London

Family Health Team

Management of Osteoporosis Through an Evidence-Based Pilot Program

A pilot to improve chronic disease management

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BACKGROUND

Fractures from osteoporosis are more common than heart attack, stroke and breast cancer combined[1]. Furthermore, 28% of women and 37% of men who suffer a hip fracture will die within the following year[1]. Although this chronic disease has huge system and patient impact, little has been done to develop effective programs for management at the primary care level. The London Family Health Team (LFHT) has developed a pilot program centered on evidence-based guidelines for management of individuals with osteoporosis through improved patient outcomes. The aim of the LFHT was to improve outcomes for patients with osteoporosis, while ensuring that our care was patient-centered. Our goal was to implement evidence-based guidelines into a program that is applicable in a primary care or FHT setting. We also aimed to build and utilize EMR tools and other resources to develop this chronic disease program and to track measures. Five of our team physicians were able to participate in the pilot, resulting in a target screening population of 2468. Of those screened, 438 patients have been diagnosed with osteoporosis and managed and treated through our program.

PROCESS

In order to implement this program, we first researched the most recent guidelines[2] and evidence-based medicine. From these we determined appropriate methods of treatment, timelines for screening and management, and evidence based measures to focus on. We built our program around these finding and incorporated clinical and data tracking tools. Standardized BMD orders and requisitions for bloodwork were created for each physician to ensure ease of ordering. To assist in risk categorization and increase accuracy of documentation in the patient's record, the online FRAX calculator was embedded into our EMR. This allows for proper categorization of patients into low, moderate or high risk osteoporosis. Once patients are categorized, low risk patients are sent a letter that has been pre-programed into the EMR to inform them of their diagnosis and to encourage healthy lifestyle. Moderate and high risk patients are booked for an appointment using the Osteoporosis Treatment Plan template. Data from this template is extracted and recorded on a spreadsheet containing our process, outcome and balance measures that were deemed appropriate based on the 2010 Osteoporosis Canada Guidelines[2], local specialists and the LFHT's Osteoporosis Pilot Group. Physician education sessions were hosted for team physicians to ensure full understanding of the program process, for assistance in diagnosis, management and treatment decisions on a case-by-case basis and to keep up to date on osteoporosis treatments and screening. Additionally, a patient education session was held with Osteoporosis Canada to educate patients about bone health.

OUTCOMES

In order to ensure that our care was following the evidence-based guidelines[2] and also able to affect noticeable change in the experience of a patient with osteoporosis, we tracked to following measures on all of our patients who were diagnosed with moderate to severe osteoporosis:

- frequency of visit for osteoporosis management
- frequency of BMD
- prior & recent T-scores with emphasis on direction of change
- ordering of thoracolumbar x-ray
- FRAX score
- self-management and living situation
- fragility fractures and ER visits for these fractures
- falls and ER visits for these falls
- pharmacotherapy

The number of visits dedicated solely to osteoporosis management has increased, indicating a stronger focus on managing osteoporosis. Baseline data has been collected for each patient with osteoporosis and monthly review of our measures has begun.

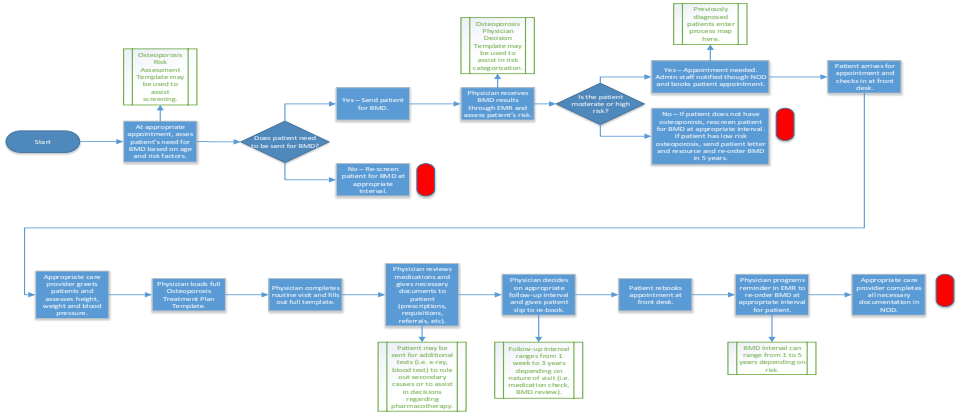

Fig. 1 Process map of standard osteoporosis diagnosis and management visit.

Patient Name	Risk Category	VISITS			BMD												OTHER MEASURES		CARE			FRAGILITY FRACTURES					FALLS			PHARMACOTHERAPY					
		Date of Last Visit	Appropriate Interval for Visit	Patient Seen in Appropriate Risk Interval	Date BMD Ordered	BMD Ordered Appropriate Interval	Date of Last BMD	Approx BMD Interval (in Years) Update	Prior T-score Lumbar Spine	Most Recent T-score Lumbar Spine	Worsening of Lumbar Spine T-score	Prior T-score Femur (%)	Most Recent T-score Femur (%)	Worsening of Femur (%) T-score	Date Last X-Ray was Ordered	FRAX Score	Education/ Self Management	Increase in CCC (for fall prevention)	ALC Diagnosis (Hospital) Y/N	Date of ER Visit for Fragility Fracture	EVS Visits for Fragility Fracture	Date of Fragility Fracture	Fragility Fracture in the Year	History of Fragility Fracture	Type of Fragility Fracture(s)	Date of ER Visit for Fall	EVS Visits for Fall Visits	Date of Fall	Risk in the Year	Candidate for Pharmacotherapy	Oral Bisphosphonate	Intravenous Bisphosphonate	Reason for Failure	Reason for Decline	Next Consideration to be discussed in Appointment
	mod	19-Aug-14	1	1	12-Feb-14	1	23-May-14	3	0	0.5	-0.1	1	-1.1	-2.2	1	03-Mar-14	1	15	1	0	0	0		0				0		0	1	1	0			
	high	12-Feb-14	1	1	12-Feb-14	1	17-Mar-14	1	0	2.4	-2.2	0	-2.4	-2.4	0	15-Jul-10	0	12	1	0	0	0		0				0		0	1	0	0			
	mod	07-Jan-14	1	1	13-Oct-09	0	06-Nov-09	3	1		0.5	0		-1.4	0		0	15	1	0	0	0						0		0	1	0	0			
	mod	22-May-14	1	1	26-Aug-13	1	13-Oct-13	3	0	.1	-1.2	1	-1.9	-2.6	1	17-Mar-14	1	15	1	0	0	0	2004-01-01	0	1	right intertrochanteric		0		0	1	1	0			
	low	02-Oct-12	5	1	08-Oct-10	1	02-Dec-10	5	0	-0.3	0.1	0	-0.4	-0.2	0		1	8	1	0	0	0		0				0		0	0	0	0			
	mod	15-Sep-14	1	1	23-Nov-11	1	06-Jan-12	3	0		-2.9	0		-2.2	0	08-Nov-12	1	8	1	0	0	0		0	1	thoracic compression #		0		0	1	1	0			
	low	12-Jul-08	5	0		0	18-Jun-08	5	1		-2.3	0		-1	0		1	8	1	0	0	0		0				0		0	0	0	0			
	low	29-Jan-09	5	0		0	17-Apr-09	5	0		-1.4	0		-0.8	0		1	10	1	0	0	0		0				0		0	0	0	0			
	mod	07-Jul-12	1	1	04-Dec-07	0	30-Jan-08	3	1		-1.4	0		-1.8	0		0	15	1	0	0	0		0				0		0	1	0	0			
	mod	16-Jan-14	1	1	02-Oct-12	1	13-Dec-12	3	0	-1.6	-1.5	0	-1.4	-1.1	0	20-Oct-11	1	15	1	0	0	0		0				0		0	1	0	1	bisphosphonate intolerance		
	mod	02-Jul-12	1	1		0	21-May-09	3	1	-2.6	-2.9	1	-2	-0.7	0		0	15	1	0	0	0		0				0		0	1	1	1	actonel intolerance		
	mod	26-Feb-14	1	1	10-Jun-13	1	30-Jul-13	3	0	-2.3	-2.6	1	-2.8	-2	0		0	15	1	0	0	0		0				0		0	1	1	0	on actonel		
	low	09-Sep-14	5	1	12-Mar-14	1	23-Jun-14	5	0		-0.9	0		-2.4	0		1	8	1	0	0	0		0				0		0	0	0	0			
	low	14-Feb-12	5	1		0		5	1			0			0		1		1	0	0	0		0				0		0	0	0	1	stopped fosamax?		
	mod	03-Jan-13	1	1	20-May-14	1	04-Sep-14	3	0	.2	-2.6	1	-1.2	-2	1	30-Oct-08	0	25	1	0	0	0		0				0		0	1	0	1	actonel intolerance		
	mod	18-Jan-12	1	1	18-Jan-12	1	07-Jun-12	3	0	2.7	-2.9	1	-0.7	-1.1	1		0	8	1	0	0	0		0				0		0	1	1	0			
	mod	21-May-13	1	1	27-Oct-12	1	18-Apr-13	3	0	2.7	-2.9	1	-1.1	-2.4	1		0	10	1	0	0	0		0				0		0	1	0	1	bisphosphonate intolerance		
	low	07-May-14	5	1	25-Feb-14	1	21-Jul-14	5	0	-0.3	-0.1	0	-0.5	0.2	0		1	8	1	0	0	0		0				0		0	0	0	0			
	low	16-Apr-14	5	1	30-Apr-10	1	16-Apr-14	5	0	-0.1	-0.4	1	-0.1	-1	1	10-Aug-09	1	12	1	0	0	0		0				0		0	0	0	0			
	mod	28-Jul-14	1	1	24-May-11	0	08-Aug-11	3	1		-0.6	0		-1.6	0	20-Oct-08	0	8	1	0	0	0		0				0		0	1	0	0			

Fig. 2 Individual patient data for multiple osteoporosis measures.

NEXT STEPS – Although this pilot project is still in its infancy, the LFHT is aiming to eventually spread this program to the entire team. Due to the standardized tools built and resources used, we anticipate that this program can be replicated in other primary care settings.

REFERENCES – 1. Osteoporosis Canada – facts and statistics 2. Osteoporosis Canada – 2010 Clinical Practice Guidelines