



Advancing High Performance Health

White Paper

***Osteoporosis Best Practices Learning Collaborative:
Aligning Your Plan with your Environment***



Osteoporosis Best Practices Learning Collaborative: Aligning Your Plan with Your Environment

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White Paper, December 2022

What We Already Know¹

- Osteoporosis is a chronic disease that can be managed and treated when it is properly diagnosed.
- Close to 54 million Americans have osteoporosis or low bone mass, putting them at increased risk of fractures.
- Bone fractures related to osteoporosis are responsible for more hospitalizations than heart attacks, strokes, and breast cancer combined.
- Approximately, one in two women and up to one in four men age 50 and older will break a bone due to osteoporosis.
- Osteoporosis may have a devastating impact on patients and their families. Individuals may suffer immobility and the loss of independence, which often leads to feelings of isolation or depression. Many patients also require long-term nursing home care.
- The total annual expense of care for all osteoporosis-related fractures, which included both direct medical costs and indirect costs, was \$57 billion in 2018. The total cost of fracture care is expected to grow significantly over time due to the aging of the U.S. population, an increase in total osteoporosis-related expenses to over \$95 billion in 2040.²

In January 2021, AMGA launched the Osteoporosis Best Practices Learning Collaborative, in partnership with Amgen, Inc., to focus on the evaluation, management, and medical treatment of patients with osteoporosis.

Collaborative Overview

The Collaborative occurred during the COVID-19 pandemic, which caused numerous challenges for organizations participating in the Collaborative. Nineteen participating healthcare organizations (HCOs) comprised of medical groups and integrated health systems of varying size and geographic locations, were selected to participate in the Collaborative (See Table 1).

1. National Bone Health and Osteoporosis Foundation. [nof.org/patients/what-is-osteoporosis](https://nbf.org/patients/what-is-osteoporosis).

2. Dane Hansen et al. Medicare Cost of Osteoporotic Fractures, *Milliman Research Report*, August 2019.

Table 1: Osteoporosis Best Practices Learning Collaborative Participants

Organization	Organization State	Organization Type	FTE Physicians
Bandera Family Medical Group (WellMed)	Texas	Group Practice	5/224
CareMount Medical	New York	Group Practice	620
Excela Health	Pennsylvania	IDS	170
Florida Medical Clinic	Florida	Group Practice	221
Geisinger Health	Pennsylvania	IDS	1110
HealthPartners	Minnesota	IDS	1700
Kelsey-Seybold Clinic	Texas	Group Practice	370
Maine Medical Partners	Maine	Group Practice	501
Mercy	Missouri	IDS	2100
Ochsner Health	Louisiana	IDS	1500
Premier Medical Associates	Pennsylvania	Group Practice	76
Prevea Health	East and West Wisconsin	IDS	183
Sentara Healthcare	Virginia	IDS	474
SIMEDHealth	Florida	Group Practice	84
St. Luke's University Health Network	Pennsylvania & New Jersey	IDS	507
Summa Health	Ohio	IDS	268
UC San Diego Health	California	Academic/Faculty Practice	500
University of Rochester Medical Center	New York	Academic/Faculty Practice	12/1500
Utica Park Clinic	Oklahoma	Group Practice	262

The osteoporosis collaborative used the AMGA Best Practices Learning Collaborative framework, which is the foundation of AMGA collaborative. The framework provides a shared learning format that supports an exchange of knowledge and the implementation of new ideas to provide high quality care for chronic disease or preventative illness.

Goal and Objectives

The goal of the collaborative was to develop and implement clinical practice guideline-informed strategies and interventions to improve patient-centered assessment of fracture risks, evaluation of secondary causes, education, testing, diagnosis, and treatment in patients with osteoporosis to reduce the risk of fracture.

Identified objectives were to:

- Improve assessment of patients to determine risk, including patients at average risk, to identify patients at high risk who will need further testing and evaluation

- Improve testing of high-risk patients identified through question-based assessment or identified per age and fracture risk
- Improve diagnosis through proper performance, improved documentation, and interpretation of diagnostic testing
- Improve treatment of patients both at risk and diagnosed utilizing evidence-based medicine and algorithms

Problem and Objectives

AMGA’s quality improvement process includes identification of problems or motivating needs within organizations that are barriers to providing quality patient care. When the problem or motivating need is addressed, it can lead to improvement in care of patients with a chronic disease or preventive illness. The AMGA team with the assistance of

Figure 1: AMGA Best Practices Learning Collaborative Framework



National Advisory Committee identified eight problems (see box) with corresponding objectives, or strategies, that align with the overall osteoporosis collaborative goal, objectives, and measures. Each participating HCO selected a minimum of three problems from the list as a focus for improvement in their organization. Each HCO ranked all eight problems and corresponding objectives in order of priority. The overall four highest ranking problems selected for the Collaborative were:

1. Identifying individuals in a population who are at risk for fracture
2. Post fracture care
3. Lack of testing and clinical assessment of patients at risk for fracture according to current clinical practice guidelines
4. Lack of patient awareness and education about osteoporosis

Measures

Measurement is an essential component of the quality improvement process within AMGA’s Best Practices Learning Collaborative. Measure reporting by collaborative participants facilitates both internal and external tracking of improvement and movement toward collaborative goals, facilitates peer-to-peer learning, and helps identify areas of opportunity. Informed by osteoporosis clinical guidelines and existing Healthcare Effectiveness Data and Information Set (HEDIS) and National Quality Forum (NQF) measures, the Osteoporosis Best Practices Learning Collaborative measures were developed collaboratively with the national advisors, AMGA, and participating organizations. The resulting measures (see box) focused on current practices surrounding identification, diagnosis, and pharmacologic treatment of patients with osteoporosis. Measures were reported separately for women and men.

Participants were asked to report nine quarters of data (Q1 2019 – Q1 2021) prior to the Collaborative intervention period (Q1 2021 – Q1 2022). This extensive pre-intervention reporting was intended to document osteoporosis measure rates leading up to the COVID-19 crisis and through the ongoing pandemic. Understanding this history helped to contextualize their improvements throughout the

National Advisory Committee-Identified Problems

Problem 1: Identifying individuals in a population who are at risk for fracture

Problem 2: Post Fracture Care (PFC, formerly Secondary fracture prevention)

Problem 3: Lack of testing and clinical assessment of patients at risk for fracture according to current clinical practice guidelines

Problem 4: Lack of patient awareness and education about osteoporosis

Problem 5: Lack of adequate treatment of patients with osteoporosis at risk for fracture

Problem 6: Lack of diagnosis and documentation of patients at risk for fracture with appropriate use of testing, fracture risk scores, and clinical assessment

Problem 7: Lack of care coordination for patients with osteoporosis and fracture

Problem 8: Knowledge deficit of prevention and management of patients with osteoporosis

Osteoporosis Best Practices Learning Collaborative Measures

Testing

Measures 1A and 1B: Rates of DXA testing among women (age 65–90) and men (age 70–90)

Diagnosis

Measures 2A and 2B: Rates of diagnosis in women and men (age 50–90) who meet diagnosis criteria for osteoporosis (fracture*, T-score, or FRAX score)

Treatment

Measures 3A and 3B: Rates of treatment in women and men (age 50–90) who have an osteoporosis diagnosis

Measures 4A and 4B: Rates of treatment in women and men (age 50–90) who had a fracture* at age 50 or over

Note: Rates for Measures 1 and 2 refer to testing or diagnosing “ever,” defined as occurring in the current reporting quarter or any time prior. Rates for Measures 3 and 4 refer to treatment that occurred within the last 25 months ending and inclusive of the reporting quarter.

* Includes any fracture of the spine hip, femur, humerus, pelvis, or wrist (including distal radius or ulna). See AMGA Osteoporosis Code List for fracture ICD-9 and ICD-10 codes to include.

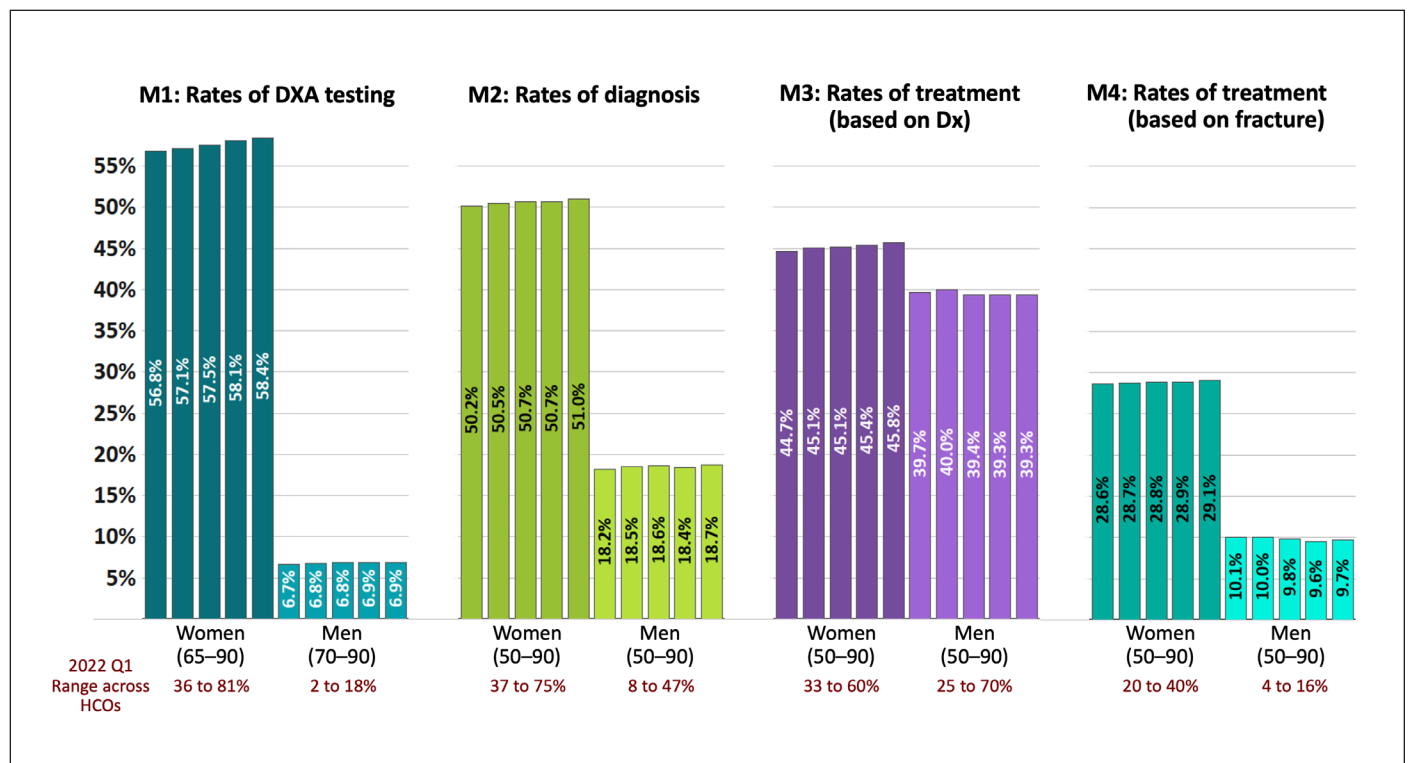
Collaborative and allowed HCOs to set realistic expectations of what was possible within their organization moving forward in the face of unprecedented challenges, which arose throughout the pandemic.

To document improvement, we considered Q1 2021 measure rates as baseline and tracked the change from the baseline for each subsequent quarter of the intervention period. Participants submitted data using an Excel template that contained tools for tracking measures over time. AMGA worked with organizations to assure data quality and produced a benchmark data report comparing all HCOs each quarter. During monthly webinars, quantitative reports were discussed together with qualitative insights provided by the participating HCOs. This mixed methods approach helped to contextualize improvements seen in the quarterly measure data.

As seen in Figure 2, rates for men were significantly lower than for women with the exception of Measure 3, pharmacologic treatment for those with an osteoporosis diagnosis. Variation in rates was significant across the groups for every measure. The highest performers had rates approximately 2x higher than the lowest performers in each measure (as much as 9x for males) and the highest performers were not consistent across all measures.

On average across all measures, the collaborative participants achieved small, steady improvements from baseline Q1 2021 to Q2 2022 for women (Figure 2). The metric with the greatest absolute improvement of 1.6% was Measure 1, DXA testing among women aged 65-90 with no prior diagnosis. At the individual HCO level, several notable improvements were observed. For Measure 1 (women), 10 of 17 reporting organizations (59%) had >1.0% improvement, ranging from 1.1 to 7.0% absolute improvement (2 to 16% relative). Similarly for rates of diagnosing among women with evidence of osteoporosis (Measure 2), 7 HCOs showed >1.0% improvement (1.1 to 3.0% absolute, 3 to 9% relative). For treatment among women with an osteoporosis diagnosis (Measure 3), 8 HCOs demonstrated >1.0% improvement (1.4 to 5.2% absolute, 3 to 9% relative); and for treatment among women with evidence of a fracture occurring at 50+ years (Measure 4), 8 HCOs showed >1.0% improvement (1.3 to 4.0% absolute, 5 to 12% relative).

Figure 2: 2021 Q1 to 2022 Q1 – Group-Weighted Averages for Osteoporosis Measures



In addition to the challenges that HCOs faced with competing priorities and limited resources due to COVID-19, organizations also experienced additional challenges getting buy-in to focus quality improvement efforts on osteoporosis among male patients. These challenges included United States Preventive Services Task Force (USPSTF) guidance, which concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis to prevent osteoporotic fractures in men and inconsistent payer reimbursement policies.³ Accordingly, there were only minimal improvements seen in the Measure rates for men on average across the collaborative.

Quality Improvement

AMGA's quality improvement process for all Collaboratives includes goal setting, problem and objective identification, and implementation of selected interventions. This process is recorded on an Action Plan template, which HCOs submitted bimonthly to AMGA for review. In addition, each organization selected an intervention to complete a Plan Do Study Act (PDSA) for rapid cycle improvement. Several interventions selected for implementation of the PDSA cycle by HCOs focused on some form of provider, staff, and patient education and implementation of clinical decision support tools. For example:

- Increase the rate of approvals for osteoporosis treatment through provider education.
- Monthly provider education on identifying patients who are at risk for fracture and improving testing (Dual-energy X-ray absorptiometry/DXA scans) and clinical assessment of these at-risk patients.
- Improve patient education by measuring provider counseling at the point of care. Outreach campaign to women 65-85 providing education on screening.
- Improve documentation of at-risk patients for fracture.
- Document discrete data into the electronic health record (EHR).
- Increase rate of fall risk screening during Annual Wellness Visits.
- Increase DXA scan screening rates by increasing awareness about osteoporosis guidelines.
- Survey of rheumatology clinic nursing staff on awareness of osteoporosis in women aged 65-90 and men aged 70-90 to provide baseline data for education.

In addition to tracking group interventions, facilitators, and barriers, AMGA also identified themes that are associated with implementation. AMGA used the Consolidated Framework for Implementation Research (CFIR) to guide this approach.

AMGA used an iterative process of collecting qualitative data via clinical outreach, documentation submissions, virtual site visits, and webinar presentations and meetings to identify core themes. AMGA also confirmed with the groups to ensure that AMGA's interpretations accurately reflected HCOs' experiences.

The CFIR construct domains of inner setting, outer setting and process provided a framework to assess barriers and facilitators to organization implementation. AMGA also focused on a subset within each construct.

3. U.S. Preventive Services Task Force.
uspreventiveservicestaskforce.org/uspstf/recommendation/osteoporosis-screening.

- Inner Setting:
 - Organizational culture
 - Implementation climate (example: shared receptivity to change)
 - Readiness for implementation (example: organization commitment to implement)
- Outer Setting
 - Patient needs and resources
 - Peer pressure (example: competition among peers)
 - External policy and incentives (example: spread of interventions through recommendations or guidelines)
- Process:
 - Planning (example: tracking goals and milestones)
 - Engaging (example: engage appropriate individuals in implementation)

AMGA documented cases of positive constructs aiding in implementation of a specific intervention, as well as creating an environment that supported the implementation of interventions, in general. Case examples also show positive constructs working to drive interventions, at point of creation, as well as through implementation and sustainability.

Overall, across the Collaborative, positive organization characteristics enabled intervention implementation. The most common positive constructs that emerged are patient needs and resources (recognizing and prioritizing patients' needs), culture (culture or organizational assumptions or thinking can be a less tangible reason why interventions fail), and engaging (bringing in appropriate team members early).

The most common negative or neutral experience with a construct was readiness for implementation. These are immediate indicators of organizational commitment to implement an intervention, like leadership engagement, available resources, and access to knowledge and information.

Engagement Activities

Due to the COVID-19 pandemic, the first Collaborative meeting was held virtually. Participating organizations attended a virtual two-day meeting to discuss plans and challenges, share experiences, and learn from experts in the field of osteoporosis. Monthly webinars provided education and an opportunity for participants to share quarterly benchmarking reports and best practices. Subject matter and clinical experts in the field of osteoporosis led the educational webinars. In addition, each HCO provided a 10-minute presentation of their progress in implementing their program. Some interventions shared during the presentations and throughout the collaborative were identified by the participants as having contributed to improvement in their Measures. For example:

Bandera Family Health Care (BFHC)

Problem: Lack of diagnosis and documentation of patients at risk of fractures with appropriate use of testing, fracture risk scores, and clinical assessments.

Objective: Implement new procedures for documentation of evidence of osteoporosis in medical records by tracking abnormal bone DXA and X-rays.

Intervention: BFHC checked weekly both their DXA machine and x-ray machine logs to see which patient had an abnormal bone DXA (T score <-1.0) or any pathological fractures. A tracking form was designed to capture all abnormal bone DXA and L-T spine x-rays. BFHC conducted outreach to patients with abnormal results to schedule follow-up appointments for appropriate care and treatment.

UC San Diego Health

Problem: Lack of patient and provider awareness and education about osteoporosis.

Objective: Identify opportunities for provider and patient education about osteoporosis and fracture prevention.

Intervention: Created a multimedia, multi-channel, patient education campaign that included brochures, EMMI video, web links, MyChart message, AVS updates, and patient brochures. Their Health Maintenance tab in the EHR was updated with “low risk,” “high risk,” and actively diagnosed categories. Clinical champions conducted a grand rounds clinical presentation to providers on updated osteoporosis guidelines and their work in the Osteoporosis Collaborative.

CareMount Medical Group

Problem: Identifying individuals in a population who are at risk for fracture.

Objective: Evaluate all postmenopausal women aged ≥ 50 years for osteoporosis risk and risk of fracture.

Intervention: Created an osteoporosis screening and diagnosis algorithm for their providers. The algorithm was distributed to primary care, endocrinology, and OB/GYN departments with training provided at department meetings. Providers were also able to see their osteoporosis screening/treatment rates on the chronic disease dashboard. In addition, regional provider leads were utilized to determine high/low performers, barriers, and success stories.

Utica Park Clinic

Problem: Lack of diagnosis and documentation of patients at risk for fracture with appropriate use of testing, fracture risk scores, and clinical assessment.

Objective: Implement procedures for documentation of evidence of osteoporosis in patient’s medical record.

Intervention: Developed a registry of patients that have gone to the ED with a fracture. The registry helped to identify patients for outreach needing follow-up care. Standing Orders were created for staff to order referrals to the post-fracture clinic and to order a DXA through a walk-in clinic, preventing delays in care. DXA screening was added to the annual wellness visits.

A virtual engagement activity, developed for large HCOs who expressed interest in their colleague’s interventions and program, provided the participants with another setting for engagement with their peers to ask questions and share knowledge.

Other engagement activities included outreach calls with HCOs for discussion and coaching from AMGA quality and analytics staff. An AMGA listserv and portal were provided to enable communication and access to webinar recordings, extra tools, comparative data, and more.

Site Visits

Throughout the Osteoporosis Collaborative, HCOs worked to develop and implement clinical practice guideline-informed strategies and interventions to improve testing, diagnosis, evaluation, and treatment for osteoporosis at their organizations. Due to the COVID-19 pandemic, AMGA held its first virtual site visit in lieu of an in-person visit. Ten participating organizations were selected to participate in a two-hour site visit. The purpose of the visit was to provide AMGA with a comprehensive review of the program and current activities and to meet with team members who have participated and contributed to the organization's program. Some areas of discussion during the visit included a review of the current data and osteoporosis program; the impact of the COVID-19 pandemic on the organization and community; and the challenges, successes, and next steps for each organization throughout the remainder of the collaborative. The site visit also provided an opportunity to share other organizations' challenges and successes implementing similar interventions.

Challenges

The Osteoporosis Collaborative was implemented during the second year (2021) of the COVID-19 pandemic. As a result, participants were challenged in implementing their interventions:

- Staffing shortages, staff reassignments, and loss of staff all affected their programs.
- Lack of information technology (IT) resources and other organizational priorities caused a delay in implementing CDS tools and obtaining data.
- Inability to obtain DXA and Fracture Risk Assessment Tool (FRAX) scores in the EHR without manual entry and limited established guidelines for screening and reimbursement for men.

Sustainability

During the wrap-up meeting in April 2022, organizations participated in a team activity to document their plans to sustain and scale their work after the Collaborative. Responses included continuing education for providers, clinical staff, and patients. Some ideas for activities include lunch-and-learns for staff, continuing medical education (CME) offering for providers, and using social media platforms for patient education on osteoporosis.

Another idea was collaboration with other team members such as pharmacists and transition of care nurses to provide a team-based approach to services. This included broadening orthopedics involvement and bringing awareness and education about osteoporosis-related fractures prevention.

Other ideas included expanding the osteoporosis program from a pilot to system-wide implementation, continued performance measurement updates to providers, initiating bulk ordering for DEXA Scans, and developing a pathway to track T-scores and FRAX scores to assess therapy efficacy.

Conclusion

At the beginning of Osteoporosis Best Practices Learning Collaborative, HCOs acknowledged their work to improve the care of patients with osteoporosis was a long-term investment and went beyond the 12-month Collaborative. The AMGA team provided the participants with the tools and education to strengthen existing programs or develop new ones. Despite the COVID pandemic challenges, HCOs were still able to make progress within their programs. However, if given additional time and support, the HCOs would be able to show greater improvement, especially in their measurement rates.

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AMGA Foundation is AMGA's philanthropic arm that enables medical groups and other organized systems of care to consistently improve health and health care. AMGA Foundation serves as a catalyst, connector, and collaborator for translating the evidence of what works best in improving health and health care in everyday practice. Learn more at amga.org/foundation.



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