

Putting NICE guidance into practice

# **Costing statement: Vitamin D: increasing supplement use among at-risk groups (PH56)**

Published: November 2014

**Update information**

**May 2017:** Recommendations 1 and 6 were changed to update risk age groups. These changes do not significantly affect the resource impact.

# 1 Introduction

- 1.1 This costing statement considers the cost implications of implementing the recommendations made in [Vitamin D: increasing supplement use](#) (NICE guideline PH56).
- 1.2 We encourage organisations to evaluate their own practices against our recommendations and assess the potential local costs. Some of these are discussed in this statement, and in the accompanying local costing template. This can be used to model the cost impact of implementing the recommendations which may help to make the case for action locally.
- 1.3 Commissioners of services related to the prevention of vitamin D deficiency include: local authorities, Public Health England, NHS England, and clinical commissioning groups. There are a range of possible providers, including primary care, secondary care and community services.

# 2 Background

- 2.1 Vitamin D is essential for skeletal growth and bone health. Severe deficiency can result in rickets (among children) and osteomalacia (among children and adults). Dietary sources of vitamin D are limited. The main natural source is from the action of sunlight on skin. However, from mid-October to the beginning of April in the UK there is no ambient ultraviolet sunlight of the appropriate wavelength for skin synthesis of vitamin D.
- 2.2 National surveys suggest that around a fifth of adults and 8–24% of children (depending on age and gender) may have low vitamin D status giving a total of approximately 10 million people in England (See the Context section of the [guidance](#) for more details).
- 2.3 Population groups at higher risk of having a low vitamin D status include:

- Infants and children under 4 years
- Pregnant and breastfeeding women, particularly teenagers and young women
- People over 65
- People who have low or no exposure to the sun, for example, those who cover their skin for cultural reasons, who are housebound or confined indoors for long periods
- People who have darker skin, for example, people of African, African–Caribbean or South Asian family origin.

2.4 The Scientific Advisory Committee on Nutrition (SACN) is currently reviewing the dietary reference values for vitamin D intake in the UK population. The recommendations in the NICE guideline should be read in conjunction with any advice published by SACN.

2.5 Evidence suggests implementation of these recommendations has been limited ([Vitamin D – advice on supplements for at risk groups](#), Chief Medical Officers, 2012).

2.6 Testing for vitamin D deficiency has been reported to have increased 2- to 6-fold in recent years and is likely to be a considerable cost for the NHS ([Sattar et al. 2012](#)). Primary care spending on treatments for vitamin D deficiency have been increasing, and rose from £28 million in 2004 to £76 million in 2011 ([Prescription Cost Analysis 2011](#), Health and Social Care Information Centre).

2.7 The guideline focuses on preventing vitamin D deficiency among at-risk groups. The population in each group is estimated in the [local costing template](#) that accompanies this document.

2.8 A number of commissioners have responsibility for preventing and treating vitamin D deficiency. Table 1 describes who is responsible for each area.

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**Table 1 Commissioners responsible for preventing and treating vitamin D deficiency**

Providing vitamin D supplements	<p>The <a href="#">Healthy Start</a> programme provides nutritional supplements for women who are at least 10 weeks pregnant and children under 4 if the family is receiving certain benefits or child tax credits.</p> <p>Children’s services including nutritional supplements are commissioned by NHS England. It is planned that responsibility will switch to local authorities in October 2015. Supplements for pregnant women are commissioned by clinical commissioning groups.</p> <p>Local authorities may also commission/provide supplements for these groups, depending on local commissioning arrangements.</p> <p>As supplements are often bought ‘over the counter’, a relatively small proportion are prescribed in primary care (paid for by NHS England) and secondary care (paid for by clinical commissioning groups).</p>
Testing for vitamin D deficiency	This typically takes place in primary care, paid for by NHS England.
Treating vitamin D deficiency	<p>Low vitamin D status is treated with supplements provided through primary care, paid for by NHS England.</p> <p>Severe deficiency can lead to conditions such as rickets or osteomalacia that may need secondary care treatment, paid for by clinical commissioning groups. It may also contribute to falls.</p>
Preventing vitamin D deficiency	Public Health England has overall responsibility for helping local commissioners to improve public health. This includes preventing ill health.

### **3 Recommendations with potential resource impact**

3.1 We anticipate the recommendations which will have the most significant resource impact are those that advise increasing the provision of free or subsidised vitamin D supplements to at-risk groups, and reducing the level of testing for vitamin D deficiency. As a result, this document examines these recommendations in greater detail. The full recommendations can be found in the [guideline](#).

## ***Increased use of supplements***

### **Recommendation 5: Increase local availability of vitamin D supplements for at-risk groups**

The recommendation states, in part, that local authorities should:

- Ensure vitamin D supplements containing the recommended reference nutrient intake are widely available for all at-risk groups by:
  - Establishing arrangements with a range of settings to promote and distribute them. This could include local pharmacies, children's centres, midwifery and health visiting services and GP reception areas.
  - Considering providing free supplements for at-risk groups.

### **Recommendation 6: Improve access to Healthy Start supplements**

The recommendation states, in part, that local authorities should:

- Review current accessibility, availability and uptake of Healthy Start supplements.
- Consider how accessibility, availability and uptake could be improved. For example, consider offering free Healthy Start supplements to all pregnant and breastfeeding women and children aged under 4 years.
- Set up a central point for ordering, storing and distributing Healthy Start supplements across the local authority area. Individual distribution sites should be encouraged to order supplements from the central distribution point, rather than managing their own stock.

## **Background**

3.2 The 4 UK chief medical officers say that all at-risk groups should be made aware of how they can obtain vitamin D supplements locally ([Vitamin D – advice on supplements for at risk groups](#), Chief Medical Officers, 2012). They recommend providing supplements or ensuring their availability as a priority for local authorities.

3.3 There will be wide variation by area in the resource impact of programmes to provide free Healthy Start supplements to target at-

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risk groups. This can be due to differences in demographics, current practice and uptake. A case study in [appendix A](#) gives an example of the potential impact.

### **Potential costs**

- 3.4 The cost of Healthy Start supplements containing a prophylactic dose of vitamin D is anticipated to be £5.80 per year for a pregnant or breastfeeding woman, a person with darker skin, or who has limited exposure to the sun. The annual cost for children under 4 is £9.20 per year due to a higher unit price for supplements<sup>1</sup>, while for people over 65, the cost has been estimated at £20.70 per year<sup>2</sup>.
- 3.5 The cost of a dose to treat vitamin deficiency is up to £50 for a 12-week course of vitamin D<sup>3</sup>.
- 3.6 There may be costs to local authorities for setting up a central point for ordering, storing and distributing Healthy Start supplements if this is not already in place. This should be assessed locally.

### **Potential savings and benefits**

- 3.7 Preventing conditions caused by vitamin D deficiency is likely to save clinical commissioning groups and NHS England money. Low vitamin D status is typically treated in primary care with vitamin D and calcium supplements.
- 3.8 Severe vitamin D deficiency is relatively rare, but treating a child with the condition was estimated in 2006 to cost £2,500 ([Zipitis et](#)

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<sup>1</sup> Based on unit costs for Healthy Start supplements provided by the Department of Health: supplements cost £1.38 for a bottle of 56 drops for children and £0.83 for 56 tablets for use by adults. Details on the methodology are available from the [Economic evaluation report](#) developed for the guideline. However the unit cost for children's supplements used here is more recent than those used in that document, so there is a difference in the annual cost displayed.

<sup>2</sup> Lee et al. (2013) Comparison of cost-effectiveness of vitamin D screening with that of universal supplementation in preventing falls in community-dwelling older adults. *Journal of the American Geriatrics Society*, 61:5.

<sup>3</sup> Supplement choice and dosage can vary. The example cost given is based on [NHS Forth Valley](#), who suggest providing up to 5 Desunin or Fultium D3 tablets or capsules per day (800international units per tablet) for 12 weeks, with a unit cost of £3.60 for 30 capsules.

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[al.](#) – not adjusted for inflation). These costs are predominantly for inpatient and outpatient admissions in secondary care for treatment of rickets. Bone deformities caused by rickets or osteomalacia may require treatment with a brace or surgery. Orthopaedics outpatient attendances cost £119 for adult first-attendances and £70 for adult follow-ups; for paediatric orthopaedics these costs are £139 and £92 (Payment by Results, 2014/15 tariffs).

- 3.9 A central point for ordering, storing and distributing Healthy Start supplements could reduce the number of staff hours needed to administer the scheme, so leading to efficiency savings.

### ***Fewer vitamin D tests***

#### **Recommendation 7: Only test vitamin D status if someone has symptoms of deficiency or is at very high risk.**

The recommendation states, in part, that:

- Health professionals should not routinely test people's vitamin D status unless:
  - they have symptoms of deficiency
  - they are considered to be at particularly high risk of deficiency (for example, they have very low exposure to sunlight)
  - there is a clinical reason to do so (for example, they have osteomalacia or have had a fall).

### **Background**

- 3.10 Current practice varies widely, but vitamin D supplements are often prescribed or recommended after a test to establish whether there is a vitamin D deficiency.

## **Potential costs**

- 3.11 If supplements are provided via Healthy Start, or via local authorities for additional people from at-risk groups, there will be increased supplement costs (see section [3.4](#)).

## **Potential savings**

- 3.12 Vitamin D levels are tested by a blood test and the cost can vary widely. The [economic evaluation report](#) developed for the guideline estimated this to be approximately £17 per test. Savings from performing fewer tests depend on current and future practice and should be considered locally.
- 3.13 Increased use of prophylactic doses of supplements can prevent vitamin D deficiency from developing, and avoid associated treatment costs (see section [3.7](#)). Reducing the amount spent on vitamin D testing and avoiding these adverse outcomes is likely to be cost saving. These potential savings should be assessed locally.

## **4 Other considerations**

- 4.1 The guideline recommends that Public Health England, local public health teams and health and social care practitioners raise awareness of the importance of vitamin D supplements among the public. It is anticipated that this will be undertaken alongside current marketing activities, and won't incur additional costs.
- 4.2 Monitoring access and uptake of vitamin D supplements is recommended in existing guidance, and isn't expected to have an additional resource impact.

## **5 Conclusion**

- 5.1 Organisations are advised to assess the resource implications of this guideline. Potential additional costs may be incurred locally as follows:

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- Costs for providing supplements to at-risk groups are around £5.80 for an adult under 65, and £9.20 for a child, per year. If a central point needs to be set up for ordering, storing and distributing Healthy Start supplements across the local authority area, there may be additional costs.
- Provision of supplements for people over 65 costs around £20.70 per year.

Savings could potentially be made by:

- Reducing the need for vitamin D tests (saving around £17 per test).
- Avoiding some of the costs of treating deficiency and its associated conditions. The cost of treating vitamin D deficiency can be up to £50 for a 12-week course of supplements. Treating someone with severe vitamin D deficiency was estimated in 2006 to cost £2,500 (for example, to treat rickets).
- Making distribution and management of supplements more efficient.

5.2 Overall NICE's guideline is likely to be cost-saving for commissioners. Commissioners and other stakeholders should collaborate to ensure services that can help prevent vitamin D deficiency are adequately funded.

## **Appendix A: Case study showing local investment and outcomes**

### ***Context***

This case study was part of the evidence-base which informed the development of the guidance. Some of the costs and outcomes are presented here to provide an example of a relevant programme which has been implemented. It should be noted that the overall cost impact directly resulting from the scheme implemented is difficult to assess – for example savings from the decrease in the number of tests of vitamin D status are not quantified. However it is likely that the scheme was cost-saving. Additional detail is available in the studies listed under [Further information](#).

### ***Background***

Birmingham Clinical Commissioning Group ran a campaign to promote universal uptake of vitamin D supplements among pregnant and breastfeeding women and children under 5 years.

All pregnant women and mothers with children aged up to 12 months, and all children under 5 years were given free vitamin D supplements at health centres, children's centres and some GP practices and pharmacies.

Public information on the free supplements and their benefits was provided via Asian media networks and shops. In addition, posters and leaflets (in 8 community languages) were put up in health centres and surgeries.

Promotional materials carrying the campaign's logo, such as shopping bags, supermarket trolley keys, baby sunhats and T-shirts were available in local shops. Adverts were also placed on buses.

### ***Costs and outcomes***

The scheme cost approximately £25,000 for a general population of around 440,000. This is around £5,700 per 100,000 population. The main cost incurred was around the distribution and provision of supplements. Local

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authorities have a budget for promoting healthcare initiatives and the costs of promotional campaigns are typically funded predominantly from this budget.

Uptake of vitamin D supplements among pregnant and breastfeeding women, and children under 5 was estimated to have increased from around 2–4% to 20–23%. The number of children with severe vitamin D deficiency decreased from 29 in 2005 to 12 in a 12-month period during 2009/10. While the small number of cases involved make it difficult to accurately quantify the cost impact as a direct result of the scheme, this is indicative of a positive trend which may lead to substantial savings.

Public awareness of the importance of vitamin D for bone health increased from 21% to 79%. Awareness of the role of sunlight in increasing vitamin D status increased from 20% to 85% (2007 and 2011 figures respectively, Moy et al. 2012).

### ***Further information***

McGee E (2010) Prevention of rickets and vitamin D deficiency in Birmingham: The case for universal supplementation, Birmingham, National Health Service

McGee E, Shaw D (2013) Vitamin D supplementation: Putting recommendations into practice. *Journal of Health Visiting*, 1 (3), 2-7

Moy, RJ, McGee E, DeBelle GD et al. (2012) Successful public health action to reduce the incidence of symptomatic vitamin D deficiency. *Archives of Disease in Childhood* 97 (11): 952–4

## **About this costing statement**

This costing statement is an implementation tool that accompanies NICE's guideline: [Vitamin D: increasing supplement use among at-risk groups](#) (NICE guideline PH56).

**Issue date:** November 2014

### **This statement is written in the following context**

This statement represents NICE's view. It was arrived at after careful consideration of the available data and through consulting professionals. It should be read in conjunction with NICE's guideline. The statement focuses on those areas that may have an impact on resource utilisation.

The cost and activity assessments are estimates based on a number of assumptions. They provide an indication of the potential impact of the principal recommendations and are not absolute figures.

Implementation of this guideline is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guideline, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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