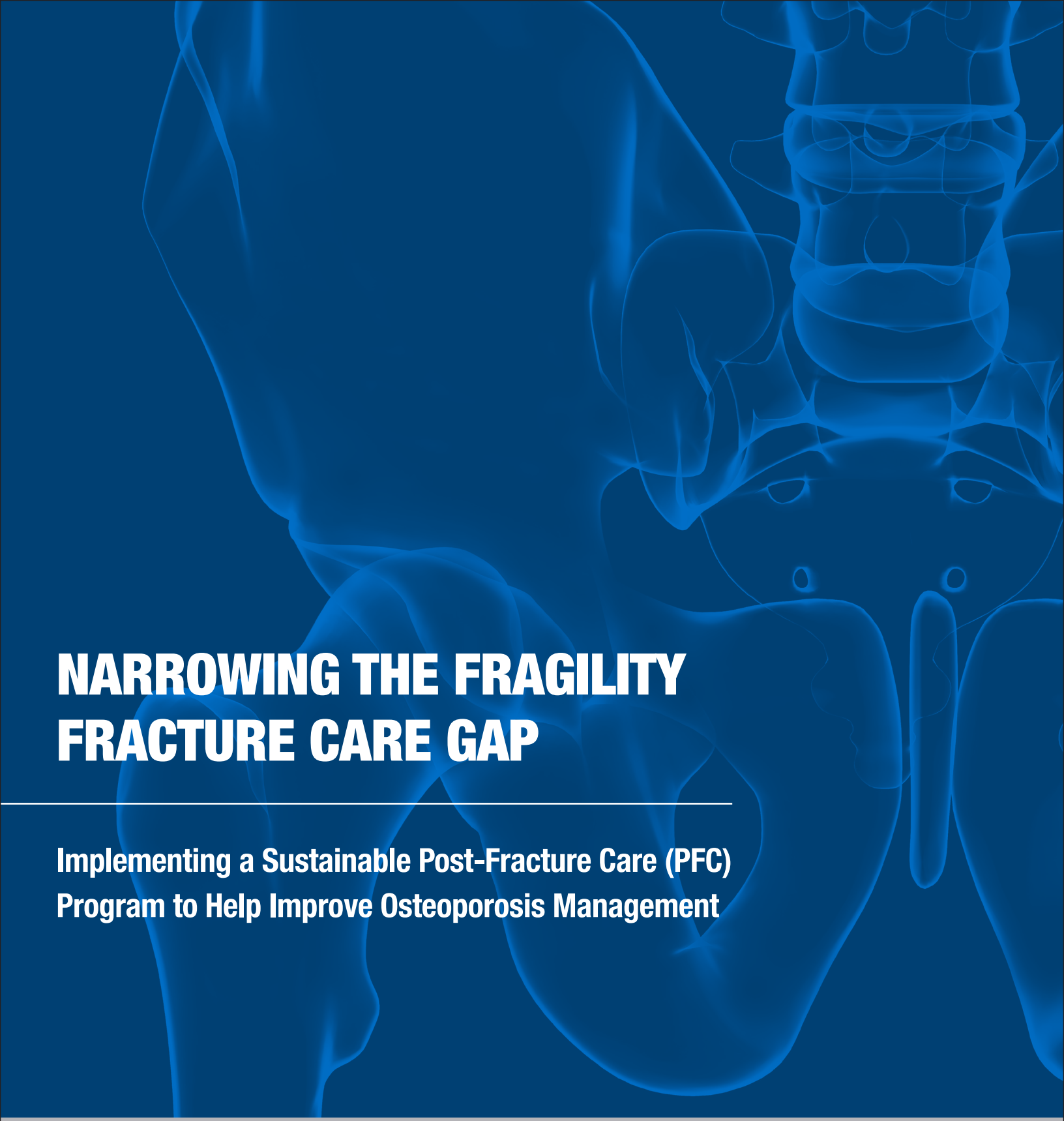

NARROWING THE FRAGILITY FRACTURE CARE GAP

Implementing a Sustainable Post-Fracture Care (PFC) Program to Help Improve Osteoporosis Management

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Understanding the Gap in Post-Fracture Care

Osteoporosis is a chronic disease, and breaking a bone due to osteoporosis can be a life-altering event.[1,2] The cost of osteoporosis-related fractures can be just as significant to health systems as other chronic diseases.[3]

Annual hospitalization costs for women ≥ 55 years[3,*,†]

$0.5 BILLION	$3.0 BILLION	$4.3 BILLION	$5.1 BILLION‡
Breast cancer	Stroke	Myocardial infarction	Osteoporosis-related fractures

- **1 in 2 women** and up to **1 in 4 men** over the age of 50 will experience a fracture related to osteoporosis in their remaining lifetime[4,5]

- Postmenopausal women are **5 times more likely** to experience a **repeat fracture** in the first year after initial fracture[6,§]
- Subsequent fractures are associated with a **2- to 3-fold increase** in medical costs compared to an initial fracture[7,**]

- Despite these facts, **84% of women** with postmenopausal osteoporosis who experienced a fracture **were not treated** for the underlying disease of osteoporosis within 6 months following a fracture, according to a survey of an integrated healthcare delivery system in Washington state[8,††]

Health systems that assess, stratify, and actively manage high-risk bone patients can potentially reduce fractures and help improve health and quality outcomes[9-11]

*Nationwide Inpatient Sample (NIS) was used to determine number of hospitalizations. These hospitals included specialty centers, public hospitals, and academic medical centers. Study was conducted between 2000 and 2011 and included facility-related hospital costs (defined as an admission to a short-term acute-care facility). Emergency room–only visits and same-day surgery-center visits are not included.[3]

†Cost-to-charge ratios provided by the NIS were used to estimate actual inpatient costs. These are commonly used to convert charges from individual hospitalizations to a cost of care. Cost-to-charge ratios were obtained from hospital accounting reports collected by CMS. The Consumer Price Index produced by the US Bureau of Labor Statistics was used to inflate costs to 2011.[3]

‡Osteoporosis-related fractures included hip, forearm, spine, pelvis, distal femur (including shaft), wrist, and humerus.[3]

§Data represent a population-based study of 4,140 postmenopausal women aged 50-80 years.[6]

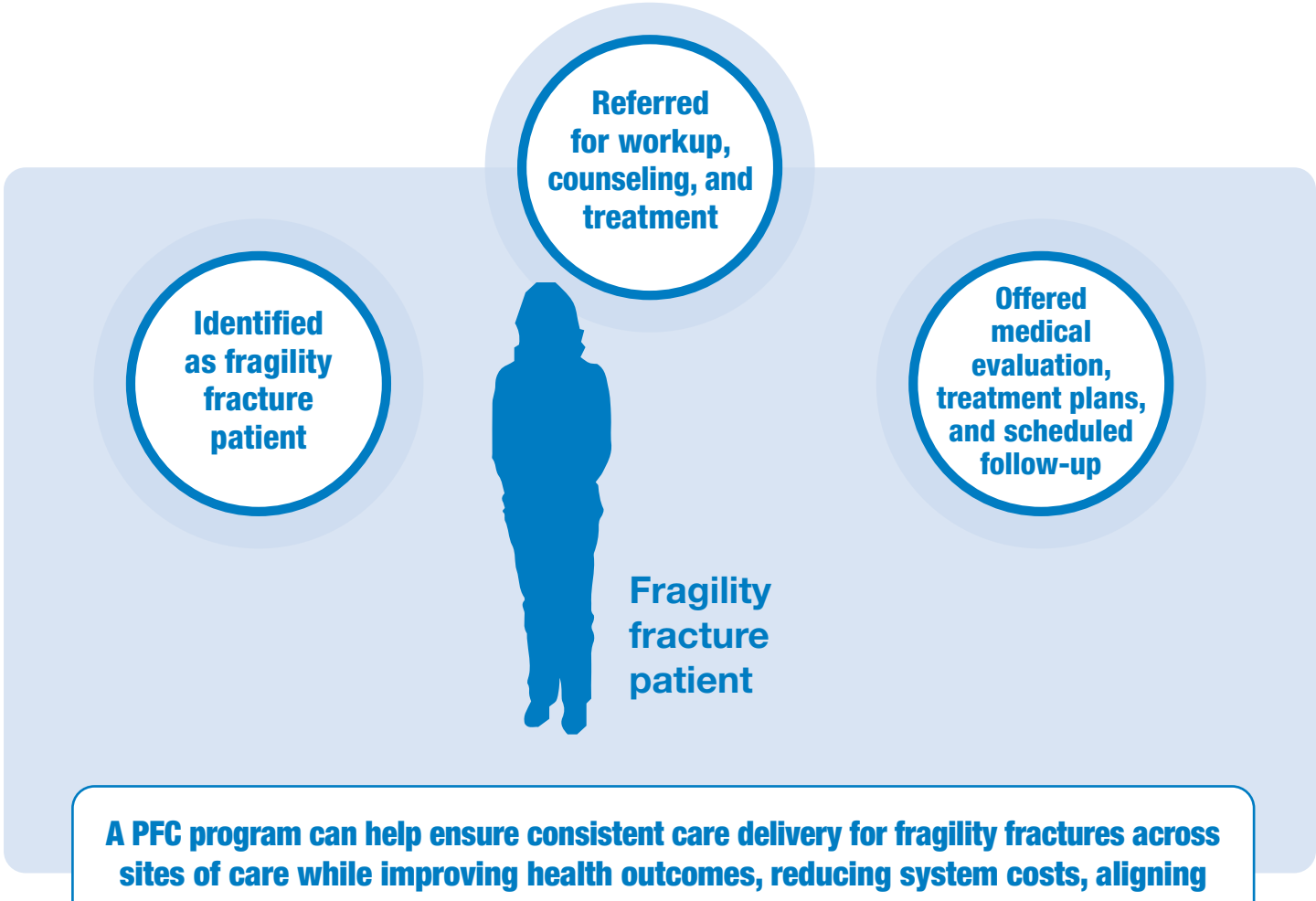
**Data based on a retrospective claim-based study, which assessed 1-year medical costs associated with second fracture(s) for patients over 50 years old with an initial closed hip, clinical vertebral, or nonhip nonvertebral fracture using 2002-2008 MarketScan® Commercial Claims and Encounters and Medicare Supplemental and Coordination of Benefit databases.[7]

††Survey conducted by Group Health Cooperative that provides comprehensive healthcare to ~600,000 individuals in Washington state. Data based on women aged 55 and older who experienced an osteoporosis-related fracture from January 1, 2013, to March 30, 2014.[8]

What Is a PFC program?

PFC programs, such as fraction liaison services (FLS), systematically identify, diagnose, treat, and manage patients with osteoporosis.[12,13] They:

- ✓ **Designed to effectively IDENTIFY, INVESTIGATE, and INTERVENE with appropriate treatment for patients who are at high risk for secondary fractures because of compromised bone health[9]**
- ✓ **Help improve health outcomes by reducing the patient risk of future fractures, which can help reduce costs to the healthcare system[9,12,13]**
- ✓ **Establish processes and use guidelines for patient screening and diagnosing[9]**



A PFC program can help ensure consistent care delivery for fragility fractures across sites of care while improving health outcomes, reducing system costs, aligning with certain key performance indicators, and guiding quality improvement[9,12,13,14]

Tips for Implementing a PFC Program

A range of stakeholders can develop and implement a PFC program.[15] Identify a champion to develop, implement, and provide clinical leadership to the program.[15] They are typically orthopedists, rheumatologists, endocrinologists, internists, or physiatrists.[12] They engage with local administrators to seek funding and support.[15]

Systemic acceptance and buy-in from other interested parties is important, including[15]:

- **Quality improvement professionals**
- **Pharmacy directors**
- **Hospital administrators**
- **Care managers**

7 elements of a high-functioning PFC program

IDENTIFICATION[9]
Identifying patients who may have had a fragility fracture and are in need of post-fracture disease management
1

INVESTIGATION[9]
Investigating patients with potential fragility fracture for future fracture risk and diagnosing patients with osteoporosis
2

INTERVENTION[9]
Initiating intervention for eligible patients diagnosed with osteoporosis
3

INFORMATION[9]
Educating patients on osteoporosis and secondary prevention of fracture
4

INTEGRATION[9]
Coordinating communication & management of a patient across all stakeholders involved in care
5

DATABASE[9,12,16]
Collecting, tracking, and analyzing PFC clinical and quality data using a database
6

QUALITY[9,12]
Institutionalizing PFC quality improvement as part of the organizational culture
7

The 3 I's can help ensure that patients receive the testing, treatment, and ongoing follow-up needed to help improve quality of care and achieve improved outcomes[9]

Technology Tools Can Help Identify Patients At Risk for Fractures

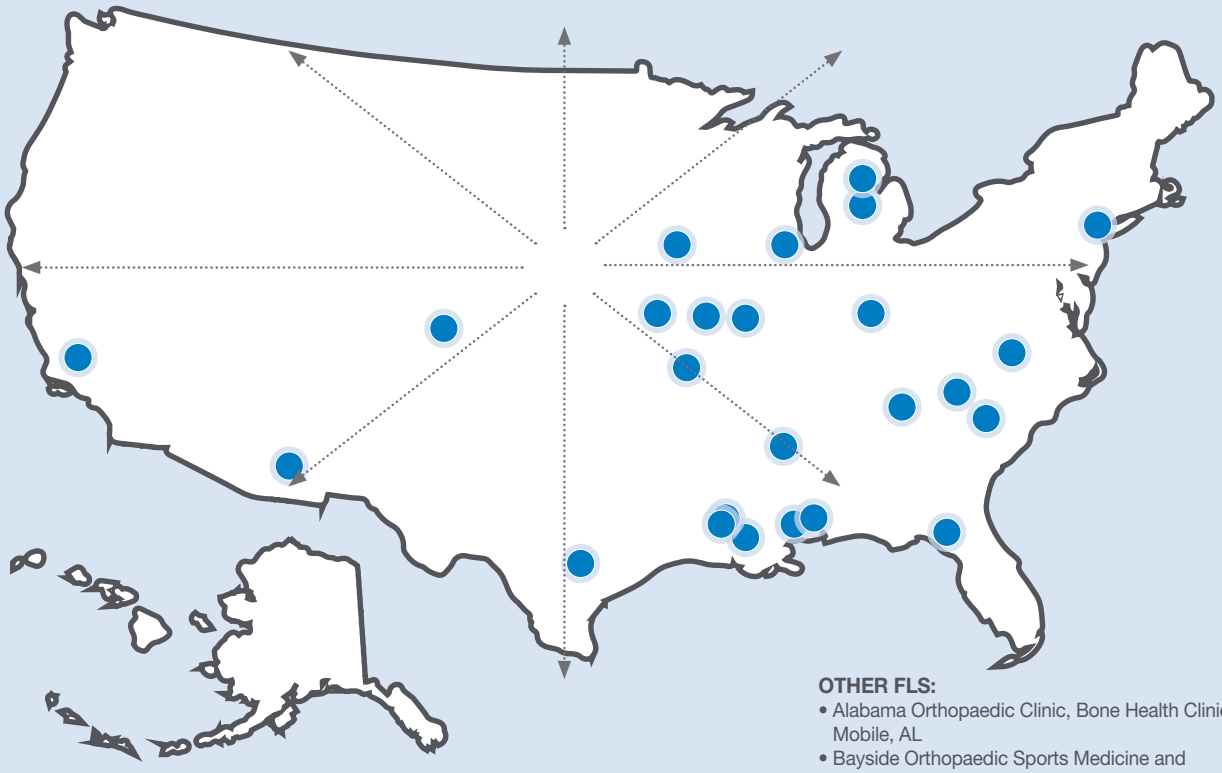
Health systems can leverage existing technology tools, including their electronic health record (EHR) system, to identify and manage at-risk patients.[9,17] The integration of artificial intelligence may also help identify patients at risk for fractures.[18,19]

Telehealth has expanded the opportunities for patient engagement and follow-up.[20] CMS has expanded access to Medicare telehealth services through a waiver that, on a temporary and emergency basis, covers office, hospital, and other visits furnished for new and established patients.[20,21]

Health systems can actively manage patients with osteoporosis at high risk for secondary fractures by implementing PFC programs tailored to their populations, based on their capabilities.[9,13]
Consider implementing a PFC program in your healthcare system

Examples of PFC programs

PFC programs can be a part of different care sites, including academic institutions, integrated health systems, and other sites of care. Organizations of various types, sizes, and locations have implemented PFC programs.[9,13]



ACADEMIC INSTITUTIONS:
- Department of Orthopaedic Surgery at Brigham and Women's Hospital, Boston, MA
- Department of Orthopaedic Surgery at Stanford University, Stanford, CA
- University of Missouri Health Care, Columbia, MO
- Virginia Commonwealth University Health System, Richmond, VA

INTEGRATED HEALTH CARE SYSTEMS:
- Banner Health, Phoenix, AZ
- CoxHealth Trauma & Acute Care Surgery, Springfield, MO
- DuPage Medical Group Musculoskeletal Institute, Naperville, IL
- Fracture Prevention and Bone Health Clinic at Mission Health, Asheville, NC
- Ochsner Health, Baton Rouge, LA
- Ochsner Health, New Orleans, LA
- The Christ Hospital Physicians, Orthopedics and Sports Medicine, Cincinnati, OH
- Wake Forest Baptist Health, Winston-Salem, NC

OTHER FLS:
- Alabama Orthopaedic Clinic, Bone Health Clinic, Mobile, AL
- Bayside Orthopaedic Sports Medicine and Rehabilitation Center, Fairhope, AL
- Bone Fragility Clinic, St. Peters, MO
- Bone Health Clinic, MidMichigan Health, Midland, MI
- Cape Fear Orthopedics and Sports Medicine, Fayetteville, NC
- Iowa Ortho, Des Moines, IA
- Michigan Orthopedic Center, Lansing, MI
- Neurosurgery Associates of Jackson County, Independence, MO
- North Mississippi Health Services Orthopaedic Trauma Clinic, Tupelo, MS
- Penrose-St. Francis Total Joint and Spine Center, Centura Health, Colorado Springs, CO
- Southeast Orthopedic Specialists, Jacksonville, FL
- South Texas Fracture Prevention Clinic, San Antonio, TX

PFC programs can help health systems improve identification of patients at risk for osteoporosis-related fracture to improve care management[9,13]

FLS information in each of these institutions can be found in their websites.

Resources and Key Links

National Osteoporosis Foundation BoneSource® Professional Program
https://www.bonesource.org/

International Osteoporosis Foundation Capture the Fracture® Campaign
http://www.capturethefracture.org/

American Orthopaedic Association Own the Bone® Program
http://www.ownthebone.org/

Project ECHO
https://hsc.unm.edu/echo/

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THE NEED FOR PFC PROGRAMS: KEY TAKEAWAYS

- Osteoporosis is a chronic disease, and breaking a bone due to osteoporosis can be a life-altering event[1,2]
- Although postmenopausal women are **5 times more likely** to experience a **subsequent fracture** in the first year after initial fracture, **84% of these women were not treated** for the underlying disease of osteoporosis within 6 months following a fracture[6,8]
- A PFC program can help ensure consistent care delivery for fragility fractures across sites of care while improving health outcomes, and reducing system costs, and guiding quality improvement[9,12,13]
- The 7 elements can be used to develop a high-functioning PFC program[9,12,16]
- Organizations of various sizes and types can implement PFC programs[22,23]

Amgen and UCB can provide additional educational materials.
Please contact your account manager for more resources

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