for each item by job role (midwives/ health visitors), by individual PCTs and by individual Acute Trusts.

A total score for the knowledge section was calculated for each respondent by giving one point for every correct response. This made a total score for the knowledge section as 16. Individual scores were then collated and an average percentage was calculated for each Acute Trust/PCT.

Due to the variance in responses to the question requesting the identification of 5 food sources that are rich in vitamin D, responses had to be grouped into categories for analytical purposes. For example, some respondents listed a number of different dairy produce, while others simply stated 'dairy products', therefore it was difficult to distinguish which items were correct. If the respondent listed a series of dairy products with at least one correct item these were then collated into one group ('dairy produce') and only counted as one correct identification.

## 4 Findings

### 4.1 Current Trust Vitamin D Policies and Practice

Each Acute Trust and Primary Care Trust (PCT) completed the Provider services Trust proforma to establish current vitamin D policies and practices in place. Figure 1.1 contains a summary of the findings from each Trust. More detailed individual summaries can be found in Appendix 8.3.

**Figure 1: Summary of current Trust policy and practice findings**

Trust		Written vitamin D policy	Vitamin D team	Vitamin D representative /coordinator	Vitamin D information given to midwives/ health visitors	Vitamin D In-house leaflet	Vitamin D Training available	List of Healthy Start vitamin distributors
Acute Trusts	CMFT	✓	✗	✗	✓	✗	✗	✗
	LWH	✗	✓	✗	✗	✗	✗	✗
	PAT	✗	✗	✗	✓	✗	✓	✗
	SFT	✗	✗	✗	✓	✗	✗	✓
	WUTH	✗	✗	✗	✓	✗	✓	✗
	WWL	✗	✗	✗	✓	✗	✓	?
PCTs	NHS ALW	✗	?	✗	✗	✗	✓	✗
	NHS EL	✓	✓	✓	✓	✓	✓	✓
	NHS HMR	✗	✗	✗	✓	✓	✗	✗
	NHS LIV	✗	✗	✓	✓	✗	✗	✓
	NHS MAN	✗	✓	✓	✗	✗	✗	✗
	NHS WIR	✗	✗	✗	✗	✗	✗	✓

"?" indicates that information was missing

## 4.2 Staff Survey

### 4.2.1 Response Rate

A total of 178 health visitors (HV) and 206 midwives (MW) across 6 PCTs and 8 Acute Trusts participated in the vitamin D survey. Figures 2 and 3 present the number of respondents and the percentage of health visitors and midwives that responded from each Trust.

**Figure 2: Survey responses from PCTs**

PCT	No of responses	Total no. of HV	% of total HV
NHS ALW	21	80	26%
NHS EL	43	75	57%
NHS HMR	27	50	54%
NHS LIV	27	75	36%
NHS MAN	18	79	23%
NHS WIR	42	52	81%
Total	178	411	44%

**Figure 3: Survey responses from Acute Trusts**

Acute Trust	No. of responses	Total no. of MW	% of total MW
CMFT	58	214	27%
ELHT	7	unknown	-
LWH	30	303	10%
PAT	48	400	12%
RBH	14	unknown	-
SFT	25	158	16%
WUTH	15	158	9%
WWL	11	117	9%
Total	208	1350*	14%*

\*Total/percentage of midwives does not include data from ELHT and RBH.

We had a response rate of 44% for health visitors across the 6 PCTs, and 14% for midwives across 6 of the 8 Acute Trusts.

### 4.2.2 Knowledge of vitamin D

Respondents were asked a small number of questions pertaining to their knowledge regarding vitamin D that covered recommended daily allowances for pre- and post-natal women, sources of vitamin D, its purpose, and risk factors and symptoms of vitamin D deficiency (see appendix 8.2 for list of actual questions). The following figures present the findings regarding knowledge of vitamin D in midwives and health visitors.

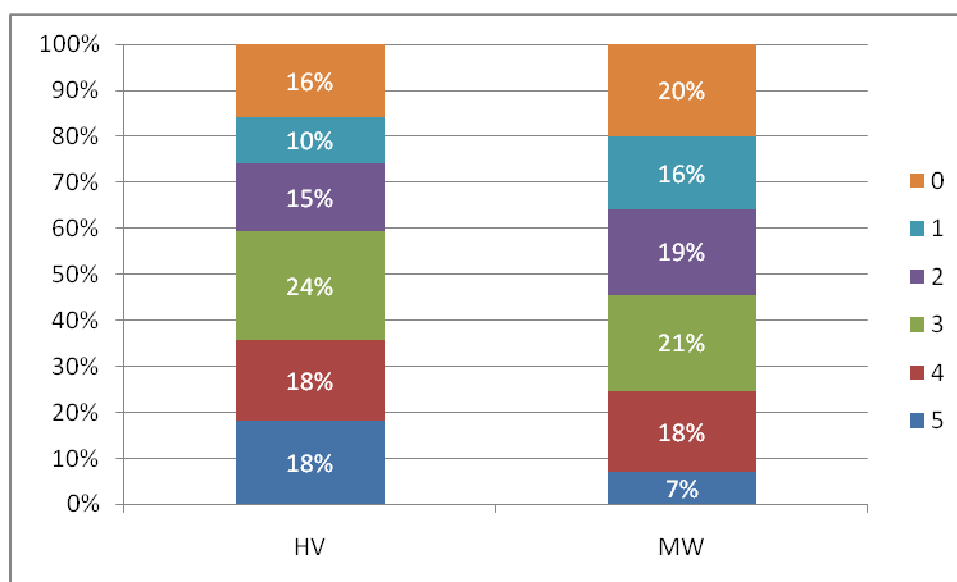
When asked to state the recommended daily allowance of vitamin D for pre- and post-natal women, approximately a third of both health visitors and midwives answered correctly (Fig 4). The majority of health visitors and midwives appeared to be unaware of the percentage of vitamin D which is obtained from the sun (Fig 4). However, the majority were aware of vitamin D's role in the absorption of calcium, but not for phosphorous (Fig 4).

**Figure 4: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb**

Correct identification of:	Answers	HV		MW	
		n	%	n	%
Recommended daily allowance of vitamin D for prenatal/postnatal women	10micrograms/day	67	37%	75	35%
Percentage of our vitamin D supply we obtain from the sun	≥90%	45	25%	25	12%
Minerals that vitamin D helps the body absorb	Calcium	135	74%	162	75%
	Phosphorous	30	17%	39	18%

Respondents were asked to list 5 food types (unprompted) that they would recommend to clients to increase their vitamin D uptake. Figure 5 below shows the number of correctly identified food types for health visitors and midwives.

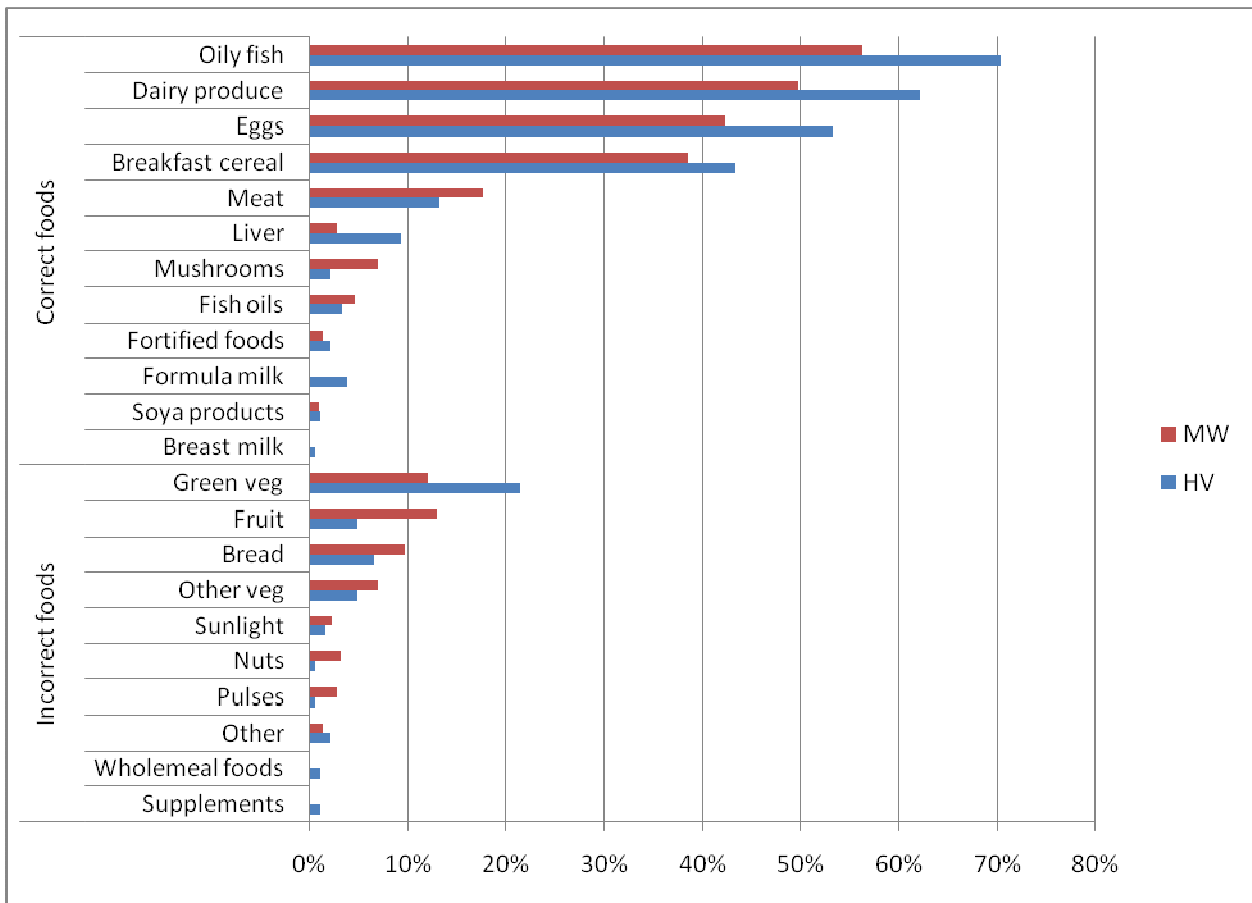
**Figure 5: No. of correctly identified food types by midwives and health visitors**



Within this sample, health visitors appeared to be more knowledgeable of vitamin D rich foods than midwives, with 60% able to identify 3 or more correct food types compared to 46% of midwives.

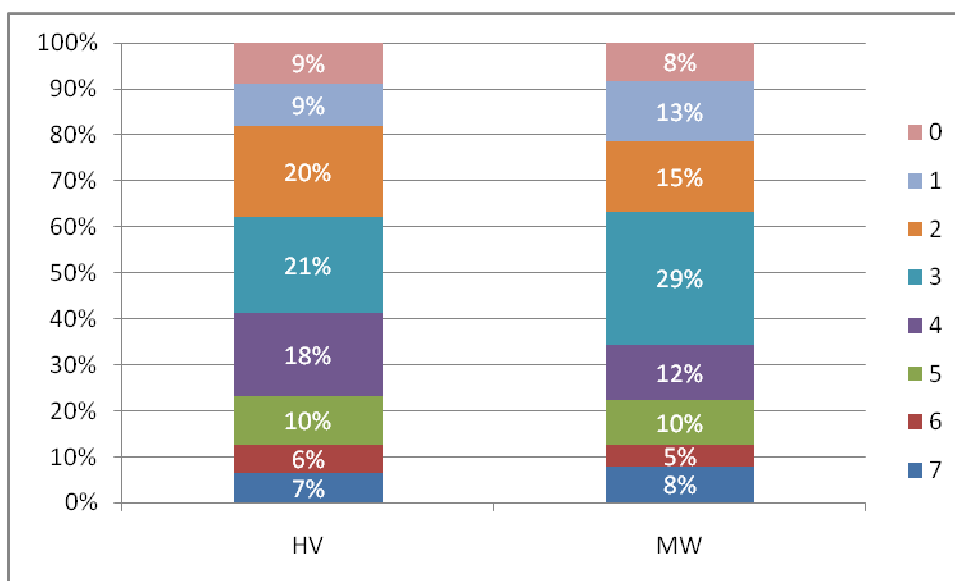
Figure 6 shows those food types that were correctly and incorrectly identified as vitamin D rich foods by midwives and health visitors. Oily fish was the most correctly identified food type (70% of health visitors and 56% of midwives), followed by dairy produce, eggs, breakfast cereals and meat. However, 22% of health visitors and 12% of midwives incorrectly identified green vegetables as a source of vitamin D, and a small number incorrectly identified fruit, bread, and other vegetables as sources of vitamin D.

**Figure 6: Correctly and incorrectly identified food types by midwives and health visitors**



Respondents were asked to identify symptoms or risk factors that would indicate a client may be at risk for vitamin D deficiency from a list of seven options. All 7 were risk factors or symptoms of vitamin D deficiency. Figure 7 shows the number of risk factors/symptoms correctly identified by midwives and health visitors.

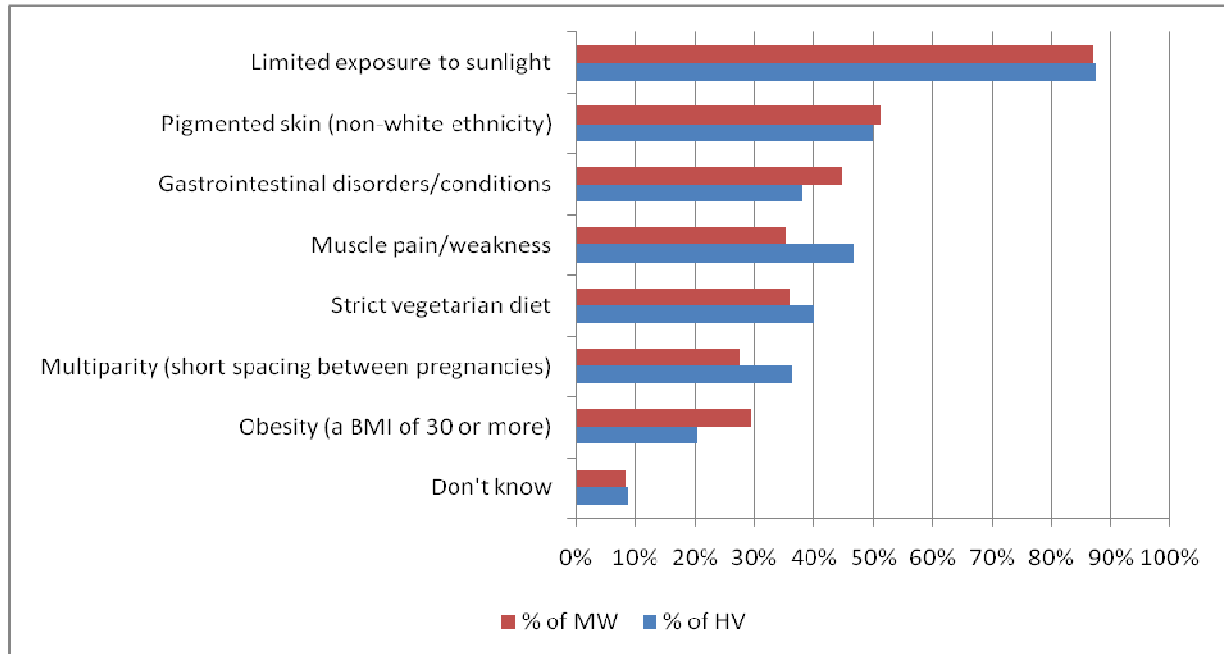
**Figure 7: No. of correctly identified risk factors/symptoms of vitamin D deficiency by midwives and health visitors**



The findings indicate that there is little difference in the knowledge of midwives and health visitors in this sample, with more than 60% in both groups able to identify 3 or more risk factors or symptoms.

Figure 8 shows which risk factors/symptoms were the most commonly identified. The most commonly identified risk factor was limited exposure to sunlight with almost 90% of both health visitors and midwives correctly identifying it. This compares to only 20% and 29% of health visitors and midwives respectively who correctly identified obesity as a risk factor for vitamin D deficiency.

**Figure 8: Most commonly identified risk factors/symptoms of vitamin D deficiency by midwives and health visitors**

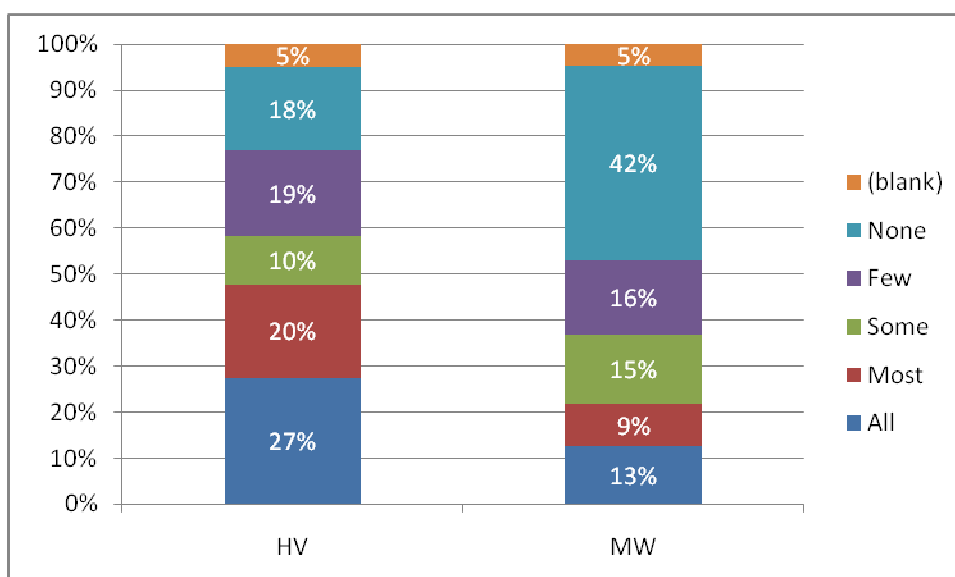


#### 4.2.3 Vitamin D training and Practice

Respondents were questioned about the role of vitamin D in their current practice and what training they had received (if any) regarding vitamin D.

When asked whether vitamin D was discussed in practice with clients, it appeared that this was more of the case with health visitors rather than midwives (Fig 9). Almost half (47%) of health visitors reported that they discuss vitamin D with 'all' or 'most' clients, compared to 22% of midwives.

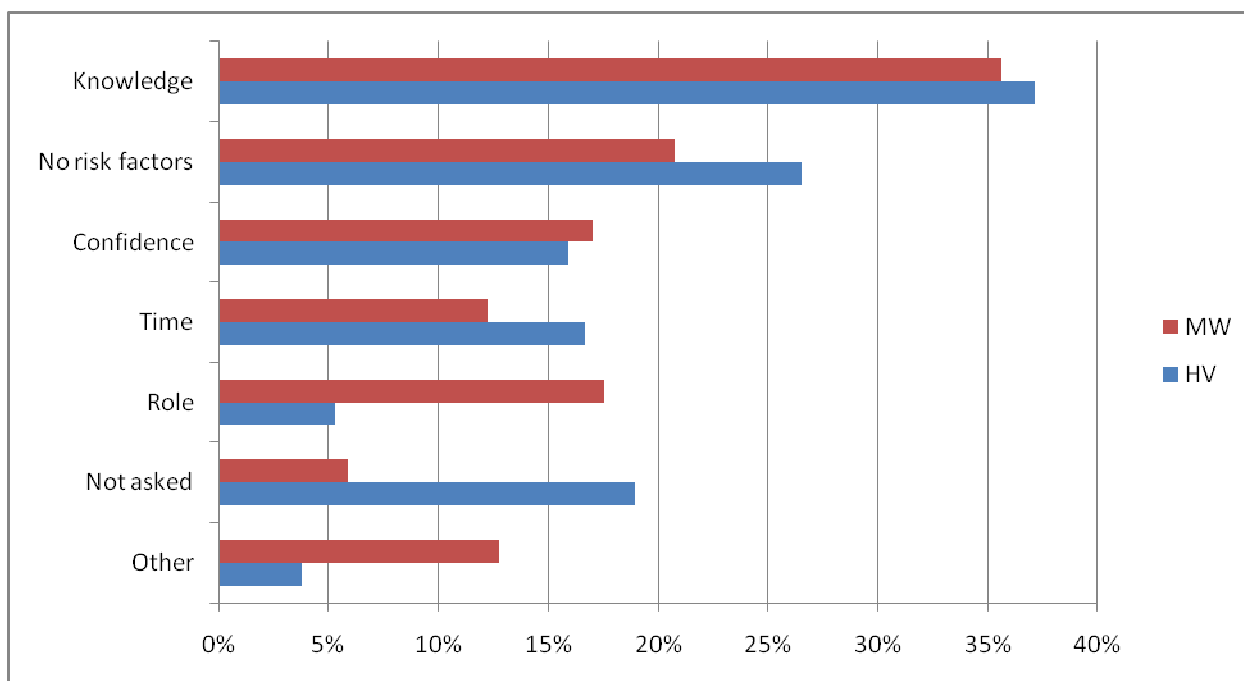
**Figure 9: Proportion of clients vitamin D is discussed with between midwives and health visitors**





Those that stated that they did not discuss vitamin D with 'all' clients were asked what their reasons were for not doing so. These are detailed in Figure 10 below.

**Figure 10: Reasons for not discussing vitamin D amongst midwives and health visitors who reported not discussing with 'all' clients**

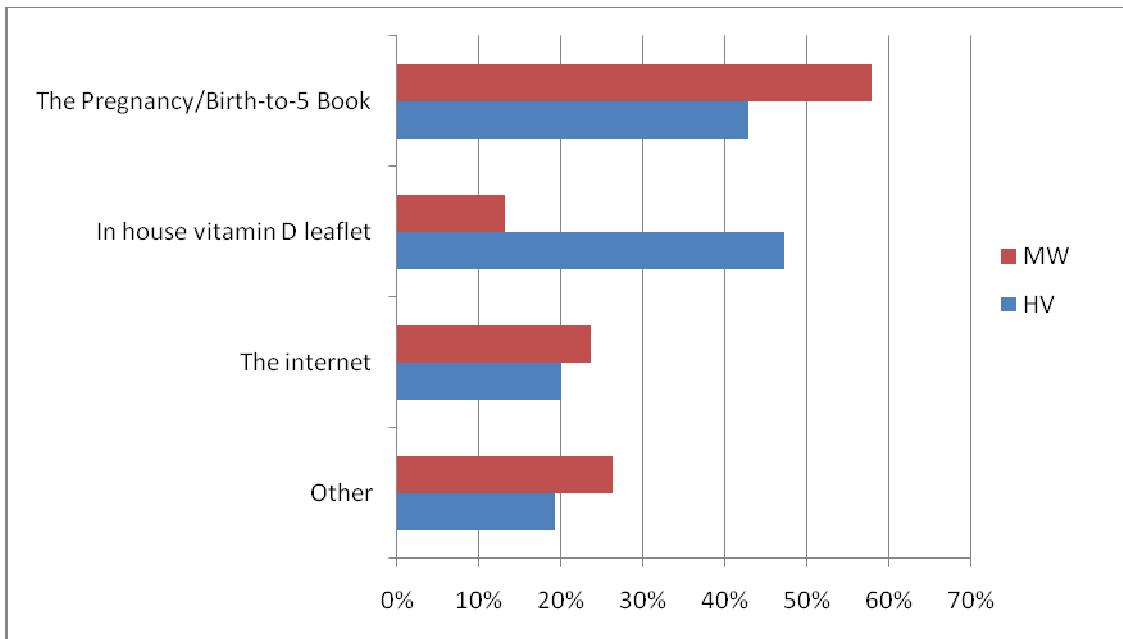


The midwife's or health visitor's lack of knowledge about vitamin D was the most reported reason for not discussing vitamin D with clients, followed by the client not presenting with any risk factors, lack of confidence in discussing vitamin D, not having enough time to discuss, not viewing vitamin D as part of their role, and the client not having asked about it. More midwives than health visitors selected that it was not part of their role as a reason for not discussing vitamin D with clients (18% vs. 5% respectively). Other reasons for not discussing vitamin D with all clients included that

- they were unaware of the need to discuss vitamin D,
- the information was available in the literature given to clients,
- conflicting advice,
- cost issues for those not eligible for Healthy Start vitamins
- and some reported forgetting to discuss it.

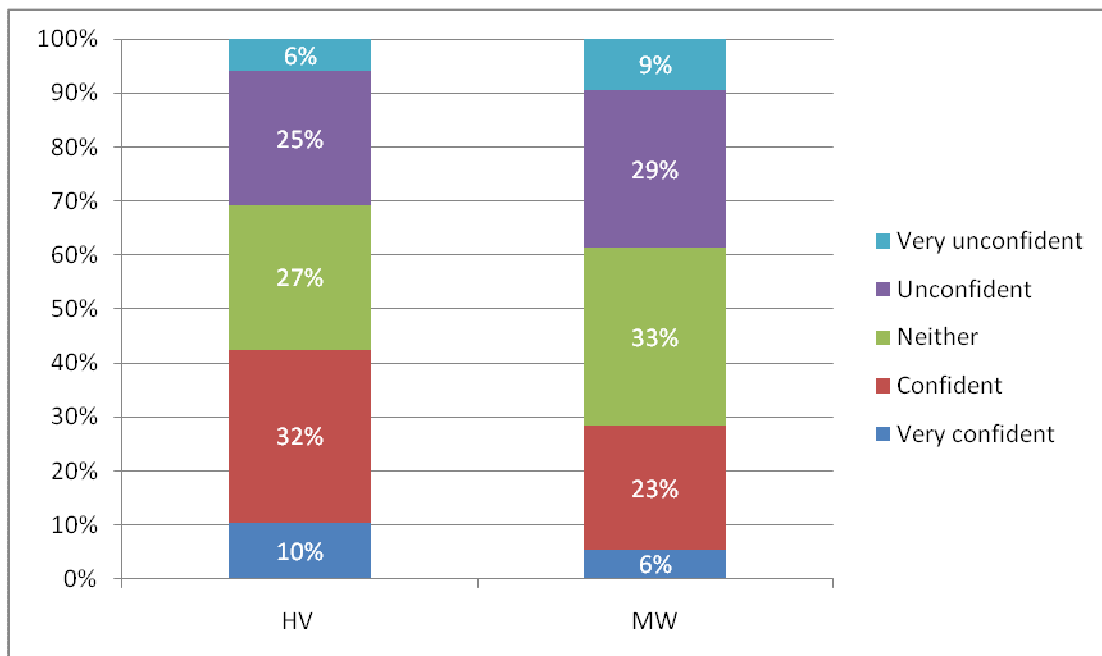
Those that reported discussing vitamin D with clients were asked what resources they referred to (if any) when discussing vitamin D (Fig 11). The Pregnancy/Birth-to-5 Book was the resource most likely to be used by midwives (58%), whereas health visitors were more likely to use an in-house vitamin D leaflet (47%).

**Figure 11: Resources referred to by midwives and health visitors when discussing vitamin D with clients**



Those that reported discussing vitamin D were asked to rate their confidence in speaking with clients on a scale from 1 to 5, with '1' being "very unconfident" and '5' being "very confident" (Fig 12). A total of 42% of health visitors reported being "confident" or "very confident" in discussing vitamin D, compared to 29% of midwives. The majority of midwives (33%) reported feeling "neither" confident or unconfident in discussing vitamin D.

**Figure 12: Confidence in discussing vitamin D with clients amongst midwives and health visitors**

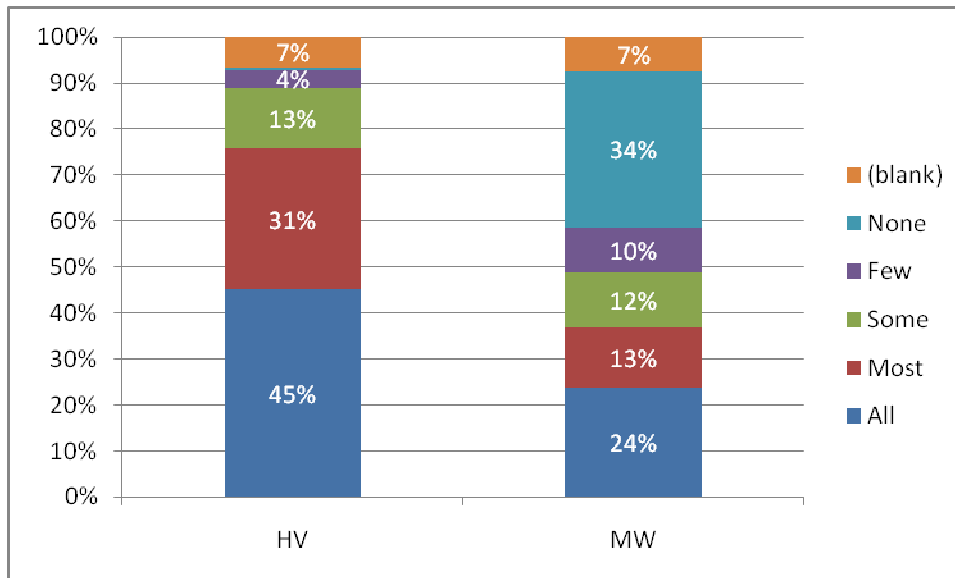


In addition, only 29% of health visitors and 13% of midwives reported having come across the DH leaflet<sup>15</sup>. Only 24% of health visitors and 11% of midwives reported having received training in vitamin D, yet 79% of health visitors and 78% of midwives thought it would be "useful" or "very useful" to have further training in this area.

#### 4.2.4 Healthy Start

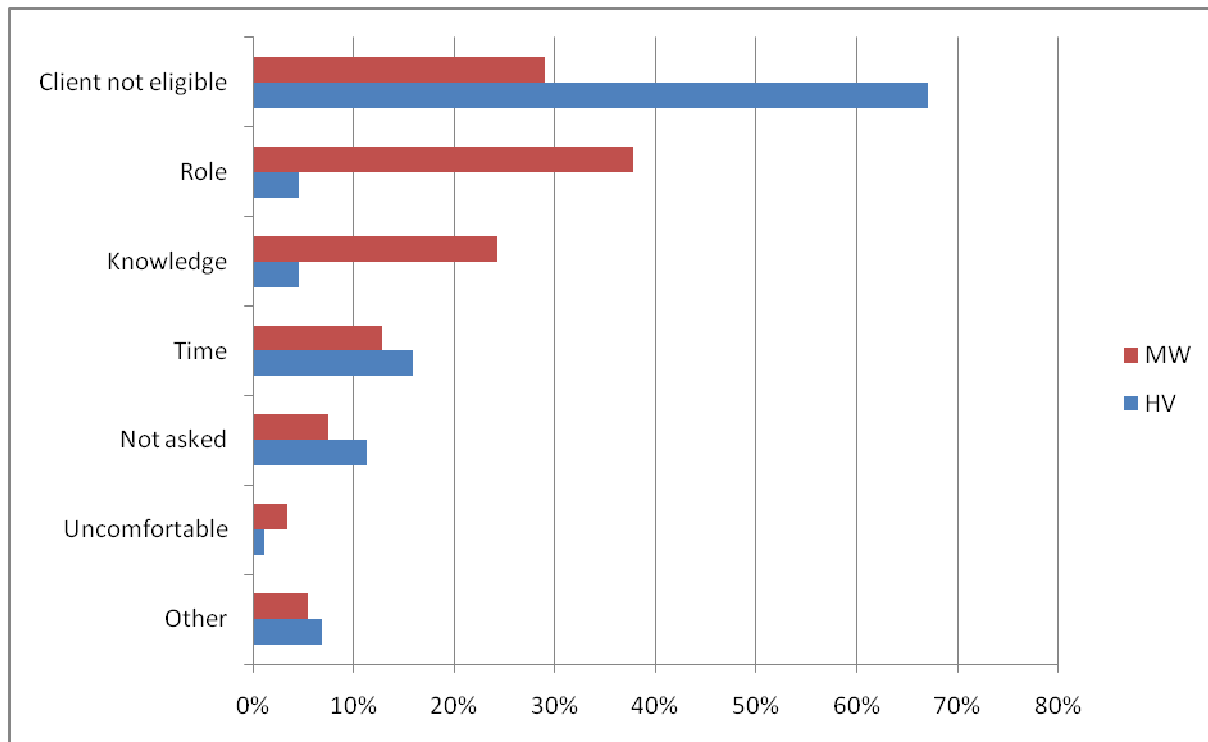
Respondents were asked about the role of the Healthy Start scheme within their current practice. When asked whether they discuss the Healthy Start scheme with clients (Fig 13), 76% of health visitors reported discussing Healthy Start with 'all' or 'most' clients, compared to 37% of midwives. Furthermore, only 1% of health visitors compared to 33% of midwives reported not discussing Healthy Start with any clients, however we suspect this may be due to the differing roles in midwifery, as highlighted in Figure 14.

**Figure 13: Proportion of clients Healthy Start is discussed with by midwives and health visitors**



Those midwives and health visitors who reported not discussing Healthy Start with all clients were then asked for their reasons; these are presented in Figure 14.

**Figure 14: Reasons for not discussing Healthy Start amongst midwives and health visitors who report not discussing with 'all' clients**

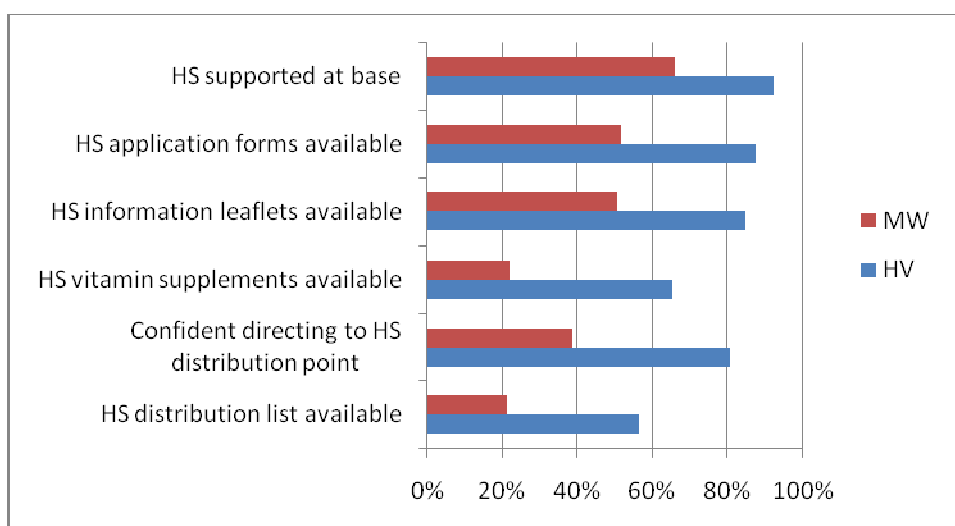


The most frequently stated reason by health visitors was that the clients were not eligible to receive Healthy Start (67%), followed by their not being enough time to discuss the issue

(16%), or that the client had not asked about it (12%). The most frequent reason given by midwives was that it was not seen as part of their role (37%), that the client was not eligible for Healthy Start (29%), lack of knowledge of Healthy Start (23%) and not having enough time to discuss (16%).

Midwives and health visitors were also asked about other practice issues relating to Healthy Start (Fig 15). When asked whether they were aware of the Healthy Start scheme being supported where the respondent was based, 92% of health visitors said 'yes' compared to only 66% of midwives. Approximately a quarter (23%) of midwives reported that they did not know whether Healthy Start was supported at their Trust, suggesting that in some cases knowledge of the Healthy Start scheme at a local level is lacking. Health visitors generally agreed that their base ensured adequate supplies of Healthy Start application forms (87%) and leaflets (85%), but this was less of the case with Healthy Start vitamins (65%). A similar pattern emerged for midwives but to a lesser degree, as it is clear that not all midwives would deal with the application process for Healthy Start. 57% of health visitors and 21% of midwives reported having a list of local Healthy Start vitamin distributors to refer clients to; and when asked about confidence in directing clients to Healthy Start distributors, 81% of health visitors were confident compared to only 39% of midwives.

**Figure 15: Healthy Start (HS) support, resource availability and distribution**



### 4.3 Staff survey findings by PCT

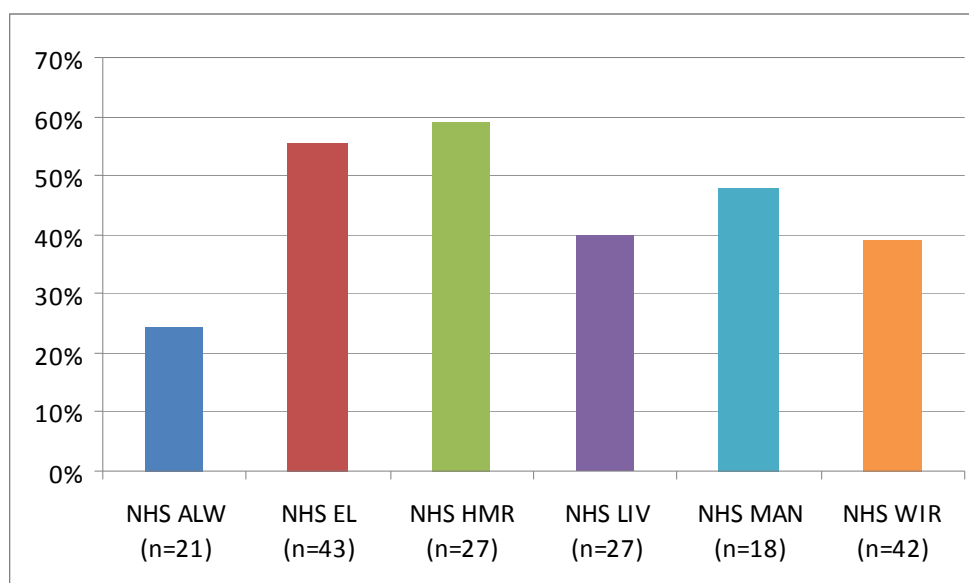
The following section details the findings from health visitors across the 6 participating PCTs. PCT names have been abbreviated, and a full list of abbreviations can be found in Appendix 8.4.1.

#### 4.3.1 Knowledge Results

Total scores were calculated for the knowledge section and the average scores for each PCT are shown in Figure 16. Health visitors at NHS HMR scored the highest with 59%, closely followed by NHS EL with 55%. NHS ALW had the lowest average score, with 24% of the knowledge questions correctly answered.

***Unless otherwise stated, the colours used to represent each PCT within Figure 16 will continue throughout the remainder of this section.***

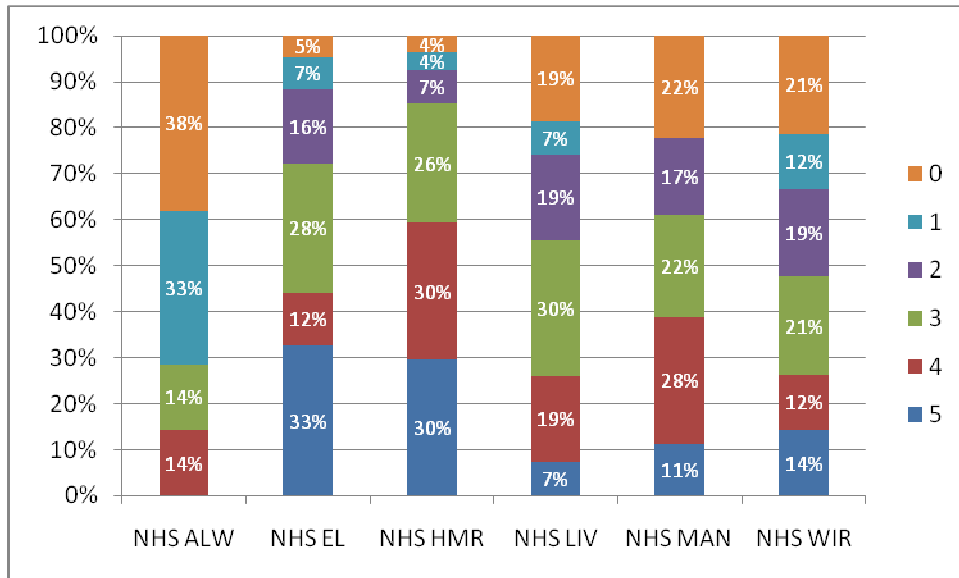
**Figure 16: Total vitamin D knowledge scores by PCT**



More than 60% of the health visitors at NHS HMR correctly identified the recommended daily allowance (RDA) of vitamin D for pre- and post-natal women in the UK as 10micrograms/day, followed by 50% at NHS MAN. None of the health visitors at NHS ALW identified the correct RDA. More than 50% of the health visitors at NHS EL correctly stated that more than 90% of our vitamin D supply is obtained from the sun, compared to only 5% at NHS LIV. Almost 80% of health visitors at the majority of the PCTs were aware that vitamin D helps the body absorb calcium, but the majority of health visitors at each PCT were unaware of vitamin D's involvement in the absorption of phosphorous (see appendix 8.5.1, Fig 28).

Health visitors were asked to list up to five food sources that they would recommend to clients to increase their vitamin D uptake. Figure 17 shows the number of foods correctly identified by the health visitors at each PCT. NHS EL and NHS HMR had the highest percentage of health visitors who were able to identify five vitamin D rich food sources. However, 71% of the health visitors at NHS ALW could only correctly identify one food source or none at all.

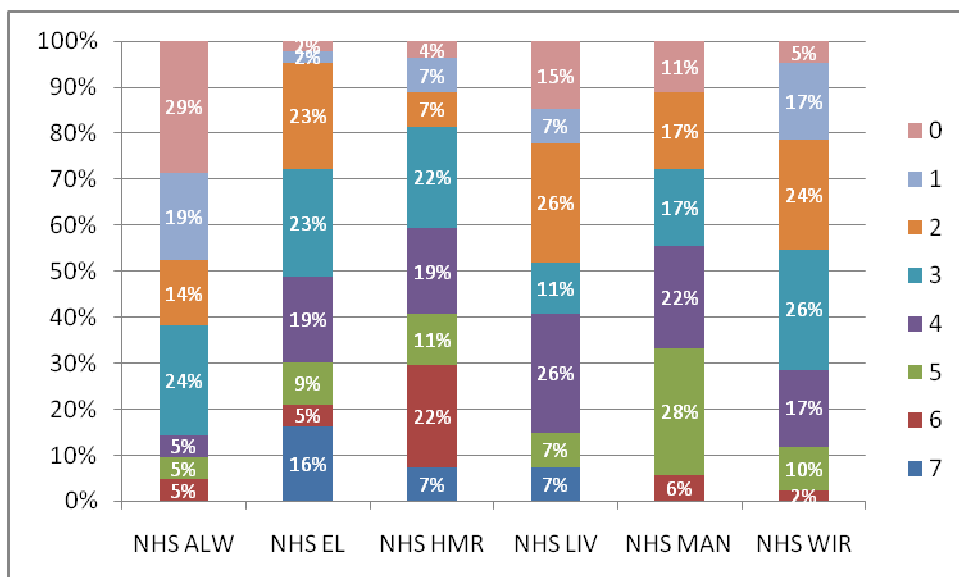
**Figure 17: No. of correctly identified food types by PCT**



Amongst the correctly identified food types, oily fish was the most common (more than 80% at NHS HMR and NHS EL) followed by dairy products, eggs and breakfast cereals. **However, it must be noted that not all dairy products contain vitamin D, and that it is usually only present in some fortified spreads, margarines and in some yoghurt products, and the client needs to be made aware to check the label on products to confirm vitamin D fortification.** Amongst the incorrectly identified food types, the majority of those identified were only in small amounts with the exception of 'green vegetables', where nearly 40% of those at NHS ALW incorrectly identified this as a vitamin D rich food source (See appendix 8.5.1, Fig 29).

Health visitors were asked to identify symptoms or risk factors which may identify a client as being deficient in vitamin D from a list. All of the listed symptoms and risk factors may identify a client as being deficient in vitamin D. Figure 18 shows the number of correctly identified symptoms/risk factors from the health visitors at each PCT. A total of 17% of the health visitors at NHS EL identified all 7 symptoms/risk factors, and more than 30% of the health visitors at NHS HMR correctly identified 6 or more of the symptoms/risk factors. NHS ALW had the highest percentage of health visitors (28%) who did not identify any of the symptoms/risk factors associated with vitamin D deficiency.

**Figure 18: No. of correctly identified risk factors/symptoms of vitamin D deficiency by PCT**



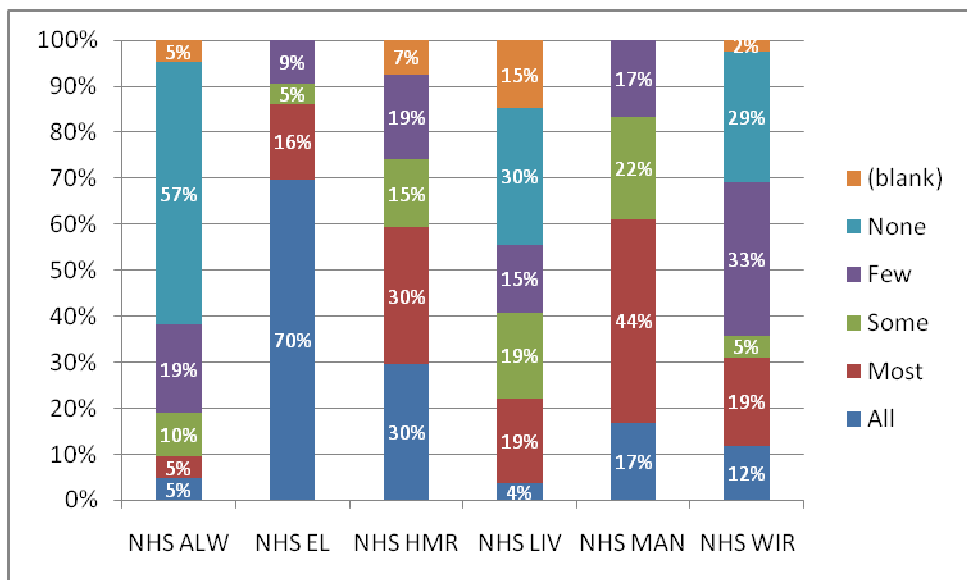
The most frequently identified risk factor/symptom by health visitors was “limited exposure to sunlight”, correctly identified by more than 80% amongst 5 of the 6 PCTs, followed by pigmented skin, muscle pain/weakness, and strict vegetarian diet. The remaining risk factors/symptoms (gastrointestinal disorders/conditions, multiparity/short spacing between pregnancy, and obesity) were identified by less than 50% of health visitors at each of PCT, with the exception of ‘multiparity’ at NHS EL (identified by 53%), and 29% of health visitors at NHS ALW were unable to identify any risk factors/symptoms stating that they ‘don’t know’ (see Appendix 8.5.1, Fig 30).

### 4.3.2 Vitamin D practice

The second part of the survey looked at current vitamin D practice and training amongst the health visitors at each PCT.

Firstly, health visitors were asked whether vitamin D was something that they discussed with clients. Figure 19 presents their responses. A total of 70% of health visitors at NHS EL reported discussing vitamin D with all clients, and more than 50% of health visitors at NHS HMR and NHS MAN reported discussing vitamin D with all or most of their clients. In contrast, nearly 57% of health visitors at NHS ALW reported not discussing vitamin D with any clients.

**Figure 19: Proportion of clients vitamin D is discussed with by PCT**



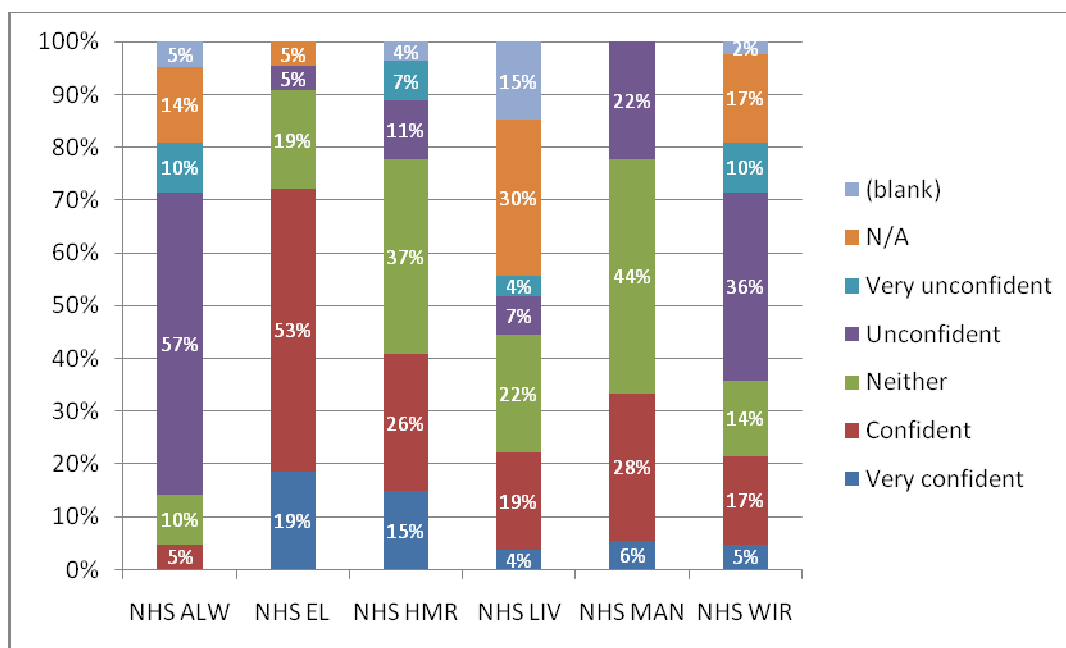
Secondly, those health visitors that did not discuss vitamin D with ‘all’ their clients were asked what their reasons were for this. Overall, knowledge of vitamin D was the most common reason, especially for the health visitors at NHS ALW (60%) and NHS WIR (51%). The client not presenting with any of the risk factors was the main reason for not discussing vitamin D at NHS MAN (60%). The client having not asked about it was a frequently reported reason at NHS EL (31%) and NHS WIR (27%), and not having enough time to discuss it was frequently reported at NHS EL (31%) and NHS LIV (27%). Confidence appeared to be a particular issue at NHS WIR (30%); and finally some health visitors at NHS EL (15%), NHS ALW (10%) and NHS WIR (8%) did not see it as part of their role (see appendix 8.5.1, Fig 31).

Those health visitors that reported discussing vitamin D with clients were asked whether they refer to any resources to aid their discussion. The most popular response was The Pregnancy/Birth-to-5 book (between 37% and 53% across all PCTs), followed by an in-house leaflet, which appears particularly popular at NHS EL, with nearly 79% reporting using an in-house leaflet (see appendix 8.5.1, Fig 32).

Health visitors from each PCT were asked how confident they felt in advising clients about vitamin D (Fig 20). The health visitors at NHS EL appear to feel the most confident with 72%

stating that they felt “confident” or “very confident”. The health visitors at NHS ALW appeared least confident, with 46% reporting feeling “unconfident” or “very unconfident”.

**Figure 20: Confidence in discussing vitamin D with clients amongst health visitors by PCT**



Health visitors at each PCT were asked whether they had ever come across the Department of Health’s vitamin D leaflet specifically for health professionals<sup>15</sup>. 56% of health visitors at NHS HMR reported that they recognised it, followed by 43% of health visitors at NHS WIR. However, less than 10% of health visitors at NHS ALW and NHS LIV reported having come across the leaflet (see Appendix 8.5.1, Fig 33).

Health visitors were also asked if they had undergone any training which incorporated vitamin D supplementation for pre- and post-natal women. 70% of health visitors at NHS EL reported having received training, but low levels of training (<26%) were reported at the remaining PCT’s, with no health visitors at NHS ALW or NHS WIR reporting that they had received any training in vitamin D supplementation (see Appendix 8.5.1, Fig 33).

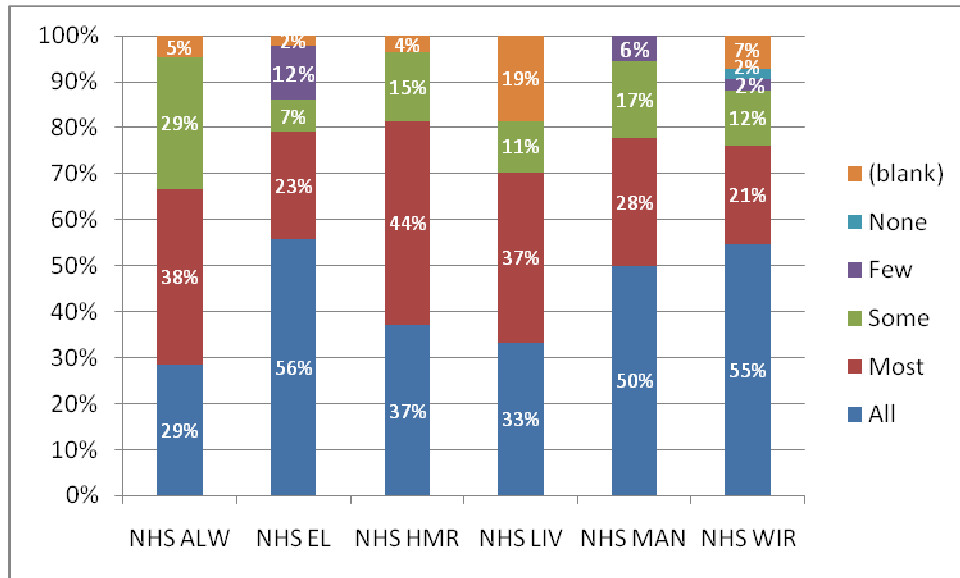
All health visitors were asked whether they thought training in vitamin D would be useful on a scale of ‘1’ (‘not at all useful’) to ‘5’ (‘very useful’). More than 70% at each PCT thought that training would be ‘very useful’ or ‘useful’, and very few health visitors reported that they would not find training in this area useful (see Appendix 8.5.1, Fig 34).

### 4.3.3 Healthy Start

The final section of the survey focussed on the role of the Healthy Start scheme. The majority of health visitors reported that they discussed the Healthy Start scheme with all clients, with 50% or more at NHS EL, NHS WIR and NHS MAN (Fig 21). Very few health visitors reported that they discussed Healthy Start with “few” or “no clients” at each PCT (<12%).



**Figure 21: Proportion of clients Healthy Start is discussed with by PCT**



The majority of health visitors reported that the reason for not discussing Healthy Start with all clients was the client not being eligible for the Healthy Start scheme, which was the highest response for NHS WIR (68%), NHS HMR (76%) and NHS ALW (67%). Not having enough time to discuss the Healthy Start scheme was most frequently reported at NHS MAN (44%) and the client not having asked about Healthy Start were seen as other reasons for not discussing it, particularly at NHS ALW (20%). A small number of respondents from NHS EL (11%) and NHS WIR (11%) reported lack of knowledge, and 21% at NHS EL viewed discussing Healthy Start as not part of their role (see Appendix 8.5.1, Fig 35).

Further questions were asked about support and availability of aspects of the Healthy Start scheme. The majority of health visitors reported that Healthy Start was supported at their base, and that Healthy Start applications and leaflets were readily available in their place of work at all PCTs. The availability of Healthy Start vitamin supplements at their place of work was highly reported at NHS EL (93%) but was much lower at the remaining Trusts (38-67%). The majority of health visitors at each PCT were also confident in directing clients to a Healthy Start distribution point, but the percentage of health visitors reporting having access to a list of Healthy Start distributors in their area was much lower, particularly NHS ALW (38%) and NHS MAN (48%) (see Appendix 8.5.1, Fig 36).

## 4.4 Staff survey findings by Acute Trust

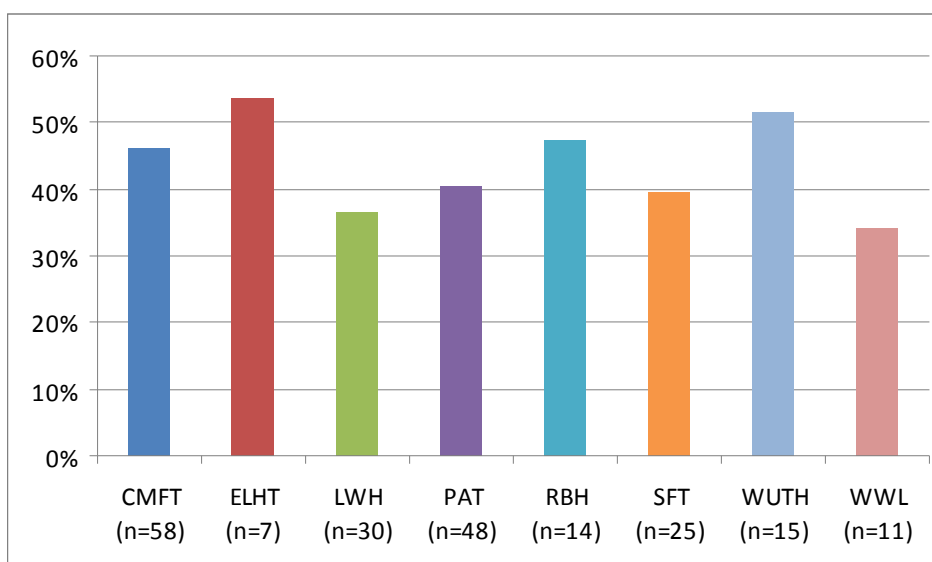
The following section details findings from midwives at the 8 participating Acute Trusts. However, it must be noted that there were very few respondents from ELHT (n=7). Acute Trust names have been abbreviated, and a full list of abbreviations can be found in Appendix 8.4.2.

### 4.4.1 Knowledge findings

Total scores were calculated for the knowledge section and the average score for each Acute Trust are shown in Figure 22 below. Despite the very low response rate from ELHT (n=7), they had the highest average knowledge score (54%), followed by WUTH (52%), RBH (47%) and CMFT (46%). The lowest average percentage score was from WWL, with an average of 34% of questions correctly answered by midwives at their Trust.

***Unless otherwise stated, the colours used to represent each Acute Trust within the following figures will continue throughout the remainder of this section.***

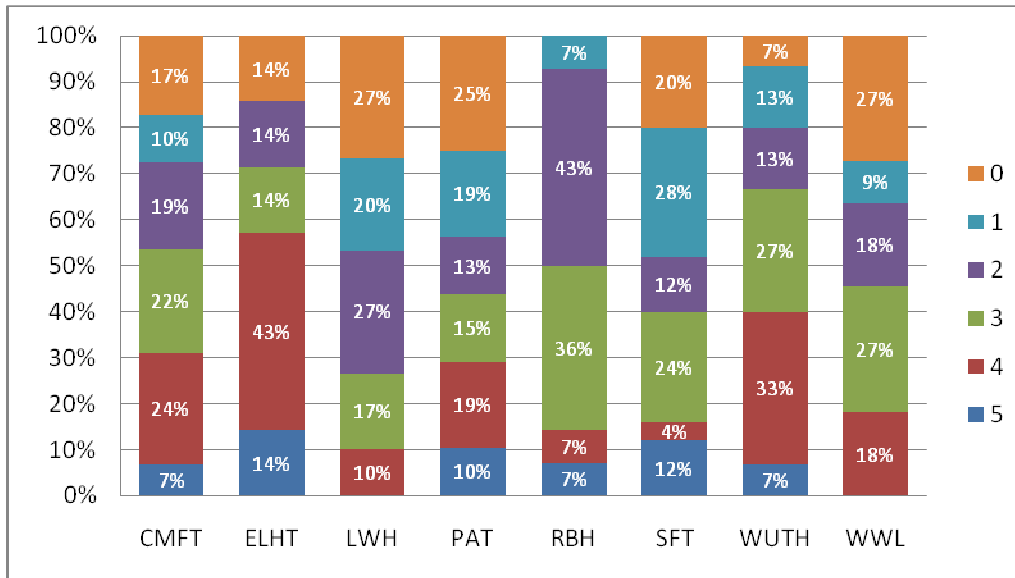
**Figure 22: Total vitamin D knowledge scores by Acute Trust**



A total of 60% of the midwives at WUTH correctly identified the recommended daily allowance (RDA) of vitamin D for pre- and post-natal women in the UK as 10 micrograms/day, followed by 50% at SFT, compared to only 25% of midwives at PAT. Less than 20% of the midwives at each of the Acute Trusts knew that more than 90% of our vitamin D supply is obtained from the sun, and none of the midwives knew this at WWL. Between 68% (SFT) and 87% (WUTH) of midwives at all the Acute Trusts were aware that vitamin D helps the body absorb calcium, but the majority of midwives at each Acute Trust were unaware of vitamin D's involvement in the absorption of phosphorous (>71%) (see Appendix 8.5.2, Fig 37).

Midwives were asked to list up to five food sources (unprompted) that they would recommend to clients to increase their vitamin D uptake. Figure 23 below shows the number of foods correctly identified by the midwives at each Acute Trust. ELHT had the highest percentage of midwives who were able to identify five vitamin D rich food sources (14%). However, 48% of midwives at SFT were only able to identify one or none at all.

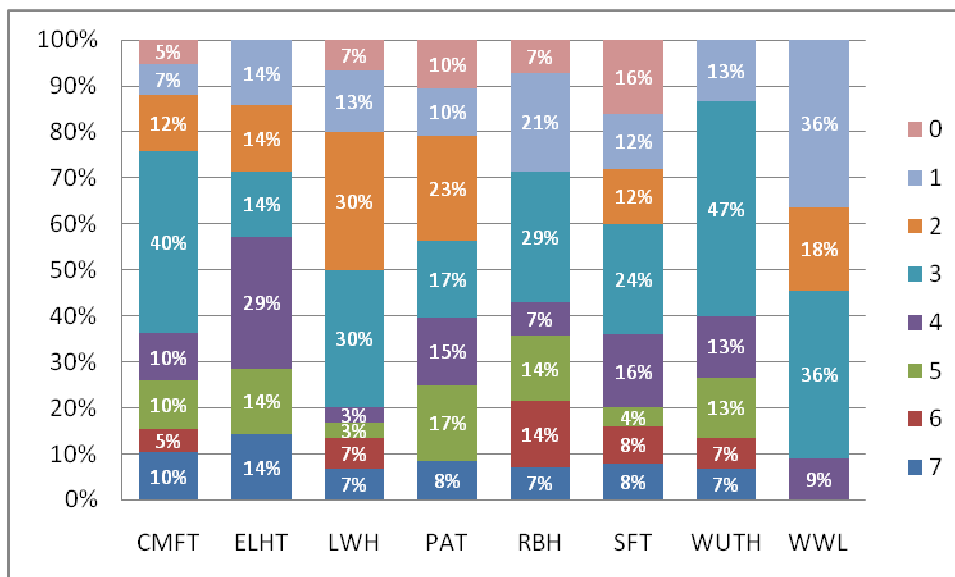
**Figure 23: No. of correctly identified food types by Acute Trust**



Amongst the correctly identified food types, oily fish was the most common (more than 60% at RBH, ELHT, WWL and WUTH, but only 37% at LWH), followed by dairy products (more than 60% at ELHT and WUTH, but only 21% at RBH), eggs (79% at RBH, but only 28% at SFT) and breakfast cereals (60% at WUTH, but only 9% at WWL). **However, it must be noted that not all dairy products contain vitamin D, and that it is usually only present in some fortified spreads, margarines and in some yoghurt products, and the client needs to be made aware to check the label on products to confirm vitamin D fortification.** 'Green veg' topped the list of incorrectly identified vitamin D rich foods (21% at PAT), closely followed by 'Fruit' (20% at LWH) and 'Bread' (33% at WUTH) (see Appendix 8.5.2, Fig 38).

Midwives were asked to identify symptoms or risk factors which may identify a client as being deficient in vitamin D from a list. All of the listed symptoms and risk factors may identify a client as being deficient in vitamin D. Figure 24 shows the number of correctly identified symptoms/risk factors from the midwives at each Acute Trust. Just over 10% of midwives at ELHT and CMFT were able to identify all 7 riskfactors/symptoms, with the majority able to identify 3. SFT had the highest percentage of midwives (16%) who could not identify any of the symptoms/risk factors associated with vitamin D deficiency.

**Figure 24: No. of correctly identified risk factors/symptoms of vitamin D deficiency by Acute Trust**



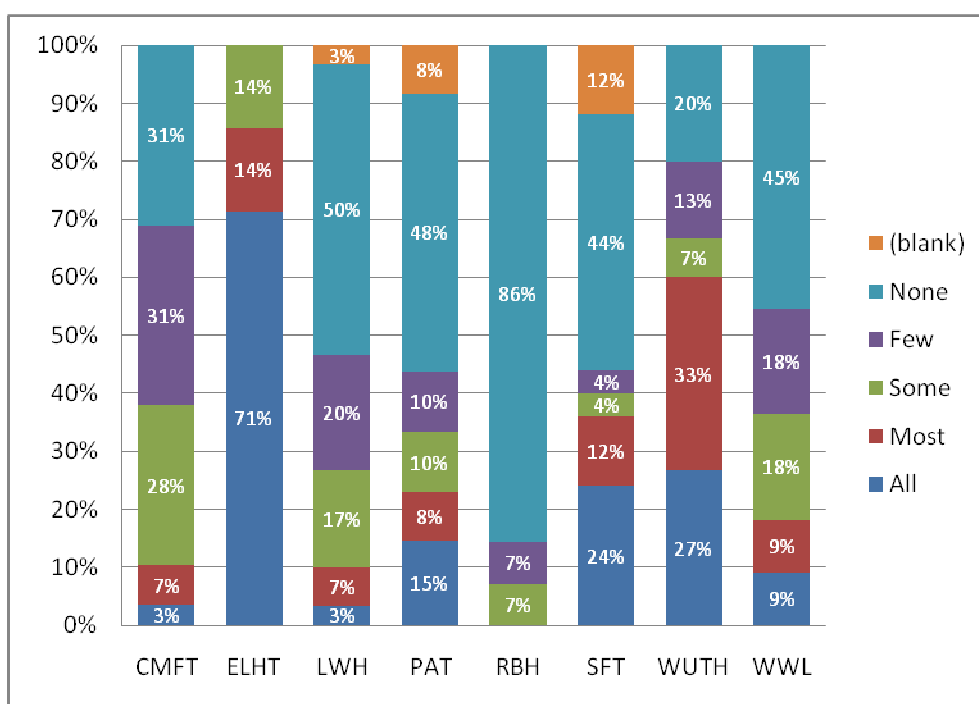
The most popular being "limited exposure to sunlight", correctly identified by more than 70% of midwives at each Trust, followed by pigmented skin (ranging from 36% at WWL to 71% at RBH, and gastrointestinal disorders (averaging between 40% and 50% at most Trusts. The remaining risk factors/symptoms were identified by less than 50% of midwives at each Acute Trust, and 16% of midwives at SFT were unable to identify any risk factors/symptoms stating that they 'don't know' (see Appendix 8.5.2, Fig 39).

#### 4.4.2 Vitamin D practice

The second part of the survey looked at current vitamin D practice and training amongst the midwives' at each Trust.

Firstly, midwives' were asked whether vitamin D was something that they discussed with clients. Figure 25 presents their responses. 85% of midwives' at ELHT reported discussing vitamin D with "all" or "most" clients, followed by 60% at WUTH. In contrast, 86% of midwives at RBH reported not discussing vitamin D with any clients.

**Figure 25: Proportion of clients vitamin D is discussed with by Acute Trust**

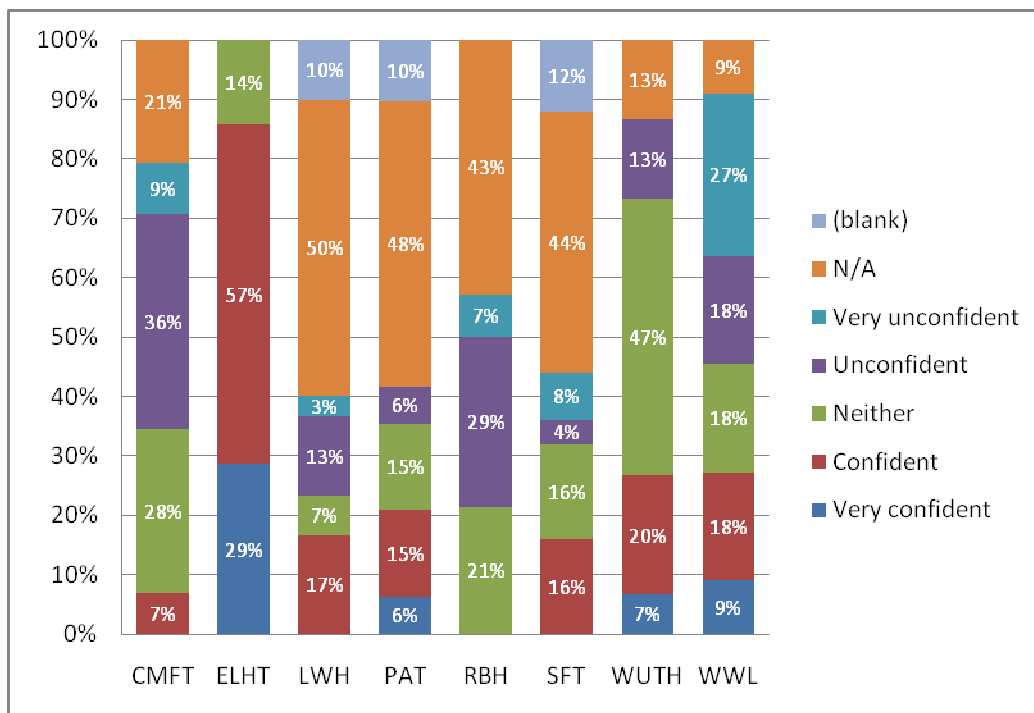


Secondly, those midwives' that did not discuss vitamin D with all their clients were asked what the reasons were for this. Overall, knowledge of vitamin D was the most frequently cited reason, especially for the midwives at WWL (40%) and PAT (44%). Over half (57%) of the midwives at RBH and 50% of the midwives at ELHT did not view discussing vitamin D as part of their role, however due to the small numbers of responses from both these Trusts this may not be representative. Between 10% and 20% of midwives that did not discuss vitamin D with all clients from the remaining Trusts reported not perceiving it as part of their role. Confidence appeared to be an issue at CMFT with 30%, and 36% of midwives at WUTH thought they did not have enough time to discuss vitamin D with clients (see Appendix 8.5.2, Fig 38).

Those midwives that reported discussing vitamin D with clients were asked whether they referred to any resources to aid discussion. The most common response was The Pregnancy/Birth-to-5 book with 30% to 40% at the majority of Trusts, followed by using the internet, which appeared most popular at WUTH (47%), and an in-house leaflet reported to be used by 71% of the midwives at ELHT (see Appendix 8.5.2, Fig 41).

Midwives from each Trust were asked how confident they felt in advising clients about vitamin D (Fig 26). The midwives at ELHT appear to feel the most confident, with more than 80% stating that they felt "confident" or "very confident", compared to the midwives at CMFT, WWL and RBH with more than 30% feeling "unconfident" or "very unconfident".

**Figure 26: Confidence in discussing vitamin D with clients amongst midwives by Acute Trust**



Midwives’ at each Trust were asked about whether they had ever come across the Department of Health’s vitamin D leaflet specifically for health professionals<sup>15</sup>. A total of 73% of midwives’ at WUTH reported that they recognised it. However, less than 10% of midwives’ at CMFT, LWH, SFT, and none of the midwives at RBH, reported having come across the leaflet (see Appendix 8.5.2, Fig 42).

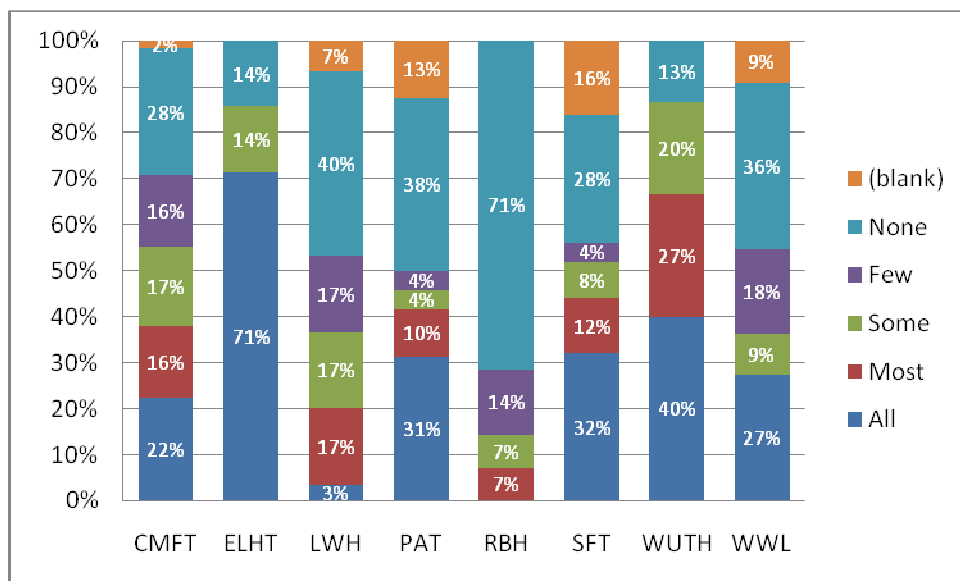
Midwives’ were also asked if they had undergone any training which incorporated vitamin D supplementation for pre- and post-natal women. Over half (57%) of midwives at ELHT reported having received training, but low levels of training were reported amongst the midwives’ at the remaining Trusts (between 5% at CMFT and 20% at SFT) (see Appendix 8.5.2, Fig 42).

All midwives’ were asked whether they thought training in vitamin D would be useful on a scale of “1” (“not at all useful”) to “5”, (“very useful”). 88% of midwives at CMFT, and more than 70% of midwives at remaining Trusts, thought training would be “very useful” or “useful”. Very few midwives reported that they would find training in this area “not useful” (see Appendix 8.5.2, Fig 43).

#### 4.4.3 Healthy Start

The final section of the survey focussed on the role of the Healthy Start scheme. Firstly we asked all the midwives’ whether they discuss the Healthy Start scheme with clients (Fig 27).

**Figure 27: Proportion of clients Healthy Start is discussed with by Acute Trust**



71% of midwives at ELHT reported that they discussed the Healthy Start scheme with 'all' clients, and 67% of midwives at WUTH reported that they discussed Healthy Start with 'all' or 'most' clients. However, in the remaining Trusts, less than 40% discussed Healthy Start with all clients, and large proportions of midwives reported that they did not discuss Healthy Start with any clients (71% at RBH to 13% at WUTH).

A large proportion of midwives reported that the reason for not discussing Healthy Start with all clients was that it was not seen as part of their role; this was most evident at RBH, where 64% of respondents felt this was not part of their role. The client being not eligible for the Healthy Start scheme was a frequent response at WUTH (67%). A lack of knowledge and not having enough time to discuss the Healthy Start scheme was most frequently reported at WWL (38% and 25% respectively), and a small number of respondents reported reasons such as the "client had not asked about it", or they felt uncomfortable bringing up the subject of Healthy Start with clients (see Appendix 8.5.2, Fig 44).

The majority of midwives reported that Healthy Start is supported at their base, with the exception of LWH where 47% agreed to this statement. The awareness of the availability of Healthy Start application forms and leaflets were reported by the majority at most Trusts, with the exception of midwives at WWL, LWH and RBH (<45% and <36% respectively). The awareness of the availability of Healthy Start vitamin supplements at place of work was highly reported at ELHT (71%), but was much lower at the remaining Trusts (between 14% at CMFT and 27% at PAT and WWL). Confidence in directing clients to a Healthy Start distribution point, and having a list of Healthy Start distributors was more frequently reported at ELHT (57%) and WUTH (53%), but was much less amongst the remaining Trusts (between 7% at RBH and 27% at PAT) (see Appendix 8.5.2, Fig 45).

## 5 Discussion and Conclusion

### 5.1 Discussion

Our provider services audit looked at individual Trust policies as a whole to determine what practices were in place amongst selected Acute Trusts and PCTs. Only one Acute Trust (Central Manchester University Hospitals (CMFT)) and one Primary Care Trust (NHS East Lancashire (NHS EL)) reported having a vitamin D policy in place. Four Trusts had either a team of experts available with a role relating to vitamin D or a vitamin D representative/coordinator (Liverpool Women's (LWH); NHS EL; Liverpool Community Health (NHS LIV); and NHS Manchester (NHS MAN)). Just under half of the Trusts reported incorporating vitamin D into training packages (Acute Trusts: Pennine Acute Hospitals (PAT), Wirral University Teaching Hospital (WUTH), Wrightington, Wigan and Leigh (WWL); PCTs: NHS Ashton, Leigh and Wigan (NHS ALW); and NHS EL). However, the majority of Trusts did report giving information about vitamin D to their staff (Acute Trusts: all except LWH; and the following PCTs did not provide information for staff: NHS ALW, NHS MAN, and NHS Wirral (NHS WIR)).

It should be noted that there was a substantial difference in reported vitamin D policies, practice and personnel evident between PCTs. In particular, NHS EL reported having every aspect relating to vitamin D in place, while the remaining PCTs reported having between one to three of the potential policies, practice and personnel. It is clear that having all these things in place at NHS EL benefitted health visitors and their clients: vitamin D knowledge amongst their health visitors was only just surpassed by NHS Heywood, Middleton and Rochdale (NHS HMR), they had by far the highest percentage (70%) reporting that they discussed vitamin D with "all" clients (again NHS HMR did relatively well, but only 30% reported discussing vitamin D with all clients) and they had the highest levels of confidence in discussing vitamin D and by far the highest percentage of trained health visitors (70%). NHS ALW appeared to have health visitors with the least amount of knowledge and confidence around vitamin D, which was reflected in the finding that over half reported that they never discussed vitamin D with clients. However over 70% thought that training would be "useful" or "very useful", indicating that there is potential to improve vitamin D practice amongst NHS ALW's health visitors if they are provided with appropriate support.

Policies, practice and personnel were fairly equally lacking amongst the Acute Trusts; but most did have vitamin D information available for midwives. Perhaps not surprisingly midwives at East Lancashire Hospitals (ELHT) had the highest levels of knowledge relating to vitamin D, the highest percentage reporting that they discussed vitamin D and Healthy Start with "all" clients, highest levels of confidence and training. It should however be noted that the sample at ELHT was only seven and therefore cannot be representative of the whole Trust. Midwives vitamin D knowledge did not vary too much between Acute Trusts. A substantial percentage of midwives at several Trusts (LWH, PAT, Royal Bolton Hospital (RBH), Stockport (SFT) and WWL) reported never discussing vitamin D with clients; RBH was of particular concern (over 80% reported never discussing vitamin D). As with NHS ALW, many midwives at RBH would find training "useful" or "very useful". It is also worth highlighting that midwives at CMFT, RBH, and in particular WWL reported relatively high levels of "unconfident" and "very unconfident" in discussing vitamin D with clients.

The findings from staff survey suggest that **there is a lack of knowledge amongst midwives and health visitors about the importance and facts surrounding vitamin D.** Very few midwives and health visitors within this audit were aware that more than 90% of our vitamin D supply is obtained from sunlight and less than 10% is derived from food sources. The audit also revealed that less than 40% midwives and health visitors overall were able to identify the correct recommended daily allowance (RDA) for the supplementation of vitamin D for pregnant women (10 micrograms/day); but there was considerable variation between Trusts, with none of the midwives at NHS ALW correctly identifying the RDA, to over 60% correct at NHS HMR and 60% of health visitors correct at NHS WWL. A high percentage of health visitors and midwives were aware of vitamin D's role in the absorption of calcium, but

less than 20% were aware of its role to help absorb phosphate. The majority of midwives and health visitors were able to correctly identify 2-3 vitamin D rich food sources such as oily fish and eggs, but there were also many who identified food sources which contain no vitamin D such as green vegetables and fruit. However, due to the variance in responses to the question requesting the identification of 5 food sources that were rich in vitamin D, responses had to be grouped into categories for analytical purposes. It must be noted that although 'dairy produce' is presented as a correct response by the midwives and health visitors, not all dairy produce is a source of vitamin D. Only dairy products such as milk, yoghurt and margarine that have been fortified contain vitamin D and often this is only in very small amounts. Therefore, midwives and health visitors who recommend dairy products as a source of vitamin D, need to make their clients aware that they should check the nutritional information to confirm fortification.

Furthermore, **most midwives and health visitors were able to identify only 2-3 out of 7 of the risk factors/symptoms of vitamin D deficiency, with obesity being the least recognised risk factor.** To translate information and key message effectively, midwives and health visitors should be knowledgeable and confident in discussing vitamin D, however the results suggests that many midwives and health visitors across the North West are currently not up to date with the facts around vitamin D.

The training and practice section of the staff survey indicated that a higher proportion of health visitors discuss vitamin D with their clients than midwives. Of those midwives that indicated they did not discuss vitamin D with their client, their main reasons were lack of knowledge, the client not presenting with any risk factors, lack of confidence and not viewing it as part of their role. Similar reasons for not discussing vitamin D with clients were also given by health visitors; but far fewer felt that it was not part of their role (> 15% of midwives compared to 5% of health visitors) and not being asked by the client about vitamin D was also a common reason, along with lack of time. The finding that more midwives than health visitors felt discussing vitamin D with clients was not part of their role is most likely due to the varied roles in midwifery services, where some midwives do not see it as their role because they do not deal with clients at antenatal bookings, they do not work in the community, they have little client contact, or they only deal with intrapartum or postnatal care. Very few health visitors, and an even lower proportion of midwives, reported having received any information or training in vitamin D, and confidence in discussing the issue with clients was generally low overall.

The Healthy Start scheme supports many women, children and families across the UK. The scheme allows beneficiaries to receive free vitamins and exchange vouchers for infant formula milk, frozen and fresh vegetables and fruit. Over 70% of health visitors reported promoting the scheme to all or most of their clients, of those that did not promote the scheme over 60% reported this was due to the client not being eligible for Healthy Start. Time and not being asked about the scheme were also documented as reasons for not promoting the scheme, both highlighting the **need to revisit the length of each appointment and the need to use a criterion tool to prompt a discussion regarding vitamin D.** Responses from midwives indicated a gap in local knowledge; 23% of midwives were unsure if the scheme was supported by their Trust and 37% believed promoting the scheme was not part of their role. Although new NICE guidelines advocate health professionals to recommend vitamin D supplementation, interventions to do so have not been implemented with frontline staff.

Each Trust has a duty to deliver advice, support and access to information on vitamin D, informing women of the risks associated to their baby and themselves. When supported with the resources to endorse Healthy Start, the audit illustrated that health visitors were well informed of the scheme and confident in promoting it, with over 60% provided with distribution lists and over 80% having application forms and leaflets at hand. However **midwives felt they were not provided with enough information on Healthy Start and only 20% said they had access to a distribution list.**

Our findings suggest a need to educate midwives and health visitors through a stand alone or incorporated training sessions. Health professionals are key to the promotion of vitamin D, and there is a need to increase their awareness of 'at-risk' groups, symptoms and



interventions available to clients, and strengthen their confidence to discuss supplementation and to pinpoint high risk mothers. Once the mother has been informed about the common manifestations of vitamin D deficiency, it is then her decision to take up the Healthy Start scheme or buy vitamin D supplements.

Where policies are in place, it is clear that midwives and health visitors are more knowledgeable regarding vitamin D, and discussing vitamin D in practice is more apparent compared to those Trusts which are yet to tackle this issue. To ensure pre- and post-natal women are receiving care that supports their health needs, good communication between health professionals and their clients is imperative. Tailored care to incorporate cultural, medical and other issues should uniformly exist to cater for everyone equally. The responsibility to avoid inconsistency in the messages communicated to clients falls to the Trust or PCT – they should ensure evidence-based training and materials are available that address both the importance of vitamin D to health and how it can be obtained (sun exposure, vitamin supplementation, and appropriate food sources). The main reason for not discussing vitamin D with clients was lack of knowledge. If midwives or health visitors are not given the support they require, their confidence to advise or direct their clients to information is at risk.

## **5.2 Study limitations**

- Only a small sample of midwives took part in the survey, therefore it is difficult to conclude that the findings are representative to individual Acute Trusts.
- The lack of response to the online survey (staff not accessing emails etc), meant that paper copies were sent out which did not have the advantage of providing educational material (answers to knowledge test)
- Since carrying out the provider services audit Trusts may have begun to implement new vitamin D policies and may therefore have already acted on some of the recommendations made in this report.

## **5.3 Recommendations**

- Midwives and health visitors need to be educated through a stand alone or incorporated training session, which addresses both the importance of vitamin D to health and how it can be obtained: through sun exposure, vitamin supplementation, and appropriate food sources, and training into how to deliver this information to all pre- and post-natal women.
- Leaflets on vitamin D uptake in pregnancy/breast feeding should be created (reviewed if already in place) and made widely available to health visitors and midwives.
- All Trusts should ensure that they have information on, and up-to-date distribution lists for Healthy Start available to health visitors and midwives.
- We would encourage those Trusts with a written vitamin D policy to share this with other trusts.
- All Trusts should start the process of developing a vitamin D policy relating to pre- and post-natal women.
- We would encourage those Trusts that have training in place and have health visitors/midwives with higher levels of confidence and/or reported higher levels of delivering vitamin D information to clients, to share their training packages with other Trusts.

We would also encourage those Trusts that have training in place and have health visitors/midwives with higher levels of confidence and those reporting higher levels of delivering vitamin D information to clients to share their training packages with other Trusts.

## **5.4 Conclusion**

The ongoing message to protect skin from sunlight for the prevention of cancer has left people unwilling to expose themselves to UV rays without the use of sun screen protection. This health campaign has not accounted for the need of sun exposure to increase vitamin D stores

for the absorption of calcium and phosphate. Cohort studies<sup>16</sup> have shown strong associations between vitamin D concentrations and a wide spectrum of health problems including colon cancer, fractures and multiple sclerosis, and the risk is appearing much wider spread across Caucasian populations. The overall findings from audit suggest that vitamin D awareness is poor due to a lack of knowledge, training and limitations to promote it and participating Trust sites have little intervention in place to promote the uptake of vitamin D. In order to tackle this issue, Trusts need to establish or re-evaluate their vitamin d policies so that women can receive the correct information and make informed choices regarding vitamin d supplementation. However, there are a few Trusts included in this audit who have established a vitamin D policy or who have a policy in the making, and are up-to-date with what can be done for pregnant women in the current economical climate. It would be useful for other Trust's who may not have a policy established or are in the process of implementing one to learn from these key sites.

## 6 Acknowledgements

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## 7 Appendix

8.1	Provider Services Proformas .....	38
8.1.1	PCT Provider Services Proforma.....	38
8.1.2	Acute Trust provider services proforma .....	41
8.2	Staff Surveys.....	43
8.2.1	PCT staff survey example .....	43
8.2.2	Acute Trust staff survey example.....	48
8.3	Provider services Trust Summaries.....	53
8.3.1	Acute Trusts .....	53
8.3.2	Primary Care Trusts .....	54
8.4	Trust name abbreviations.....	57
8.4.1	Primary Care Trusts: .....	57
8.4.2	Acute Trusts: .....	57
8.5	Further findings .....	58
8.5.1	Further charts by PCT .....	58
8.5.2	Further charts by Acute Trust.....	63

## 7.1 Provider Services Proformas

The following 2 proformas were used to collect information from each participating Trust regarding current vitamin D policies in place.

### 7.1.1 PCT Provider Services Proforma



## PCT Provider Services Proforma (September 2010)

The following survey forms part of a regional provider services audit into vitamin D promotion and practice with prenatal and postnatal women. Selected PCTs across the North West have been asked to complete the following survey to establish current practice and policies in place for the supplementation of vitamin D to prenatal and postnatal women.

This form can be completed in Microsoft Word. The shaded areas indicate where free text can be added, or a box can be ticked. **Please complete and return the questionnaires and attach any additional documents by email or post before 31<sup>st</sup> October 2010.**

PCT name:

No. of trusts within PCT:

No. of Children's centres within PCT:

No. of Midwives/Health Visitors:

### Vitamin D Policy and Protocols

1. Does the PCT have a written vitamin D policy?  Y  N

If "YES" (please attach a copy)

(i) Is it publicised?  Y  N

(ii) Is it audited?  Y  N

(iii) Does it include a staff training policy?  Y  N

(iv) When was your vitamin D policy implemented? (DD/MM/YYYY)  Y  N

If "NO":

(v) Would you consider implementing a vitamin D policy at your PCT?  Y  N

(vi) How long would it take for your PCT to implement a new vitamin D policy?

4-6 months

6-9 months

9-12 months

12 months +

Don't know

(vii) Please state the process and who needs to be consulted for a policy to be implemented at your PCT:

Comments:

### Vitamin D Management and Training

2. Do you have a vitamin D team?  Y  N

If "YES", please detail the composition of the team, if and when meetings are held, and how long the team has

been in place.

3. Do you have a vitamin D representative/coordinator?  Y  N

If "NO":

(i) Would you find it useful to have a vitamin D coordinator at your trust?  Y  N

4. Have health visitors at your PCT been provided with information about vitamin D supplementation in postnatal women?  Y  N

If "YES", please attach any paper based resources for staff etc.

5. Do you have any in-house leaflets containing information on vitamin D for health visitors' to give to clients?  Y  N

If "YES", please attach any leaflets currently in use.

6. Does the PCT offer any vitamin D training for health visitors'?  Y  N

If "YES":

(i) Is this training mandatory?  Y  N

(ii) Is it:  a stand alone session? OR  part of another training session?

(iii) Does the training cover the following:

a) The nutritional needs (specific to vitamin D) of postnatal women?  Y  N

b) The importance of supplementation for breastfeeding women?  Y  N

c) Availability of suitable vitamin D supplements (such as the Healthy Start vitamins)?  Y  N

If "NO":

(iv) Would you consider implementing a training session on vitamin D supplementation?  Y  N

Comments:

### Healthy Start Scheme

7. Does the PCT promote the Healthy Start scheme?  Y  N

If "NO", please can you state the reasons behind not promoting the Healthy start scheme?

8. Do you have a list of Healthy Start distributors in your area that health visitors' can give to clients?  Y  N

If "YES", please attach a copy.

9. Do you provide free Healthy Start vitamins to any of the following:

- All postnatal women
- Only those postnatal women who are eligible
- Postnatal women from certain areas/districts
- None of the above
- Other

Finally, if you have any comments please document them here:

**Thank you for completing this provider services audit survey.**

**Please can you attach copies of any of the following:**

- Vitamin D policy/protocol/SOP
- Any training documents for staff
- Any in-house leaflets for staff/clients
- List of Healthy Start distributors

**Please complete the following:**

Your name:

Your full job title:

**Your email address:**

**Your contact number:**

**Date the questionnaire was completed:**



7.1.2 Acute Trust provider services proforma



## Acute Trust Provider Services Proforma (September 2010)

The following survey forms part of a regional provider services audit into vitamin D promotion and practice with prenatal and postnatal women.

Selected trusts across the North West have been asked to complete the following survey to establish current practice and policies in place for the supplementation of vitamin D to prenatal and postnatal women.

This form can be completed in Microsoft Word. The shaded areas indicate where free text can be added, or a box can be ticked. **Please complete and return the questionnaires and attach any additional documents by email or post before 31<sup>st</sup> October 2010.**

Trust name:

No. of midwives employed at this trust:

Vitamin D Policy and Protocols	
<b>2. Does the maternity department within your Trust have a written vitamin D policy?</b>	<input type="checkbox"/> Y <input type="checkbox"/> N
If "YES" (please attach a copy):	
(i) Is it publicised?	<input type="checkbox"/> Y <input type="checkbox"/> N
(ii) Is it audited?	<input type="checkbox"/> Y <input type="checkbox"/> N
(iii) Does it include a staff training policy?	<input type="checkbox"/> Y <input type="checkbox"/> N
(iv) When was your vitamin D policy implemented? (DD/MM/YYYY)	
If "NO":	
(v) Would you consider implementing a vitamin D policy at your trust?	<input type="checkbox"/> Y <input type="checkbox"/> N
(vi) How long would it take for your trust to implement a new vitamin D policy?	
<input type="checkbox"/> 4-6 months	
<input type="checkbox"/> 6-9 months	
<input type="checkbox"/> 9-12 months	
<input type="checkbox"/> 12 months +	
<input type="checkbox"/> Don't know	
(vii) Please state the process and who needs to be consulted for a policy to be implemented at your trust:	
Comments:	

Vitamin D Management and Training	
<b>2. Do you have a vitamin D team?</b>	<input type="checkbox"/> Y <input type="checkbox"/> N
<b>3. Do you have a vitamin D representative/coordinator?</b>	<input type="checkbox"/> Y <input type="checkbox"/> N
If "NO":	
(i) Would you find it useful to have a vitamin D coordinator at your trust?	<input type="checkbox"/> Y <input type="checkbox"/> N

4. Have midwives at your trust been provided with information about vitamin D supplementation in pregnant women? <i>(please attach any paper based resources for staff etc)</i>	<input type="checkbox"/> Y	<input type="checkbox"/> N
5. Do you have any in-house leaflets containing information on vitamin D for midwives to give to clients? <i>(please attach any leaflets in use)</i>	<input type="checkbox"/> Y	<input type="checkbox"/> N
6. Does the trust offer any vitamin D training for midwives?	<input type="checkbox"/> Y	<input type="checkbox"/> N
If "YES":		
(i) Is this training mandatory?	<input type="checkbox"/> Y	<input type="checkbox"/> N
(ii) Is it: <input type="checkbox"/> a stand alone session? OR <input type="checkbox"/> part of another training session?		
(iii) Does the training cover the following:		
a) The nutritional needs (specific to vitamin D) of pregnant women?	<input type="checkbox"/> Y	<input type="checkbox"/> N
b) The importance of a balanced diet during pregnancy?	<input type="checkbox"/> Y	<input type="checkbox"/> N
c) Availability of suitable vitamin D supplements (such as the Healthy Start vitamins)?	<input type="checkbox"/> Y	<input type="checkbox"/> N
If "NO":		
(iv) Would you consider implementing a training session on vitamin D supplementation?	<input type="checkbox"/> Y	<input type="checkbox"/> N
Comments:		

<b>Healthy Start Scheme</b>		
7. Does the trust promote the Healthy Start scheme?	<input type="checkbox"/> Y	<input type="checkbox"/> N
8. Do you have a list of Healthy Start distributors in your area that midwives' can give to clients? <i>(please attach a copy)</i>	<input type="checkbox"/> Y	<input type="checkbox"/> N
Finally, If you have any comments please document them here:		

**Thank you for completing this survey.**

**Please can you attach copies of any of the following:**

- Vitamin D policy/protocol/SOP
- Any training documents for staff
- Any in-house leaflets for staff/clients
- List of Healthy Start distributors

**Please complete the following:**

Your name:

Your full job title:

Your email address:

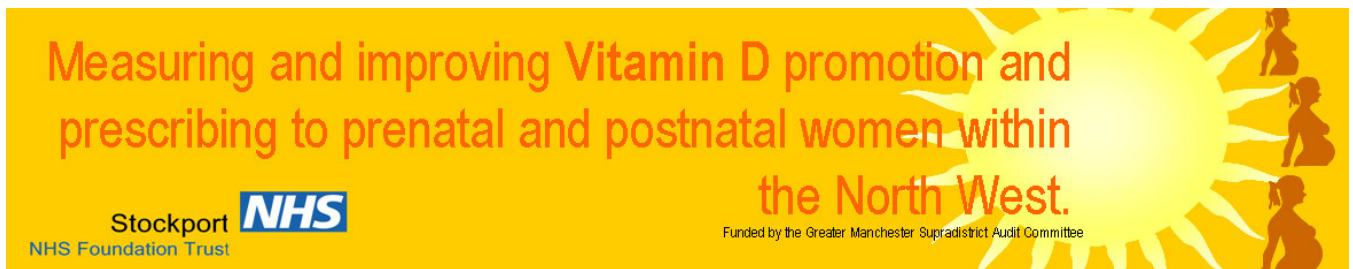
Your contact number:

Date the questionnaire was completed:

## 7.2 Staff Surveys

The staff surveys were individual to each Trust, however an example of a PCT staff survey and an Acute Trust staff survey are detailed below.

### 7.2.1 PCT staff survey example



## Vitamin D Provider Services Audit: Staff Knowledge, Practice and Training Survey for NHS Manchester

The following survey forms part of a regional healthcare provider services audit into vitamin D promotion and practice with prenatal and postnatal women.

You have been asked, along with all other midwives and health visitors employed at selected trusts and PCTs across the North West, to complete the following survey to establish your current knowledge, practice and training needs for the supplementation of vitamin D to prenatal and postnatal women.

This survey will take approximately 10 minutes to complete and is completely voluntary. **Any identifiable information will be kept strictly confidential.**

It is important to answer the questions honestly and without referring to other sources, as the information gathered will be used to understand the **training needs** of midwives and health visitors.

**You DO NOT need to complete this if you have already completed the online version of the vitamin D survey.**

If you wish to complete the survey online please go to:

<http://www.surveygizmo.com/s3/332280/vitamin-d>.

This will be available until 15<sup>th</sup> November 2010.

Once you have completed the survey, **please return to us in the pre-paid addressed envelope provided.**

### First we need to know a little bit about you...

1. How many years have you been employed at this PCT?

*Please round the figure off to the nearest year. If you have been working at this hospital less than 6 months please enter a '0'.*

 years

2. Where are you currently based?

- Hospital  PCT  Children's Centre  GP Surgery   
 Health Centre  Other (please state):

3. Does your current role involve working in the community? Yes  No

4. If you work in the community, which of the following areas do you work within Manchester?

*If you work within any other areas please list them in the 'other' box.*

- |  |  |   |   |
|--|--|---|---|
| Ancoats and Clayton <input type="checkbox"/> | Ardwick <input type="checkbox"/>   | Baguley <input type="checkbox"/>                            | Bradford <input type="checkbox"/>       |
| Brooklands <input type="checkbox"/>          | Burnage <input type="checkbox"/>   | Charlestown <input type="checkbox"/>                        | Cheetham <input type="checkbox"/>       |
| Chorlton <input type="checkbox"/>            | Chorlton Park <input type="checkbox"/>   | City Centre <input type="checkbox"/>                        | Crumpsall <input type="checkbox"/>      |
| Didsbury East <input type="checkbox"/>       | Didsbury West <input type="checkbox"/>   | Fallowfield <input type="checkbox"/>                        | Gorton North <input type="checkbox"/>   |
| Gorton South <input type="checkbox"/>        | Harpurhey <input type="checkbox"/>   | Higher Blackley <input type="checkbox"/>                    | Hulme <input type="checkbox"/>          |
| Levenshulme <input type="checkbox"/>         | Longsight <input type="checkbox"/>   | Miles Platting and<br>Newton Heath <input type="checkbox"/> | Moss Side <input type="checkbox"/>      |
| Moston <input type="checkbox"/>              | Northenden <input type="checkbox"/>  | Old Moat <input type="checkbox"/>                           | Rusholme <input type="checkbox"/>       |
| Sharston <input type="checkbox"/>            | Whalley Range <input type="checkbox"/>   | Withington <input type="checkbox"/>                         | Woodhouse Park <input type="checkbox"/> |
| All of the above <input type="checkbox"/>    | Other (please state): <input style="width: 380px; height: 30px;" type="text"/> |   |   |

### Next, we need to identify what you know about vitamin D...

*It is important to answer the following questions honestly and do not refer to other sources, as the information gathered will be used to understand the training needs of midwives. All responses will be kept strictly confidential.*

5. What is the recommended daily allowance of vitamin D for prenatal/postnatal women in the UK?  Micrograms/day

6. What food sources would you recommend to clients to increase their vitamin D uptake?

*Please indicate up to 5 specific food sources in the boxes below.*

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_

7. What percentage of our vitamin D supply do we obtain from the sun?  %

8. Which minerals does vitamin D help the body absorb?

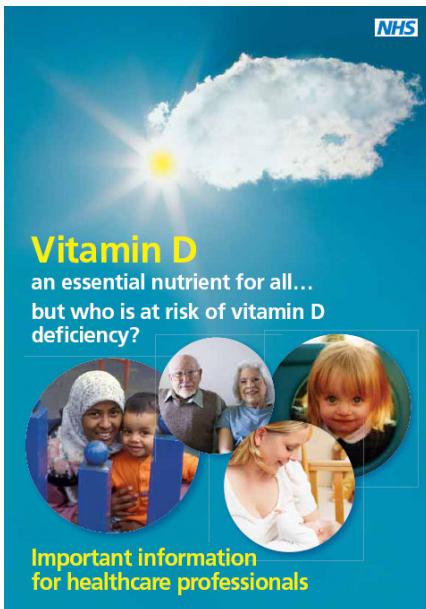
- Phosphorous  Magnesium  Calcium  Zinc   
 Don't know

9. Which of the following symptoms or risk factors may identify a client as being deficient in vitamin D?

- |  |  |
|--|--|
| Pigmented skin <input type="checkbox"/><br><i>(non-white ethnicity)</i>            | Gastrointestinal disorders/conditions <input type="checkbox"/><br><i>(Malabsorption, Short Bowel, Coeliac Disease)</i>               |
| Multiparity <input type="checkbox"/><br><i>(short spacing between pregnancies)</i> | Limited exposure to sunlight <input type="checkbox"/><br><i>(housebound, covered when outdoors, works in an office environment).</i> |
| Muscle pain/weakness <input type="checkbox"/>                                      | Obesity <i>(a BMI of 30 or more)</i> <input type="checkbox"/>  |
| Strict vegetarian diet <input type="checkbox"/>                                    | Don't know <input type="checkbox"/>  |

**Next, we would like to understand more about your vitamin D practice and training...**

10. Do you discuss vitamin D supplementation with your clients?
- |  |  |  |   |
|--|--|--|---|
| Yes - All clients <input type="checkbox"/><br><i>Go to question 11</i> | Yes - Most clients <input type="checkbox"/><br><i>Go to question 10b</i> | Yes - Some clients <input type="checkbox"/><br><i>Go to question 10b</i> | Yes - Few clients <input type="checkbox"/><br><i>Go to question 10b</i> |
| No clients <input type="checkbox"/><br><i>Go to question 10b</i>       |  |  |   |
- 10b. What are your reasons for not discussing vitamin D supplementation with clients?
- |  |  |
|--|--|
| Do not know enough about it <input type="checkbox"/>   | Not confident discussing it <input type="checkbox"/>       |
| It is not my job to discuss it <input type="checkbox"/>                                      | Not enough time to discuss it <input type="checkbox"/>     |
| The client does not appear to have any of the risk factors/symptoms <input type="checkbox"/> | The client has not asked about it <input type="checkbox"/> |
- Other (please state):
11. Do you refer to any of the following information resources when discussing vitamin D with clients?
- |   |  |                                       |                                       |
|---|--|---------------------------------------|---------------------------------------|
| The Pregnancy Book <input type="checkbox"/>   | An in-house leaflet <input type="checkbox"/>                                   | The internet <input type="checkbox"/> | No resources <input type="checkbox"/> |
| Do not discuss Vit D <input type="checkbox"/> | Other (please state): <input style="width: 300px; height: 20px;" type="text"/> |                                       |                                       |
12. How confident are you in advising your clients about vitamin D supplementation?
- |   |   |                                  |                                      |
|---|---|----------------------------------|--------------------------------------|
| Very confident <input type="checkbox"/>   | Confident <input type="checkbox"/>      | Neutral <input type="checkbox"/> | Unconfident <input type="checkbox"/> |
| Very unconfident <input type="checkbox"/> | Not applicable <input type="checkbox"/> |                                  |                                      |
13. Have you come across the Department of Health's vitamin D leaflet specifically for health professionals? *See image below*
- |                              |                             |
|------------------------------|-----------------------------|
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
|------------------------------|-----------------------------|



14. In the last 5 years, have you attended any training sessions/programmes which have incorporated vitamin D supplementation for prenatal/postnatal women?  
 Yes  No
15. On a scale of 1-5, with 5 being 'very useful' and 1 being 'not at all useful', how useful would you find further training in this area?  
 1  2  3  4  5   
 Not at all useful Not useful Neutral Useful Very useful

**Next, we would like to know a bit more about your role and the Healthy Start Scheme...**

16. Do you discuss the Healthy Start scheme with clients?  
 Yes - All clients  *Go to question 17*    Yes - Most clients  *Go to question 16b*    Yes - Some clients  *Go to question 16b*    Yes - Few clients  *Go to question 16b*  
 No clients  *Go to question 16b*

- 16b. What are your reasons for not discussing the Healthy Start scheme with clients?  
 Do not know enough about it     Not confident discussing it   
 It is not my job to discuss it     Not enough time to discuss it   
 The client does not appear to have any of the risk factors/symptoms     The client has not asked about it   
 Other (please state):

17. Is the Healthy Start Scheme supported where you are based?  
 Yes  No  Don't know

18. Does your place of work ensure adequate supply of the following:  
 Healthy Start application forms Yes  No  Don't know   
 Healthy Start information leaflets Yes  No  Don't know   
 Healthy Start vitamin supplements Yes  No  Don't know

available for women

19. Are you confident in directing your client to a Healthy Start distribution point?  
Yes  No  N/A
20. Do you have a list of Healthy Start vitamin distributors in your area?  
Yes  No  Don't know

**Finally, please share any comments about this survey or vitamin D here:**

**Thank you for taking the time to complete this survey. Your response is very important to us.**

If you would like to read more about vitamin D deficiency you may find the following links useful:

- A copy of the Department of Health's leaflet (as seen in the body of the questionnaire) entitled 'Vitamin D: an essential nutrient for all... but who is at risk of vitamin D deficiency?' is available at:  
[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_111302.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_111302.pdf)
- An excellent recent clinical review: Pearce SHS and Cheetham TD (2010) Diagnosis and management of vitamin D deficiency. BMJ, 340: 142-7. This is available online at:  
<http://press.psprings.co.uk/bmj/january/rickets.pdf>

**If you would like the answers to the knowledge questions please email me at: [Deborah.lee@stockport.nhs.uk](mailto:Deborah.lee@stockport.nhs.uk)**



## Vitamin D Provider Services Audit: Staff Knowledge, Practice and Training Survey for CMFT

The following survey forms part of a regional healthcare provider services audit into vitamin D promotion and practice with prenatal and postnatal women.

You have been asked, along with all other midwives and health visitors employed at selected trusts and PCTs across the North West, to complete the following survey to establish your current knowledge, practice and training needs for the supplementation of vitamin D to prenatal and postnatal women.

This survey will take approximately 10 minutes to complete and is completely voluntary. **Any identifiable information will be kept strictly confidential.**

It is important to answer the questions honestly and without referring to other sources, as the information gathered will be used to understand the **training needs** of midwives and health visitors.

**You DO NOT need to complete this if you have already completed the online version of the vitamin D survey.**

If you wish to complete the survey online please go to:

<http://www.surveygizmo.com/s3/332280/vitamin-d>.

This will be available until 15<sup>th</sup> November 2010.

Once you have completed the survey, **please return to us in the pre-paid addressed envelope provided.**

### First we need to know a little bit about you...

1. What is your current job title?

- Midwife       Team Midwife       Staff Midwife       Community Midwife   
Specialist Midwife       Midwife Practitioner       Other (please state): \_\_\_\_\_

If you are a **specialist midwife**, which of the following areas do you specialize in?

- Outreach       Breastfeeding       Smoking cessation       Bereavement   
Diabetes       Substance abuse       Vulnerable women       Mental health



Teenage pregnancy  Other (please state):

2. How many years have you been employed at this Trust?  years  
*Please round the figure off to the nearest year. If you have been working at this hospital less than 6 months please enter a '0'.*

3. Where are you currently based?  
Hospital  PCT  Children's Centre  GP Surgery   
Health Centre  Other (please state):

4. Does your current role involve working in the community? Yes  No

If you work in the community, which of the following areas do you work within Manchester?

*If you work within any other areas please list them in the 'other' box.*

Ancoats and Clayton <input type="checkbox"/>	Ardwick <input type="checkbox"/>	Baguley <input type="checkbox"/>	Bradford <input type="checkbox"/>
Brooklands <input type="checkbox"/>	Burnage <input type="checkbox"/>	Charlestown <input type="checkbox"/>	Cheetham <input type="checkbox"/>
Chorlton <input type="checkbox"/>	Chorlton Park <input type="checkbox"/>	City Centre <input type="checkbox"/>	Crumpsall <input type="checkbox"/>
Didsbury East <input type="checkbox"/>	Didsbury West <input type="checkbox"/>	Fallowfield <input type="checkbox"/>	Gorton North <input type="checkbox"/>
Gorton South <input type="checkbox"/>	Harpurhey <input type="checkbox"/>	Higher Blackley <input type="checkbox"/>	Hulme <input type="checkbox"/>
Levenshulme <input type="checkbox"/>	Longsight <input type="checkbox"/>	Miles Platting and <input type="checkbox"/>	Moss Side <input type="checkbox"/>
		Newton Heath	
Moston <input type="checkbox"/>	Northenden <input type="checkbox"/>	Old Moat <input type="checkbox"/>	Rusholme <input type="checkbox"/>
Sharston <input type="checkbox"/>	Whalley Range <input type="checkbox"/>	Withington <input type="checkbox"/>	Woodhouse Park <input type="checkbox"/>
All of the above <input type="checkbox"/>	Other (please state):	<input type="text"/>	

### Next, we need to identify what you know about vitamin D...

***It is important to answer the following questions honestly and do not refer to other sources, as the information gathered will be used to understand the training needs of midwives. All responses will be kept strictly confidential.***

5. What is the recommended daily allowance of vitamin D for prenatal/postnatal women in the UK?  Micrograms/day

6. What food sources would you recommend to clients to increase their vitamin D uptake?

*Please indicate up to 5 specific food sources in the boxes below.*

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_

7. What percentage of our vitamin D supply do we obtain from the sun?  %

8. Which minerals does vitamin D help the body absorb?

Phosphorous  Magnesium  Calcium  Zinc   
Don't know

9. Which of the following symptoms or risk factors may identify a client as being deficient in vitamin D?

- |  |  |
|--|--|
| Pigmented skin <input type="checkbox"/><br><i>(non-white ethnicity)</i>            | Gastrointestinal disorders/conditions <input type="checkbox"/><br><i>(Malabsorption, Short Bowel, Coeliac Disease)</i>               |
| Multiparity <input type="checkbox"/><br><i>(short spacing between pregnancies)</i> | Limited exposure to sunlight <input type="checkbox"/><br><i>(housebound, covered when outdoors, works in an office environment).</i> |
| Muscle pain/weakness <input type="checkbox"/>                                      | Obesity <i>(a BMI of 30 or more)</i> <input type="checkbox"/>  |
| Strict vegetarian diet <input type="checkbox"/>                                    | Don't know <input type="checkbox"/>  |

**Next, we would like to understand more about your vitamin D practice and training...**

10. Do you discuss vitamin D supplementation with your clients?  
 Yes - All clients  *Go to question 11*    Yes - Most clients  *Go to next question*    Yes - Some clients  *Go to next question*    Yes - Few clients  *Go to next question*  
 No clients  *Go to next question*

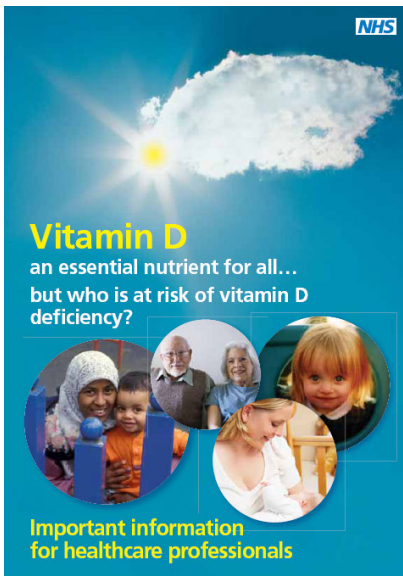
What are your reasons for not discussing vitamin D supplementation with clients?

- |  |  |
|--|--|
| Do not know enough about it <input type="checkbox"/>   | Not confident discussing it <input type="checkbox"/>       |
| It is not my job to discuss it <input type="checkbox"/>                                      | Not enough time to discuss it <input type="checkbox"/>     |
| The client does not appear to have any of the risk factors/symptoms <input type="checkbox"/> | The client has not asked about it <input type="checkbox"/> |
| Other (please state):  | <input style="width: 570px; height: 30px;" type="text"/>   |

11. Do you refer to any of the following information resources when discussing vitamin D with clients?  
 The Pregnancy Book     An in-house leaflet     The internet     No resources   
 Do not discuss Vit D     Other (please state):

12. How confident are you in advising your clients about vitamin D supplementation?  
 Very confident     Confident     Neutral     Unconfident   
 Very unconfident     Not applicable

13. Have you come across the Department of Health's vitamin D leaflet specifically for health professionals? *See image below*  
 Yes     No



14. In the last 5 years, have you attended any training sessions/programmes which have incorporated vitamin D supplementation for prenatal/postnatal women?  
 Yes  No
15. On a scale of 1-5, with 5 being 'very useful' and 1 being 'not at all useful', how useful would you find further training in this area?  
 1  2  3  4  5   
 Not at all useful Not useful Neutral Useful Very useful

**Next, we would like to know a bit more about your role and the Healthy Start Scheme...**

16. Do you discuss the Healthy Start scheme with clients?  
 Yes - All clients  *Go to question 17*   
 Yes - Most clients  *Go to next question*   
 Yes - Some clients  *Go to next question*   
 Yes - Few clients  *Go to next question*  
 No clients  *Go to next question*

What are your reasons for not discussing the Healthy Start scheme with clients?

- Do not know enough about it     Not confident discussing it   
 It is not my job to discuss it     Not enough time to discuss it   
 The client does not appear to have any of the risk factors/symptoms     The client has not asked about it   
 Other (please state):

17. Is the Healthy Start Scheme supported where you are based?  
 Yes  No  Don't know

18. Does your place of work ensure adequate supply of the following:
- |   |                              |                             |                                     |
|---|------------------------------|-----------------------------|-------------------------------------|
| Healthy Start application forms                       | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Healthy Start information leaflets                    | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Healthy Start vitamin supplements available for women | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |

19. Are you confident in directing your client to a Healthy Start distribution point?  
 Yes  No  N/A
20. Do you have a list of Healthy Start vitamin distributors in your area?  
 Yes  No  Don't know
21. On a scale of 1-5, with 5 being 'very useful' and 1 being 'not at all useful', how useful would you find the stocking of Healthy Start vitamins within the hospital pharmacy?  
 1  2  3  4  5  Not applicable   
 Not at all useful    Not useful    Neutral    Useful    Very useful

**Finally, please share any comments about this survey or vitamin D here:**

**Thank you for taking the time to complete this survey. Your response is very important to us.**

If you would like to read more about vitamin D deficiency you may find the following links useful:

- A copy of the Department of Health's leaflet (as seen in the body of the questionnaire) entitled 'Vitamin D: an essential nutrient for all... but who is at risk of vitamin D deficiency?' is available at:  
[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_111302.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_111302.pdf)
- An excellent recent clinical review: Pearce SHS and Cheetham TD (2010) Diagnosis and management of vitamin D deficiency. BMJ, 340: 142-7. This is available online at:  
<http://press.psprings.co.uk/bmj/january/rickets.pdf>

**If you would like the answers to the knowledge questions please email me at: [Deborah.lee@stockport.nhs.uk](mailto:Deborah.lee@stockport.nhs.uk)**

## **7.3 Provider services Trust Summaries**

### **7.3.1 Acute Trusts**

#### **Central Manchester University Hospitals NHS Foundation Trust (CMFT)**

- 214 Midwives are employed by CMFT.
- In October 2008, a vitamin D policy was put in place. This policy has been publicised and audited since, but the current policy does not include guidelines for staff training.
- There is no vitamin D team or coordinator at this Trust, but they acknowledge that this would be useful.
- Midwives have been given some vitamin D information.
- No in-house leaflets have been produced to distribute to women visiting the midwifery department.
- A vitamin D training session would be welcomed at the Trust.

#### **Liverpool Women's NHS Foundation Trust (LWH)**

- LWH employs 303 Midwives.
- Currently LWH has no vitamin D policy in place.
- It has been recommended 4-6 months is a sufficient amount of time for the Trust to implement a vitamin D policy using the appropriate pathway.
- Liverpool Women's NHS Trust is the only Trust in the audit to have a vitamin D team, however the Trust does not have a named vitamin D coordinator or representative.
- LWH has no in-house leaflets nor do they provide their midwives with vitamin D training.
- Midwives at LWH have not been provided any vitamin D information.
- Healthy Start is promoted at the Trust; although our representative informs us that a lack of application forms makes it difficult to promote the scheme effectively.

#### **Pennine Acute Hospitals NHS Trust (PAT)**

- PAT employs 400 midwives across 4 sites.
- The Trust does not have a vitamin D policy in place, but has vitamin D guidelines in draft form (before approval the author is awaiting comments from others before making any modifications). Implementation is expected to take 4-6months.
- Midwives at PAT have been provided with information on vitamin D, but there are no in-house leaflets for midwives to give to clients.
- Vitamin D training is given to all midwives as part of their mandatory training.
- Healthy Start is promoted within the Trust, however some of the sites do not have lists of Healthy Start distribution centres to give to clients.

#### **Stockport NHS Foundation Trust (SFT)**

- 158 Midwives are employed by SFT.
- The Trust does not have a vitamin D policy in place at present but would consider implementing one to increase vitamin D awareness amongst their clients and health professionals.
- To introduce new policy, a 6-9 month time frame would be required and approval from the Guideline and Development Group and the Quality Board.
- Midwives at this Trust have been provided with some vitamin D information, however no training policy is currently in place.
- The midwifery manager believes if vitamin D training was considered, it would sit best with the mandatory screening section.
- At present the Trust has not produced any in-house leaflets for maternity clients.
- The Healthy Start Scheme is promoted at the hospital; this is the only Trust that currently offers their women a list of distribution centres for the Healthy Start vitamins.

#### **Wirral University Teaching Hospital NHS Foundation Trust (WUTH)**

- WUTH employs 158 midwives.
- They currently have no vitamin D policy in place.
- There is no vitamin D team or representative for the Trust, but acknowledge that this may be useful.
- To implement a vitamin D policy at the Trust they anticipate it would take between 6-9 months to complete, and will need to go through the Clinical Guidelines Group for consultation and then ratification.
- Midwives at WUTH have been provided with information about vitamin D and the Trust provides vitamin D training to all midwives as part of their mandatory training package; the training includes discussing nutritional needs, dietary requirements and the availability of vitamin D supplements.
- The midwives at WUTH have also been encouraged to undertake an online vitamin D training package as part as their continuous professional development.
- The Trust does not have a Healthy Start vitamin distribution centre list; however they do promote the Healthy Start scheme.

### **Wrightington Wigan and Leigh NHS Foundation Trust (WWL)**

- WWL has the smallest midwifery team, employing 117 midwives.
- A Vitamin D policy has not currently been implemented. If a policy was considered, the Matron envisages 4-6 months to compose, approve and cascade the policy.
- The Trust does not engage in any vitamin D team meetings, but do acknowledge that this may be beneficial allowing information to be shared.
- Midwives have been provided with some vitamin D information, and the Trust offers a stand alone vitamin D training session to all their midwives; the training covers importance of a balanced diet, nutrition and supplement availability.

### **7.3.2 Primary Care Trusts**

#### **NHS Liverpool Community Health NHS Trust (NHS LIV)**

- NHS LIV employs 75 Health Visitors.
- They govern 26 children centres within their PCT.
- Currently Liverpool PCT has no vitamin D policy publicised or documented for health professionals to use.
- They believe 4-9 months is adequate for the PCT to implement a vitamin D policy using the appropriate pathway. To introduce a vitamin D policy the PCT would require partnership with city council and their maternity services.
- The PCT has a vitamin D coordinator; however a vitamin D team has not been formed.
- The PCT provides health visitors with information about vitamin D supplementation.
- Strategies to promote vitamin D awareness are non existent in the Trust, the Trust has no in house leaflets to increase Vitamin D awareness, nor does it provide health visitors with vitamin D training.
- To tackle this, the PCT would consider cascading a vitamin D training session to all health visitors.
- Healthy start is promoted at the Trust, it is free to eligible postnatal women; health visitors are able to refer to a distribution list although a lack of forms makes it difficult to promote the scheme effectively.

#### **NHS East Lancashire (NHS EL)**

- Comprised of 4 Trusts.
- 27 children centres.
- Employs 73 health visitors across their PCT.
- The PCT has a publicised vitamin D policy since April 2009, the impact of this policy has not been assessed.
- The vitamin D policy has been included in staff training sessions and documents.

- The PCT has employed a dedicated vitamin D coordinator and team since October 2005. The team consists of
  - Infant feed coordinator ( Vitamin D lead)
  - Health coordinators (1 per borough)
  - Public health midwives
  - Data inputter

During monthly meetings team members are given the opportunity to discuss challenges and current news with each other.  
Health coordinators liaise with children centres regularly to engage with local families and inform centres of meetings and training needs they may require.  
To ensure key messages are delivered into the local communities the team is to be extended in 2011 to include a health improvement practitioner and neighbourhood health visitor.
- NHS EL provide their health visitors with:
  - Information regarding vitamin D supplementation
  - In house leaflet for distribution
  - Training which covers nutritional needs specific to vitamin D, importance of supplementation for breastfeeding women and the availability of suitable vitamin D.
- All training is provided as a stand alone session and within weaning and basic breastfeeding management training to health visitors, nursery nurses, staff nurses midwives and children centre staff.
- The Healthy Start Scheme is promoted throughout local communities.
- Health visitors are provided with a distribution list of healthy start centres.
- All postnatal women are provided with free Healthy Start Vitamins.

#### **NHS Ashton, Leigh and Wigan (NHS ALW)**

- Employs 80 health visitors
- The PCT is comprised of 3 Trusts.
- The PCT does not have a Vitamin D policy, they suggest it would take 4-6 months to compose, approve and cascade.
- The Trust suggests a vitamin D representative would be useful, the representative would share knowledge and stream important messages to each Trust; currently they have neither a vitamin D team nor representative.
- The Trust offers vitamin D training to all health visitors, the training covers;
  - Importance of supplementation for breastfeeding women
  - The availability of suitable vitamin D supplements.
- Health visitors promote Healthy Start scheme, however they do not have a distribution list. The vitamins are only free to those postnatal women who are eligible.

#### **NHS Heywood Middleton and Rochdale (NHS HMR)**

- Employs 50 health visitors.
- 21 Children centres.
- The PCT does not have a vitamin D policy, but would consider implementing one. It would take up to 9 months to complete a new policy and cascade it throughout the PCT.
- A vitamin D team or coordinator has not been employed; the PCT feel they would not benefit from either.
- Health visitors are provided with information and an in-house leaflet about vitamin D supplementation that can be given to their clients.
- Unfortunately health visitors are not provided with any vitamin D training.
- Healthy Start scheme is promoted by the PCT.

#### **NHS Manchester (NHS MAN)**

- Employs 79 health visitors
- Of the participating PCT's, Manchester PCT employ the largest number of children centres (n = 34) and health visitors (n = 79).

- A vitamin D policy has not been written, but the PCT would consider writing one. A publicised policy would require discussions with the vitamin D working group which include representatives from public health, nutrition, clinical lead for health visiting, health visitors, midwives and sure start. An approved time frame to complete the implementation of the policy would be 6-9months.
- Health visitors are not given information about vitamin D or leaflets for distribution; therefore it is not apparent if clients are receiving guidance on vitamin D intake.
- Vitamin D training is not offered to health visitors currently, however plans to deliver training are in process. The PCT suggest vitamin D training would be delivered by the end of 2011.
- Healthy Start Vitamins are promoted to clients during appointments with health visitors but health visitors are not provided with a distribution list to direct their clients.

### **NHS Wirral (NHS WIR)**

- The Trust employs 52 health visitors
- 16 Children centres.
- NHS WIR has no vitamin D policy in place; therefore no audit or training has been carried out.
- The PCT would consider employing a vitamin D policy; a 6-9 month time frame to implement the policy was suggested. Involvement from the service improvement and general policy review team would be needed for approval.
- Currently no vitamin D team or coordinator has been instructed to promote vitamin D across the Wirral; the PCT believe a vitamin D coordinator would be useful.
- The PCT does not provide Health Visitors with leaflets or information about vitamin D supplementation; unfortunately health visitors are not offered any vitamin D training.
- The PCT promotes the Health Start scheme; they provide their health visitors with a distribution list of where vitamins are kept and provide free vitamins to eligible postnatal women.



## 7.4 Trust name abbreviations

### 7.4.1 Primary Care Trusts:

NHS LIV	Liverpool Community Health NHS Trust
NHS EL	NHS East Lancashire
NHS ALW	NHS Ashton, Leigh and Wigan
NHS HMR	NHS Heywood Rochdale and Middleton
NHS MAN	NHS Manchester
NHS WIR	NHS Wirral

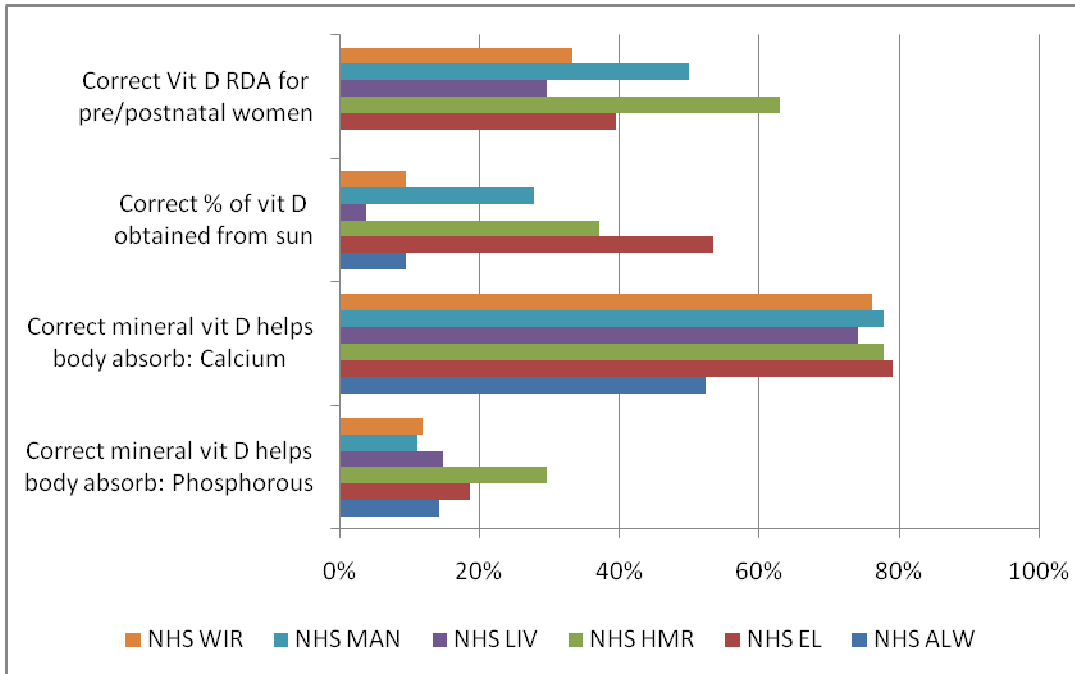
### 7.4.2 Acute Trusts:

CMFT	Central Manchester University Hospitals NHS Foundation Trust
LWH	Liverpool Women's NHS Foundation Trust
PAT	Pennine Acute Hospitals NHS Trust
SFT	Stockport NHS Foundation Trust
WUTH	Wirral University Teaching Hospital NHS Foundation Trust
WWL	Wrightington Wigan and Leigh NHS Foundation Trust
ELHT	East Lancashire Hospitals NHS Trust
RBH	Royal Bolton Hospital NHS Foundation Trust

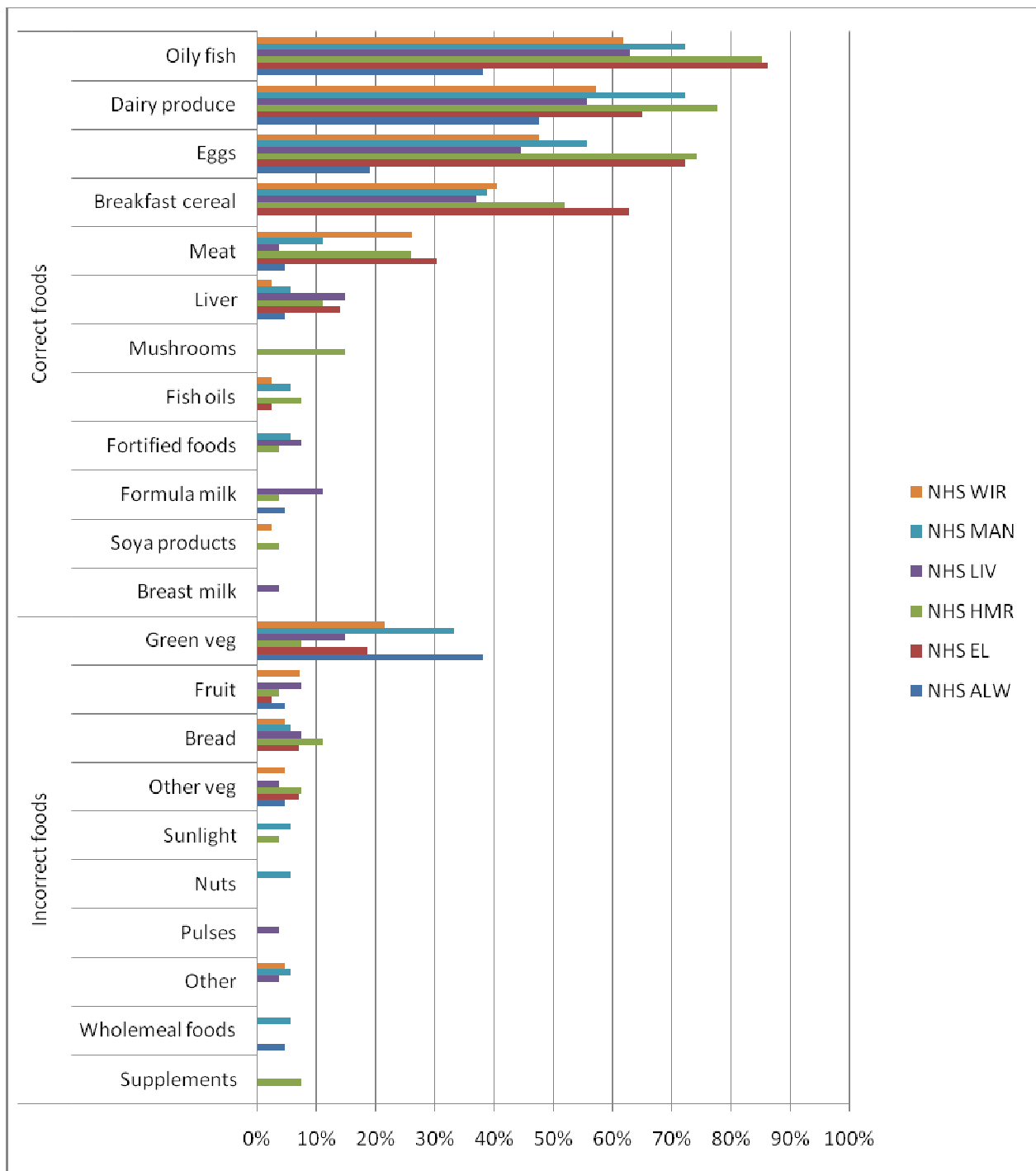
## 7.5 Further findings

### 7.5.1 Further charts by PCT

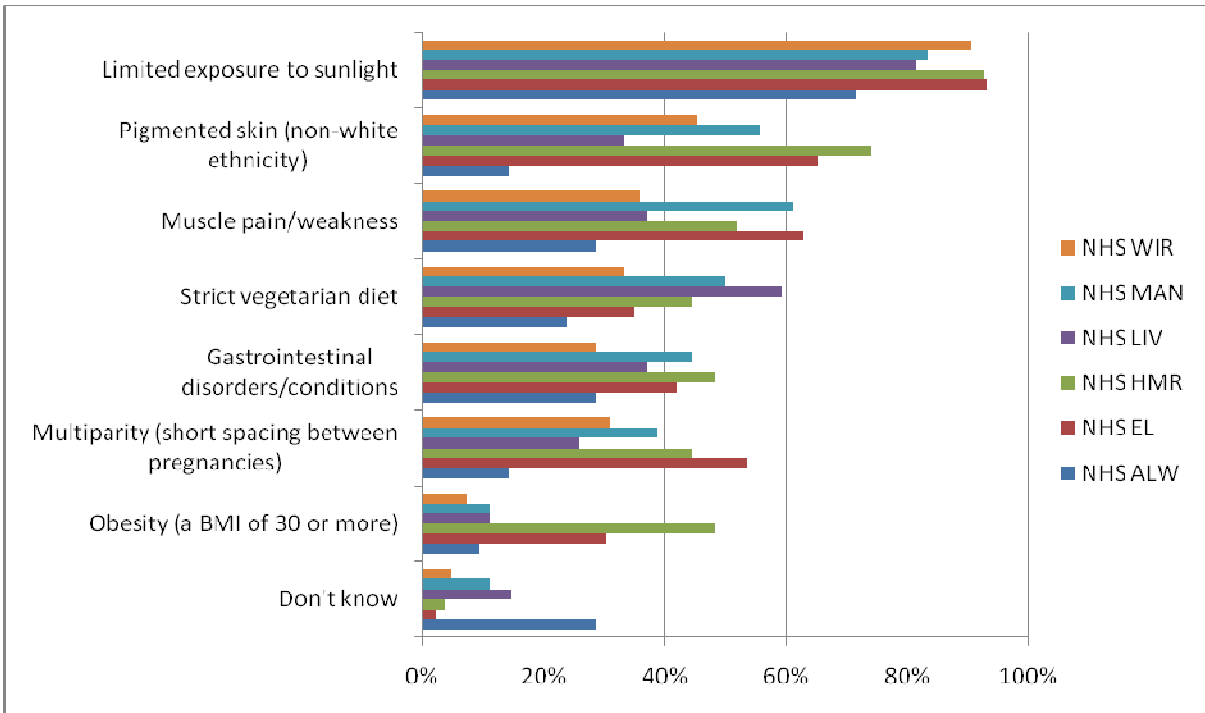
**Figure 28: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb by PCT**



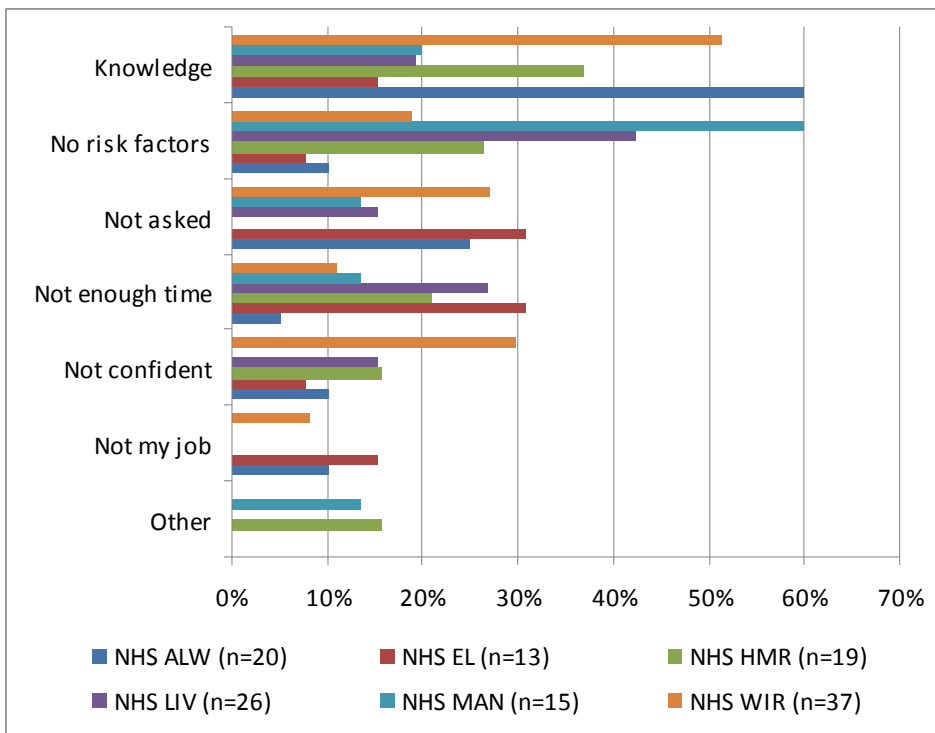
**Figure 29: Correctly and incorrectly identified food types by PCT**



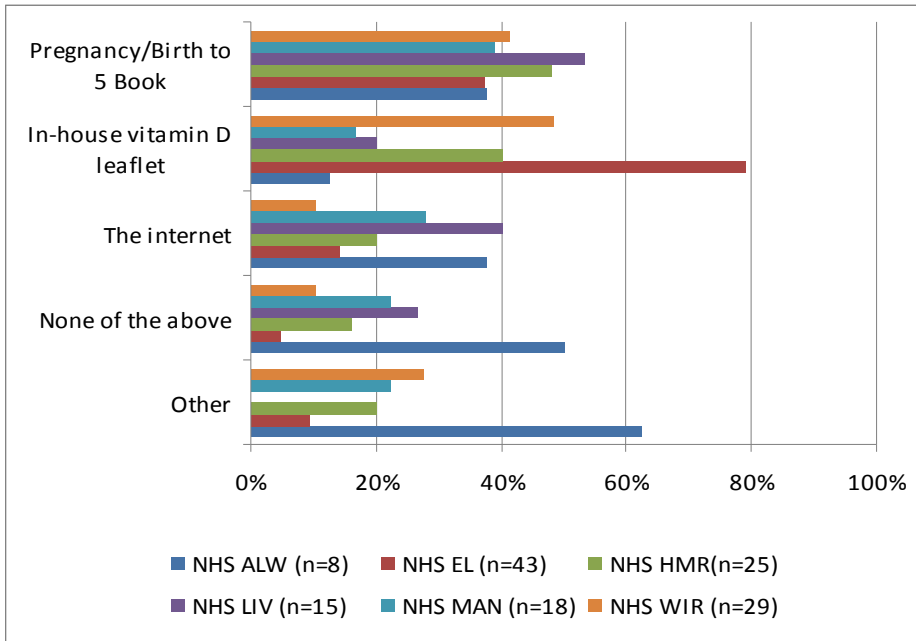
**Figure 30: Most commonly identified risk factors/symptoms of vitamin D deficiency by health visitors at each PCT**



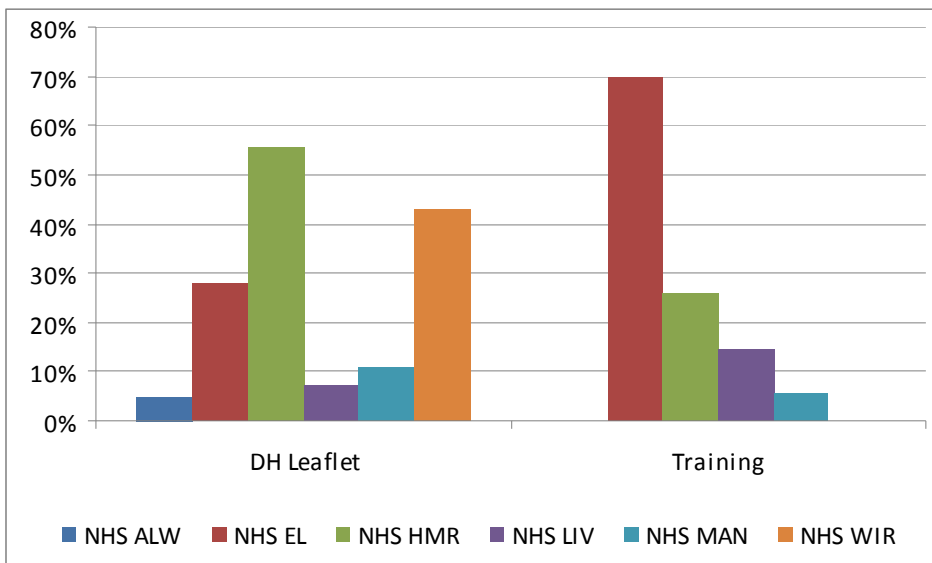
**Figure 31: Reasons for not discussing vitamin D who reported not discussing with 'all' clients by PCT**



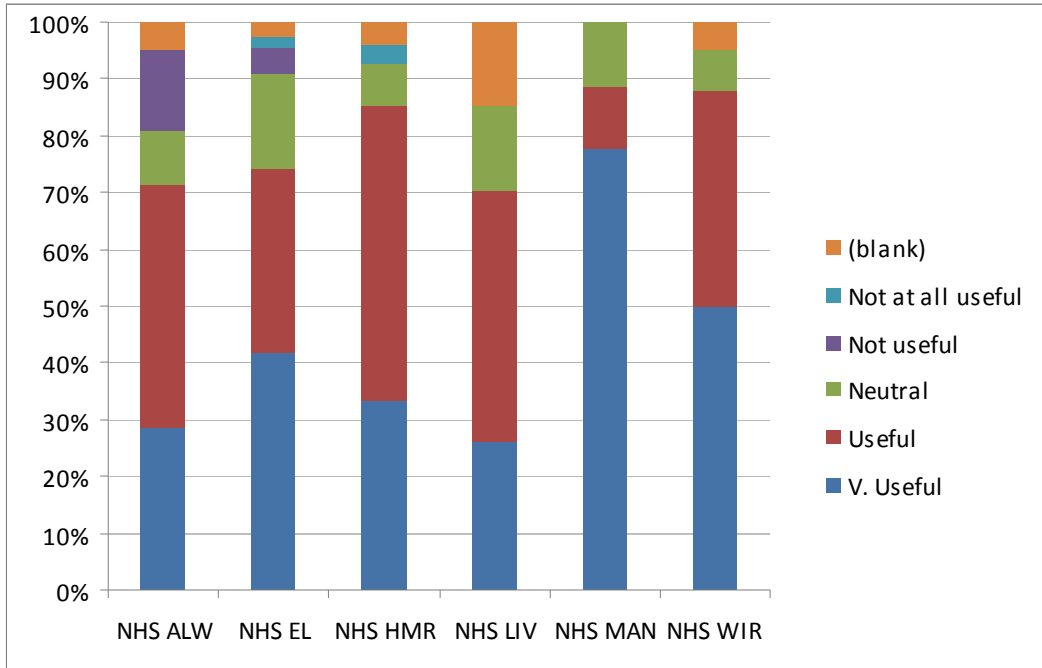
**Figure 32: Resources referred to by health visitors when discussing vitamin D with clients by PCT**



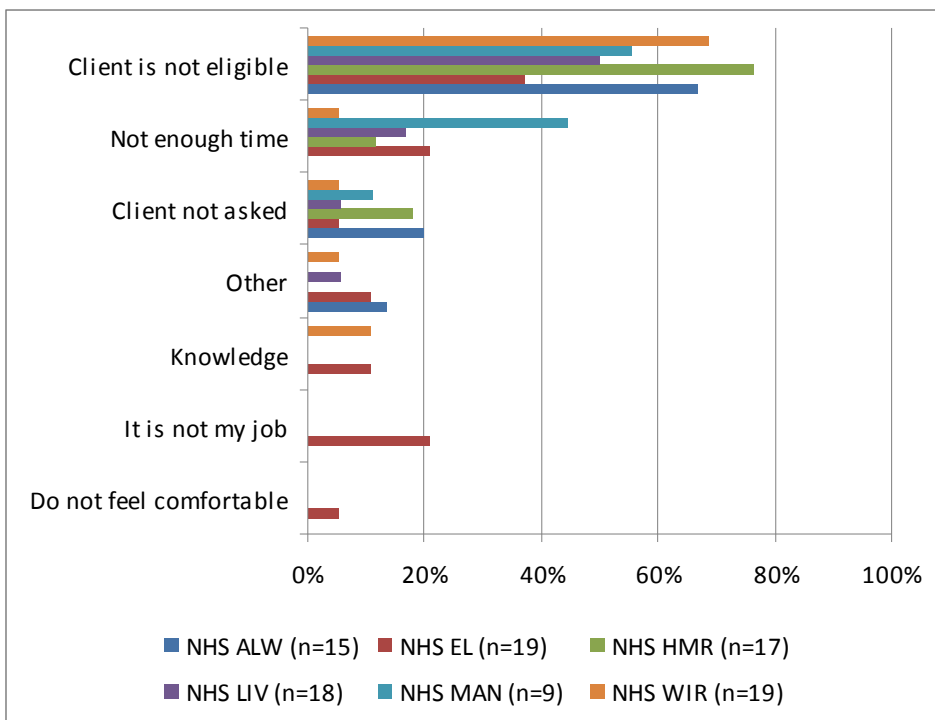
**Figure 33: Awareness of DH vitamin D leaflet and experience of vitamin D training amongst health visitors by PCT**



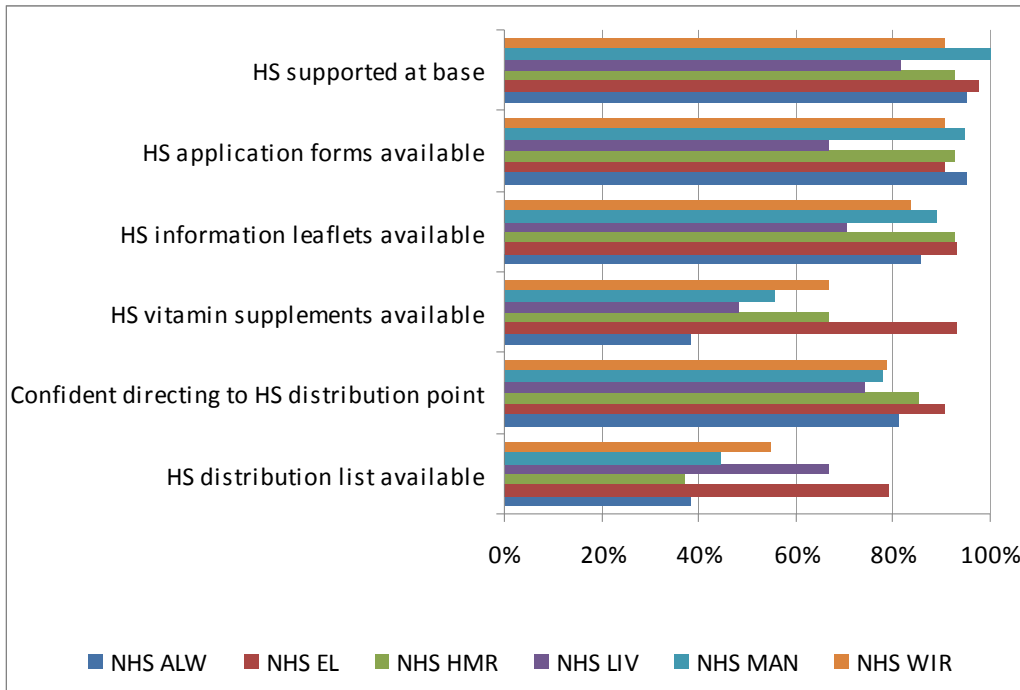
**Figure 34: Usefulness of potential training in vitamin D by PCT**



**Figure 35: Reasons for not discussing Healthy Start amongst health visitors who report not discussing with 'all' clients by PCT**

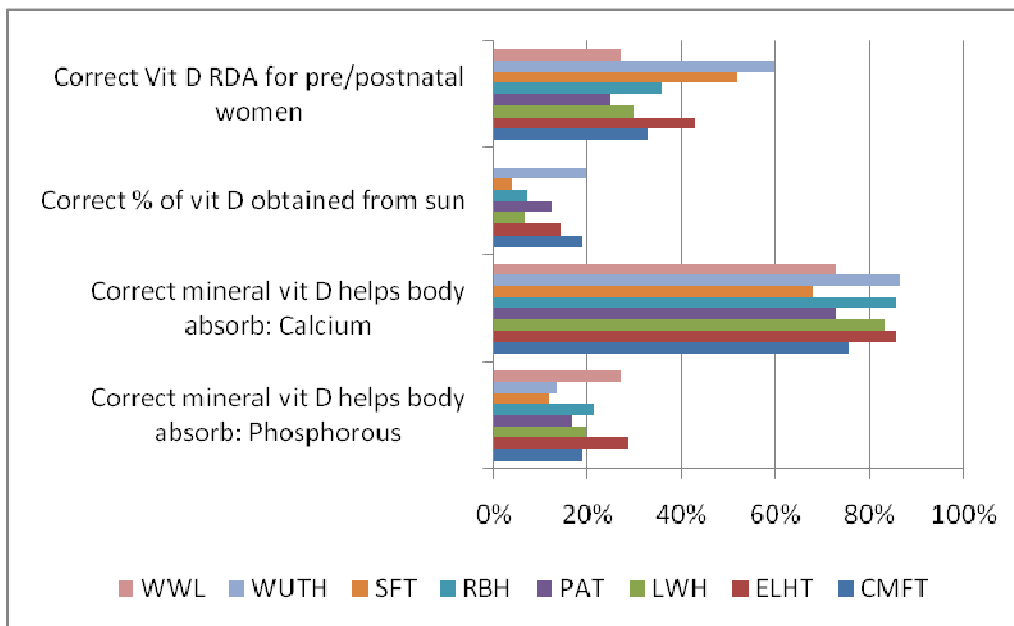


**Figure 36: Healthy Start support, resource availability and distribution amongst health visitors by PCT**

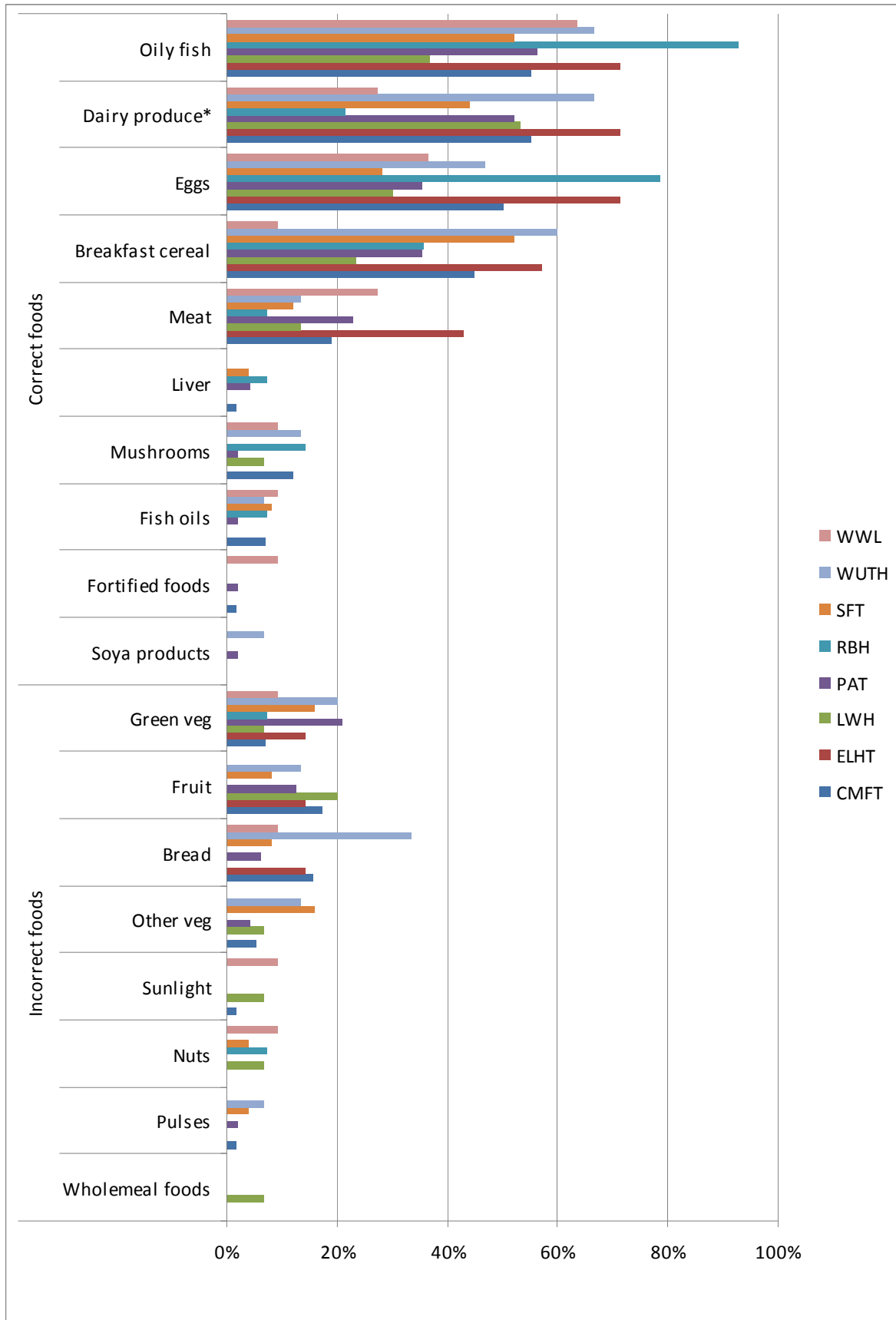


**7.5.2 Further charts by Acute Trust**

**Figure 37: Correct identification of Vitamin D RDA, % of Vitamin D obtained from sunlight, and minerals that Vitamin D helps the body absorb by Acute Trust**

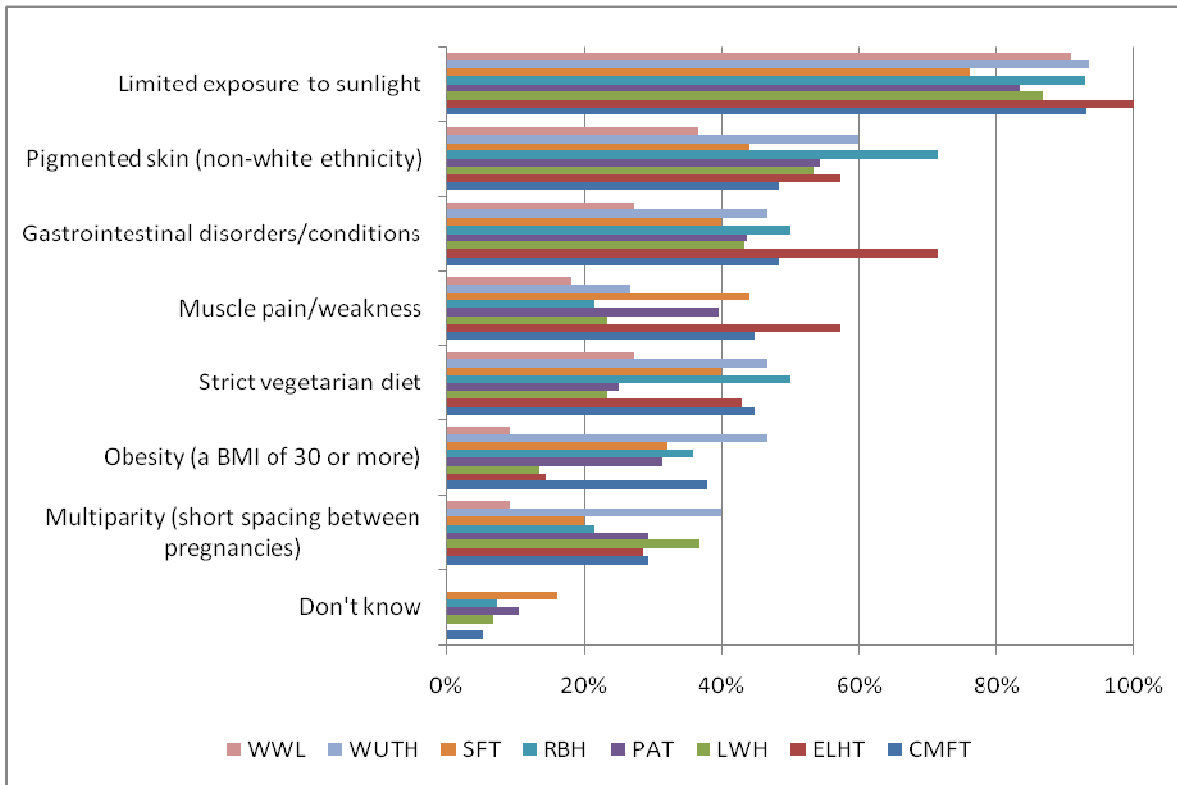


**Figure 38: Correctly and incorrectly identified food types by Acute Trust**

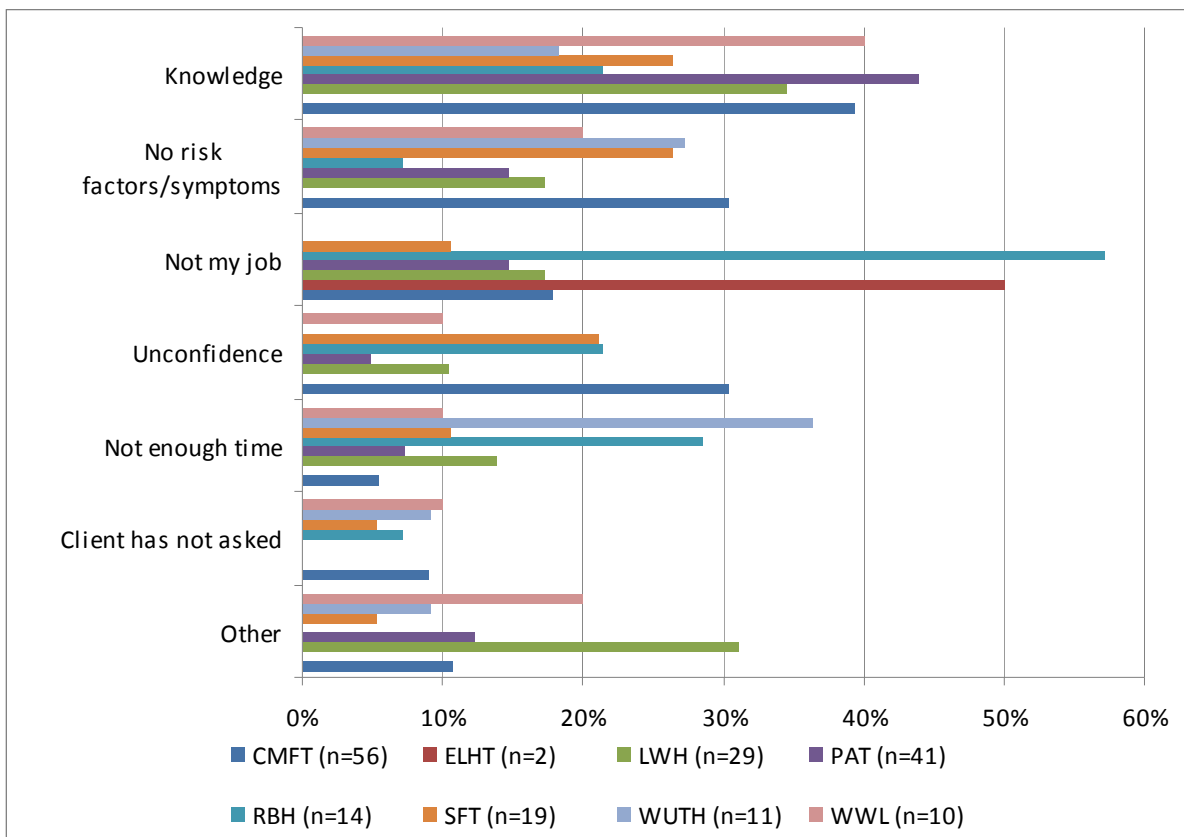




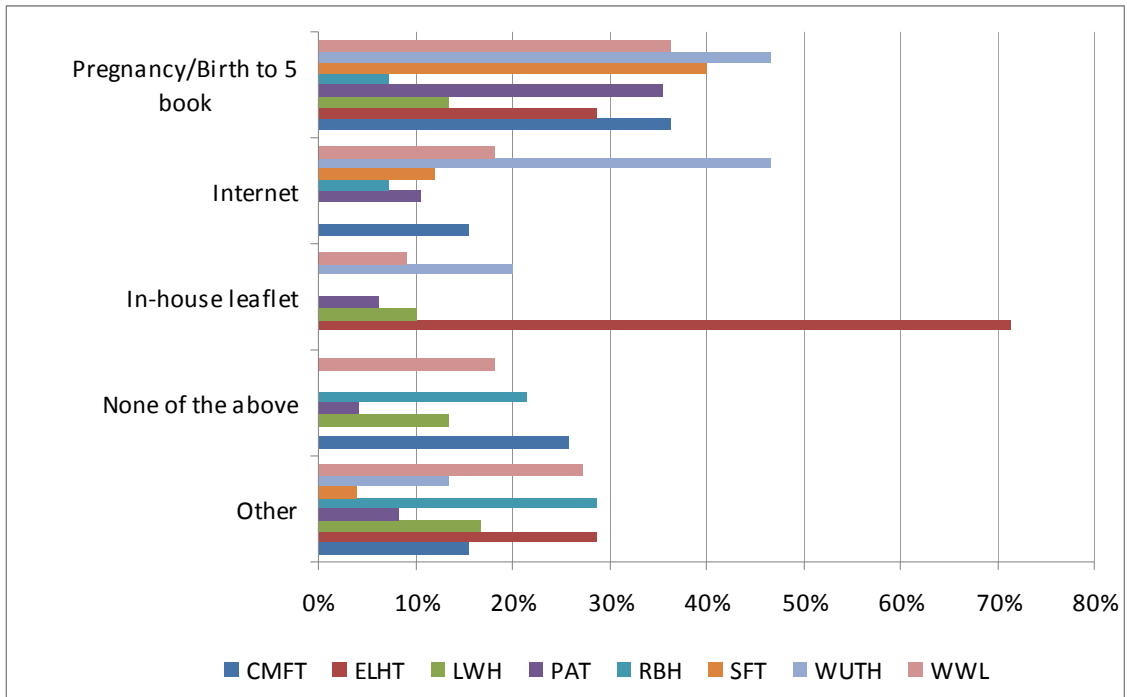
**Figure 39: Most commonly identified risk factors/symptoms of vitamin D deficiency by Acute Trust**



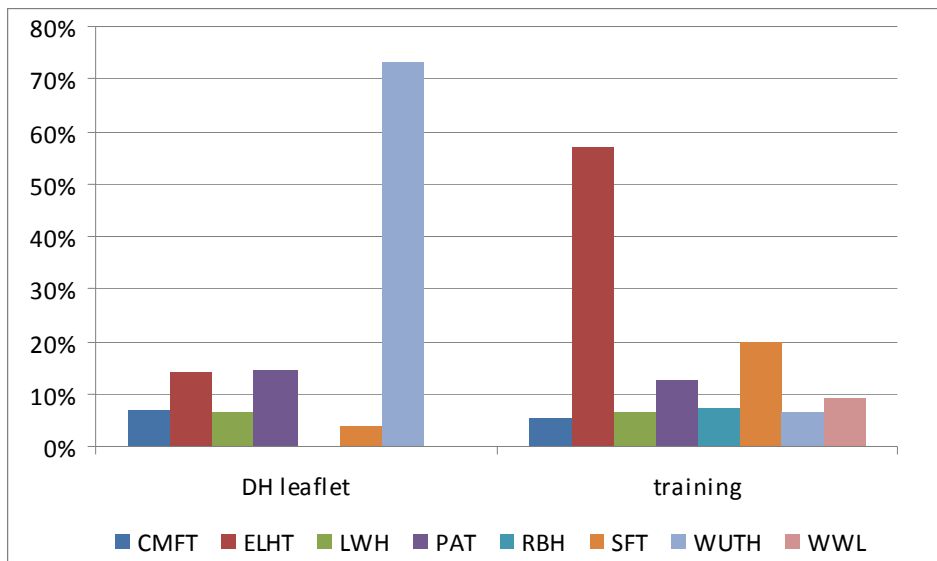
**Figure 40: Reasons for not discussing vitamin D who reported not discussing with 'all' clients by Acute Trust**



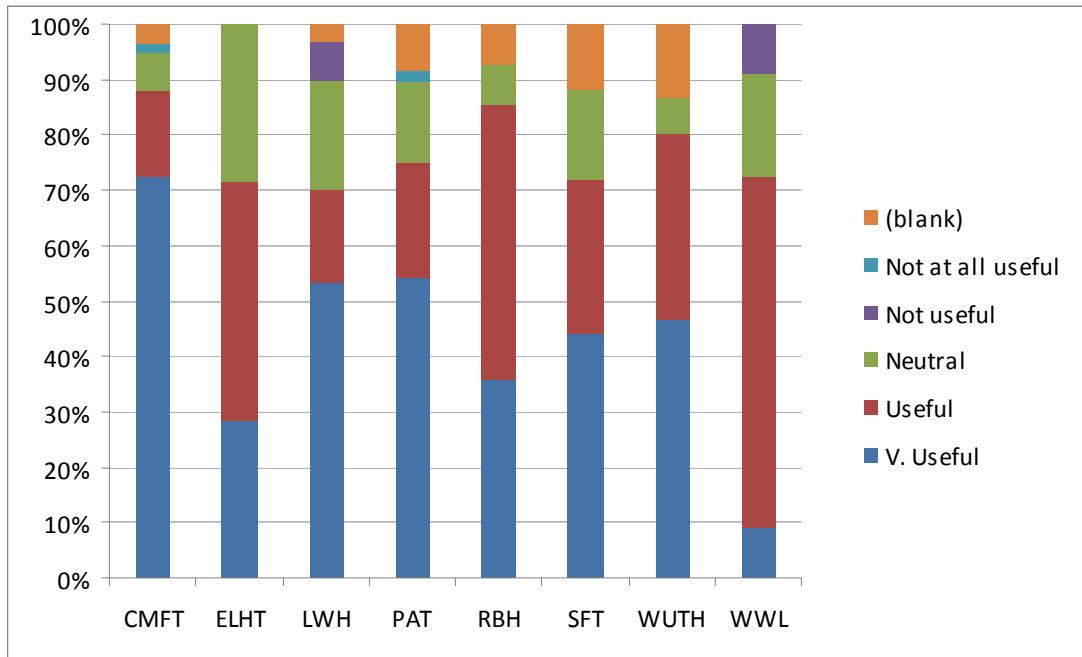
**Figure 41: Resources referred to by midwives when discussing vitamin D with clients by Acute Trust**



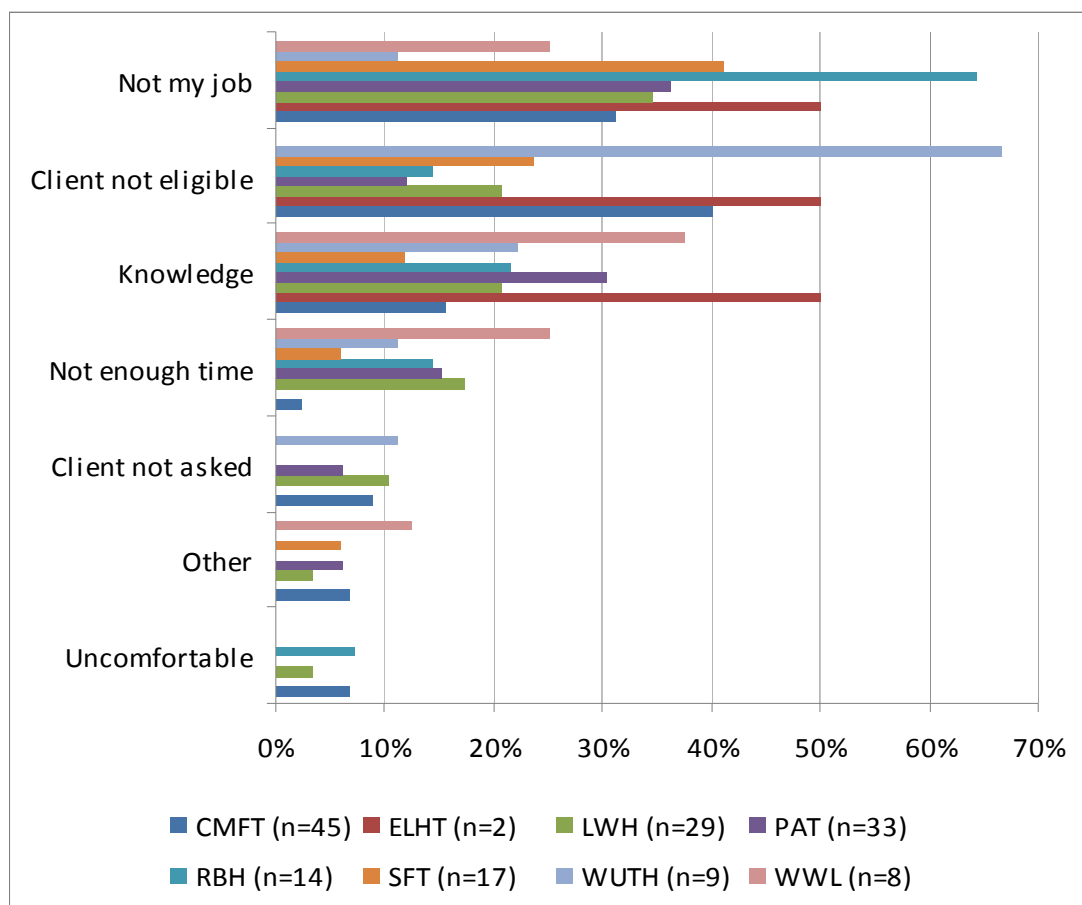
**Figure 42: Awareness of DH vitamin D leaflet and experience of vitamin D training amongst midwives by Acute Trust**



**Figure 43: Usefulness of potential training in vitamin D by Acute Trust**



**Figure 44: Reasons for not discussing Healthy Start amongst midwives who report not discussing with 'all' clients by Acute Trust**



**Figure 45: Healthy Start support, resource availability and distribution amongst midwives by Acute Trust**

