

## **Executive Summary**

Osteoporotic vertebral compression fractures (OVCF) can cause debilitating pain, which reduces activity and quality of life, and may require inpatient care. Percutaneous vertebroplasty (PVP) and percutaneous balloon kyphoplasty (PBK) aim to treat the pain associated with symptomatic OVCFs by injecting cement into a fractured vertebra. There is ongoing debate in both the international scientific field and among policy makers for these procedures. In light of this controversy, the Swiss Federal Office of Public Health is re-evaluating the indications for PVP and PBK.

This scoping report aims to determine the feasibility of conducting a Health Technology Assessment (HTA) evaluation of PVP and PBK based on the volume, nature, and characteristics of the primary research identified during the scoping phase.

A systematic literature search was conducted in eight biomedical databases, in addition to clinical trial databases and speciality websites. The search was designed to identify randomized controlled trials (RCT) that compare the use of PVP and PBK with non-surgical treatments or sham procedures in patients with painful OVCFs. Eligible populations for PBK were further restricted to patients with acute fractures of less than eight weeks, based on the current reimbursement listing.

From 8,526 search results, 17 unique RCTs were suitable for inclusion (12 for PVP, 5 for PBK). Existing health economic models are predominantly based on RCTs published up to 2014. Several studies have been published since then, which may impact the cost-effectiveness of the interventions. There were limited social, ethical, legal and organisational issues identified in the database searches.

The authors conclude that there is sufficient clinical evidence to review the safety, efficacy, and effectiveness of PVP and PBK for painful OVCFs in a full HTA, noting that lower levels of evidence may be included in the full evaluation in the absence of RCTs. If an HTA is conducted for PVP, the analysis will be stratified by fracture age into acute (up to eight weeks) or non-acute (greater than eight weeks) fractures, in line with the current restrictions on PBK and similar reimbursement criteria used internationally.