NICE National Institute for Health and Care Excellence

Resource impact summary report

Resource impact

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Contents

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Recommendations

Five artificial intelligence (AI) technologies can be used in the NHS during the evidence generation period as options to aid the opportunistic detection of vertebral fragility fractures (VFFs).

The technologies are:

- BriefCase-Triage
- CINA-VCF Quantix
- HealthVCF
- HealthOST
- IB Lab FLAMINGO.

These technologies can only be used:

- within their indicated populations as outlined in their instructions for use and with consideration of the risk groups as recommended in NICE's guideline on assessing the risk of fragility fracture in osteoporosis (CG146)
- if the evidence outlined in the evidence generation plan is being generated
- as long as they have appropriate regulatory approval, including NHS England's Digital Technology Assessment Criteria approval.

Commissioners should take into account whether a technology is likely to remain available on the UK market and supported by its company when entering into a contract.

The recommended technologies are designed to detect VFFs on CT scans.

Resource impact (cash and capacity items)

The following are the benefits attributed to the implementation of the AI technologies:

- The AI technologies may help opportunistically detect VFFs that would otherwise have been missed. This could help identify more people with a VFF who need treatment to improve their quality of life and reduce the risk of future fractures.
- Reducing the risk of further fractures may lead to a reduction in the number of hospital attendances or admissions, which may include demand on other costly services, such as those needed to manage hip fractures.

The following are the capacity and financial implications of implementing the AI technologies:

- Implementing the AI technologies could have a significant impact on radiology services, such as increasing the amount of imaging data that needs to be reviewed by a radiologist and the number of dual-energy X-ray absorptiometry (DEXA) scans that need to be done.
- Other services may be impacted when a VFF is identified, such as GP services, fracture liaison services and rheumatology departments.
- The use of treatments for osteoporosis may increase if more people with a VFF are identified.

Clinical experts explained that there is no clear pathway for people with VFFs and there is variation across the NHS. Where available, people are referred to fracture liaison services.

Implementation of the AI technologies will incur additional costs to the NHS. These costs may vary depending on the number of scans. There may also be additional maintenance, implementation and setup costs associated with the technologies relating to training and integration.

Eligible population for AI technologies

Briefcase-Triage can be used in people 18 years and over. The other recommended technologies can be used in people 50 and over.

The 2023/24 Diagnostic Imaging Dataset Annual Statistical Release reports on the number of CT scans conducted in the year to March 2024. The overall total number of CT scans is 7.68 million, of which 7.49 million are for adults. This reports that 0.8 million CT scans of the chest or abdomen took place, amounting to 10.5% of the overall total of 7.68 million CT scans, although committee members thought that this portion could be significantly higher in current practice.

Osteoporotic VFFs are common in older people and particularly in women, trans men and non-binary people after menopause. But they can also be associated with other conditions or factors, such as chronic or long-term corticosteroid or glucocorticoid use or malignancy in the vertebrae. Recent data shows an incidence rate of 7.1 per 10,000 adults aged over 50 (Curtis et al. 2016).

Treatment options for the eligible population

The comparator is standard care, where the reporting practitioner interprets the radiograph without AI assistance, usually within 24 hours of the image being taken.

For people with a new VFF confirmed on imaging, the clinician will assess using a recognised fracture risk assessment tool, such as QFracture or FRAX, and consider treatments to reduce the risk of fragility fractures. Most people will be referred for a DEXA scan after a VFF is identified. CG146 is being updated to include up-to-date recommendations on risk assessment, as well as recommendations on the treatment and prevention of fragility fractures.

Key information

Table 1 Key information

Commissioner(s)	ICBs
Provider(s)	NHS hospital trusts

About this resource impact summary report

This resource impact summary report accompanies the NICE early value assessment guidance on artificial intelligence (AI) technologies to aid opportunistic detection of

vertebral fragility fractures and should be read with it.

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