
healthy
eating

A Quality Improvement Nutrition Program

The McGlinn Family Regional Cancer Center Experience

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The McGlinn Family Regional Cancer Center at Reading Hospital offers nutrition services on a subjective physician-referral basis through a billable service. Current guidelines from the American Society for Parenteral and Enteral Nutrition and the National Cancer Institute (NCI) recommend that all cancer patients be screened for nutritional risk.[1] One study of 1,453 cancer outpatients found that 32 percent of patients had a nutritional risk for poor outcomes.[2] Proactive nutrition screening and intervention are the cornerstones of success in managing cancer-related cachexia, malnutrition, and nutrition impact symptoms associated with cancer and its treatment.[3] Although oncology nutrition services are an integral part of any comprehensive cancer center, reimbursement by public and private payers has historically been problematic.[4]

Cancer patients who experience weight loss have more treatment breaks, require more and longer hospitalizations, and experience more severe side effects from their treatment. Patients who maintain their weight and nutritional status experience fewer breaks in their therapy and treatment.[4] Between 2000 and 2003, one study randomized 111 patients undergoing radiotherapy for colorectal cancer to dietary counseling, protein supplements, or ad libitum intake.[5] While both counseling and supplements improved outcomes during radiotherapy, only counseling resulted in sustained benefits three months later.[5] Registered dietitians (RDs) are highly educated nutrition experts who offer an incredible benefit to cancer patients and staff by providing timely information on symptom management, as well as resources for accurate evidence-based nutrition information.[4]

In 2012 the McGlinn Family Regional Cancer Center at Reading Hospital addressed these challenges in a quality improvement (QI) project that looked to 1) implement a screening tool to capture all oncology patients at risk for malnutrition and 2) reduce or eliminate financial barriers for patients needing nutrition services.

Screening & Assessment Tools

The terms screening and assessment are often used interchangeably. Nutrition screening by healthcare professionals is defined as the identification of cancer-related malnutrition and/or associated nutrition impact symptoms. Since cancer-related malnutrition is multifactorial, and because many of these factors may be manageable, especially when identified and treated early in the course of the disease, it is essential that nutrition issues be addressed at diagnosis and throughout the course of cancer care.[3] Nutrition screening initiates nutrition assessment, which is the first step of the nutrition care process and is defined as the:[3]

- Collection of timely and pertinent information
- Use of valid and reliable methods for data collection
- Comparison of gathered data to evidence-based standards, norms, and ideals.

Proactive nutrition screening and intervention are the cornerstones of success in managing cancer-related cachexia, malnutrition, and nutrition impact symptoms associated with cancer and its treatment.

Not all available nutrition screening tools are specific to the oncology population. For example, the Mini Nutritional Assessment (MNA) was developed as a quick and efficient tool that works well to screen for malnutrition in the elderly, but is not currently validated in the oncology population.[3] The Subjective Global Assessment (SGA) has been used in a number of patient populations and has been shown to have sensitivity and specificity over more traditional measures of nutrition assessment, although healthcare professionals often resist performing the nutrition-related physical examination. In addition, the list of nutritional impact symptoms specific to cancer is incomplete and does not include a triage component.[3]

In the mid 1990s, Dr. Faith Ottery adapted the SGA to meet

the needs of the oncology patient population. The resulting tool, the Patient-Generated Subjective Global Assessment (PG-SGA), involved patient interaction in the process.[3] The tool has been validated for use in the oncology population and has been found to correlate closely with quality of life.[3] The PG-SGA includes calculations of percent change in body weight and a nutrition-related physical exam, both of which may be time consuming to the clinical staff administering the screening tool. In order to be effective and to not merely add more responsibility to nursing and other medical staff, a screening tool must be easy-to-use and cost effective, must contain an action plan, and must be validated.[3] Therefore, individual cancer programs have been adapting and abridging the PG-SGA to facilitate its use.[3]

Our Process

Before this QI project, RD services were available by physician referral. Insured and uninsured patients face increased out-of-pocket expenses and co-payments, so they have less disposable income to pay for registered dietitian services, which are often not covered by payers in the absence of diabetes mellitus, chronic kidney disease, or obesity. To help all cancer patients at risk of malnutrition, hospital administration approved the cancer center's use of donated funds to cover a nutrition screening process for patients at risk of malnutrition.

Next, our oncology registered dietitian asked nursing staff how they could implement the PG-SGA and if barriers existed to implementing the tool. Feedback from nursing staff reported that the PG-SGA was too "cumbersome" and would take too long to administer and calculate the score, and then refer the patient to nutrition services. Taking this feedback into consideration, our oncology registered dietitian researched screening tools developed and implemented at other cancer centers and reached out to the Oncology Nutrition Dietetic Practice Group (ON DPG) of the American Academy of Nutrition and Dietetics for additional ideas and input. The result was a modified version of the PG-SGA. The M-SGA tool better met the needs of our patient population and staff members (see Figure 1, page at right).

Our oncology registered dietitian then met with radiation oncology staff to develop an implementation plan. In May 2012 radiation oncology started piloting the M-SGA tool and process. Next, our oncology registered dietitian met with supervisory staff of medical oncology to develop an implementation plan for medical oncology. In September 2012 medical oncology started piloting the M-SGA tool. The form is filled out:

- By all new cancer patients that will be undergoing treatment in the medical oncology or radiation oncology department
- At initial treatment by radiation oncology and medical oncology staff
- Once weekly during radiation oncology treatments on the day that the patient has their physician appointment
- Once monthly during treatment for medical oncology.

The form is completed multiple times during treatment to continue to monitor for nutrition-impact symptoms based on side effects that may occur at any time throughout treatment.

> Cancer patients who experience weight loss have more treatment breaks, require more and longer hospitalizations, and experience more severe side effects from their treatment.

Barriers & Challenges

During the pilot phase, our initial barrier was simply implementing a change in practice. Changes to our weekly workflow presented a new standard of care that took time to become habit. Currently, our M-SGA is a paper form. We found that radiation oncology nursing was electronically documenting the M-SGA score in its EMR in addition to using the paper form. Medical oncology was using the paper M-SGA form only due to unique EMR workflow. Duplication of referrals from medical oncology and radiation oncology is one aspect that will be eliminated when the entire cancer center begins using the same EMR in October 2013.

Currently, nutrition services receive duplicate forms for the same patient. Patients are filling out the same form more than once to prevent them from slipping by without nutrition screening. This process too will improve when medical oncology and radiation oncology begin using the same EMR. Right now, this duplication means more staff time spent administering the M-SGA and more time spent trying to schedule patients. This duplication will also be eliminated in October 2013 with the

(*continued on page 18*)

McGlinn Family Regional Cancer Center
Modified-Subjective Global Assessment (M-SGA)*

Patient Name: _____

Date of birth: _____ Date: _____ MRN: _____

Please complete all questions to the best of your knowledge in boxes 1 through 5.

1. Weight:

My current and recent weight:

I currently weigh about _____ pounds

I am about _____ feet _____ inches

One month ago I weighed about _____ pounds

Six months ago I weighed about _____ pounds

During the past two weeks my weight has:

Decreased (1) Not changed Increased (1)

2. Food Intake:

As compared to my usual intake, I would rate my food intake during the past month as:

☐ Unchanged
☐ More than usual
☐ Less than usual

I am now taking:

☐ Usual food but less than usual amount (1)
☐ Little solid foods (2)
☐ Only liquids (3)
☐ Very little of anything (4)
☐ Only tube feedings or only nutrition by vein (4)

3. Symptoms:

I have had the following problems that have kept me from eating my usual intake during the past two weeks (check all that apply):

☐ No problems eating
☐ No appetite (2)
☐ Nausea (1)
☐ Constipation (1)
☐ Mouth sores (2)
☐ Funny taste or no taste (1)
☐ Problems swallowing (2)
☐ Vomiting (2)
☐ Diarrhea (3)
☐ Dry mouth (1)
☐ Smells bother me
☐ Feel full quickly (1)
☐ Fatigue (1)

4. Supplementation:

I am using the following nutritional supplements during my cancer treatment (check all that apply):

☐ I drink more than 2 medical food supplements per day. (Example: Ensure®, Nutrashake®, Boost®, Glucerna®, etc.) (1)

☐ Vitamin/Mineral/Herbal supplements: Please list. (1)

_____

_____

_____

_____

5. Would it be okay if we refer you to the Registered Dietitian/Nutritionist based on your score? ☐ YES ☐ NO

Patient Signature: _____

Initial: _____ Follow-up: _____

Nutritional Triage Recommendations for office staff only:

Add scores from small numbers. 0-2: Low Nutrition Risk, Handout Class Flyer. ≥3: Deposit in Nutrition Folder

Total Score: _____ Cancer Diagnosis & Code: _____ Date: _____ Time: _____

Signature & Title: _____

*Modified from Dr. Faith Ottery's Scored Patient-Generated Subjective Global Assessment (PG-SGA).

adoption of one EMR. During the pilot phase, we made minor changes to the M-SGA form. Changes included:

- Adding the medical record number to the form
- Removing the statement "fill out nutrition referral form." This action did not need to take place if the M-SGA form is a 3 or higher. The M-SGA form score of 3 or higher acts as the form of communication to nutrition services.
- Adding the cancer diagnosis and code to the form
- Updating the form to include where clinical staff is to place the form once it is completed. The location is different for medical oncology and radiation oncology.

Finally, to eliminate some staff confusion, we updated our policies and procedures identifying patients that are included in the free screening program and fee-for-service patients. Our current policy can be found below.

Once the policy was updated, our oncology registered dietitian met with medical oncology nursing staff about the changes, received feedback from nursing after using the M-SGA tool for greater than six months, and responded to any staff questions. Our oncology registered dietitian then met with radiation oncology nursing staff and radiation therapists about policy changes, received feedback from using the M-SGA tool for greater than 10 months, and answered questions. This learning experience was beneficial for both the oncology registered dietitian and the staff that administers the M-SGA tool.

> By increasing the number of patients scheduled for nutrition appointments, our staff has been able to help patients better manage their nutrition-impact symptoms, which in turn will help decrease treatment breaks.

Our oncology registered dietitian has worked with the EMR builder to develop an electronic M-SGA for staff to use. The

UPDATED POLICY AND PROCEDURES FOR SCREENING PROGRAM

All patients at the McGlinn Family Regional Cancer Center that are currently receiving active treatment will undergo a nutrition screening process using the M-SGA at regularly scheduled intervals. Active treatment at the McGlinn Family Regional Cancer Center includes: chemotherapy, hormonal therapy, biotherapy, molecular targeted therapy, and/or radiation therapy that encompasses, but is not limited to: RapidArc, IMRT, IGRT, HDR, brachytherapy, SBRT, and SRS for a cancer diagnosis.

A. Patients that score according to the parameters on the M-SGA will have access to an RD, LDN.

- The M-SGA screening tool will be administered by nursing staff or medical assistant staff.
- The M-SGA is filled out by the staff, patient, or family member or individuals with power of attorney and administered by staff at regular intervals.
  - + The M-SGA will be administered at initial visit to all patients.
  - + The M-SGA will be administered once weekly for radiation therapy patients.
  - + The M-SGA will be administered once monthly for medical oncology patients.
- The M-SGA will be scored and appropriate intervention will be completed by staff.

M-SGA screening tool scoring system:

- M-SGA score of 0-2 = *At Low Nutrition Risk* = no RD, LDN intervention required. Continue to monitor.
- M-SGA score of 3 or more = *At Nutrition Risk* = refer to RD, LDN for comprehensive nutrition assessment.

B. An additional method for all patients at the McGlinn Family Regional Cancer Center that are currently receiving active treatment to have access to the RD, LDN is through a nutrition referral from their physician.

C. A patient may also be offered RD, LDN services through a fee-for-service pathway if a patient requests to see the RD, LDN without failing the M-SGA screening tool and without referral

electronic M-SGA tool will require the clinician to ask the patient the questions instead of the patient filling out the paper form; however, this process will eliminate the duplicate M-SGA forms filled out by radiation oncology and medical oncology. This next step allows us to continue to improve our care.

Metrics to Monitor Success

The metrics we use to monitor program success include brief discussions with staff members involved in the process and the data collection as shown in Tables 1-10 (pages 20-22). The administrative staff that collected the M-SGA form was responsible for the ongoing data collection and monitoring. After we made policy changes to the nutrition screening program and improved the workflow, we conducted clinical staff education in March 2013.

Our quality improvement effort was a success. The McGlinn Family Regional Cancer Center increased access to nutrition services by using the M-SGA screening tool to assess risk of malnutrition and by removing a cost barrier. These process improvements have allowed our nutrition services to reach a larger volume of patients than previously. By increasing the number of patients scheduled for nutrition appointments, our staff has been able to help patients better manage their nutrition impact symptoms, which in turn will hopefully help decrease treatment breaks. OI

References

1. Mueller C, Compher C, Ellen DM. ASPEN clinical guidelines: nutrition screening, assessment, and intervention in adults. *J Parenter and Enteral Nutr.* 2011;35(1):16-24.
2. Bozzetti F, Mariani L, Vullo SL, Amerio ML, et al. The nutritional risk in oncology: a study of 1,453 cancer outpatients. *Supportive Care in Cancer.* 2012; 20(8):1919-1928.
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from physician. The fee-for-service pathway may include insurance reimbursement or out-of-pocket expense.

D. Oncology Nutrition Therapy as evidence-based practice will be provided for all pertinent nutrition issues. Handouts and booklets will be utilized as appropriate.

E. Nutrition assessment, education, and interventions will be documented using the Academy of Nutrition and Dietetics' Nutrition Care Process and Standardized Language. Documentation will be available in the EMR and copies provided to the referring physician and other healthcare team members per patient request.

F. An appointment will be made available to the patient within one week of receiving the failed M-SGA screening tool score or referral.

G. Appointments will be scheduled as appropriate during treatment and will allow one follow-up appointment after active treatment is completed. At that time, nutrition services will transition to Outpatient Nutrition Services and will entail a fee-for-service pathway.

H. In addition, for a nominal fee, group session nutrition lectures conducted by an RD, LDN are available to McGlinn Family Regional Cancer Center patients and the community.

I. Patients may also be made aware of opportunities to participate in additional nutrition cancer-related group lectures, disease management educational opportunities, support groups, and other integrative medicine programs as provided by Reading Hospital.

Table 1. Data Collection, July 2012

Week of July	1	8	15	22	29	Total
Forms filled out	12	9	60	54	44	179
Nutrition score < 3	9	2	39	39	27	116
Nutrition score ≥ 3	3	7	20	15	17	62
"Yes" to dietitian	7	6	28	22	22	85
Nutrition appointments	0	0	0	0	2	2
"No" to dietitian	4	3	30	30	21	88
Physician referrals	0	0	0	0	5	5
"Yes" to dietitian < 3	5	1	9	14	11	40
"No" to dietitian ≥ 3	1	1	5	6	6	19
Possible appointments	2	6	15	9	11	43

Table 2. Data Collection, August 2012

Week of August	5	12	19	26	Total
Forms filled out	27	30	20	36	113
Nutrition score < 3	14	22	12	28	76
Nutrition score ≥ 3	13	8	8	8	37
"Yes" to dietitian	16	17	11	19	63
Nutrition appointments	2	3	1	4	10
"No" to dietitian	8	10	9	17	44
Physician referrals	9	7	5	4	25
"Yes" to dietitian < 3	8	10	7	16	41
"No" to dietitian ≥ 3	4	1	4	4	13
Possible appointments	9	7	4	4	24

Table 5. Data Collection, November 2012

Week of November	4	11	18	25	Total
Forms filled out	12	15	25	13	65
Nutrition score < 3	6	12	12	8	38
Nutrition score ≥ 3	6	3	13	5	27
"Yes" to dietitian	8	8	11	8	35
Nutrition appointments	4	0	4	3	11
"No" to dietitian	4	7	14	5	30
Physician referrals	5	1	5	3	14
"Yes" to dietitian < 3	3	7	6	5	21
"No" to dietitian ≥ 3	1	2	8	2	13
Possible appointments	5	1	5	3	14

Table 6. Data Collection, December 2012

Week of December	2	9	16	23	Total
Forms filled out	17	16	13	12	58
Nutrition score < 3	10	13	9	6	38
Nutrition score ≥ 3	7	3	4	6	20
"Yes" to dietitian	7	3	7	8	25
Nutrition appointments	3	2	0	1	6
"No" to dietitian	10	7	6	4	27
Physician referrals	3	3	3	3	12
"Yes" to dietitian < 3	4	9	5	4	22
"No" to dietitian ≥ 3	4	0	1	3	8
Possible appointments	3	3	3	3	12

Table 3. Data Collection, September 2012

Week of September:	2	9	16	23	Total
Forms filled out	24	20	21	18	83
Nutrition score < 3	14	14	14	14	56
Nutrition score ≥ 3	10	6	7	4	27
"Yes" to dietitian	11	10	6	11	38
Nutrition appointments	1	3	2	2	8
"No" to dietitian	13	10	15	7	45
Physician referrals	2	4	4	4	14
"Yes" to dietitian < 3	9	6	4	6	25
"No" to dietitian ≥ 3	8	2	5	0	15
Possible appointments	2	4	2	4	12

Table 4. Data Collection, October 2012

Week of October:	1	7	14	21	28	Total
Forms filled out	10	24	13	23	11	81
Nutrition score < 3	8	17	7	14	10	56
Nutrition score ≥ 3	2	7	6	9	1	25
"Yes" to dietitian	7	14	6	16	5	48
Nutrition appointments	2	6	3	6	1	18
"No" to dietitian	3	10	7	7	6	33
Physician referrals	2	6	5	6	1	20
"Yes" to dietitian < 3	5	8	1	10	4	28
"No" to dietitian ≥ 3	0	1	1	3	0	5
Possible appointments	2	6	5	6	1	20

Table 7. Data Collection, January 2013

Week of January:	30	6	13	20	27	Total
Forms filled out	17	32	26	15	29	119
Nutrition score < 3	12	21	16	7	22	78
Nutrition score ≥ 3	5	11	10	8	7	41
"Yes" to dietitian	9	20	13	8	14	64
Nutrition appointments	3	4	2	3	5	17
"No" to dietitian	8	12	13	7	11	51
Physician referrals	4	7	6	5	5	27
"Yes" to dietitian < 3	5	13	7	3	13	41
"No" to dietitian ≥ 3	1	4	4	3	2	14
Possible appointments	4	7	6	5	5	27

Table 8. Data Collection, February 2013

Week of February:	3	10	17	24	Total
Forms filled out	30	14	31	25	100
Nutrition score < 3	28	9	22	19	78
Nutrition score ≥ 3	2	5	9	6	22
"Yes" to dietitian	12	6	19	9	46
Nutrition appointments	1	4	5	1	11
"No" to dietitian	18	8	12	16	54
Physician referrals	2	4	7	2	15
"Yes" to dietitian < 3	10	2	12	7	31
"No" to dietitian ≥ 3	1	1	2	4	8
Possible appointments	1	4	7	2	14

Table 9. Data Collection, March 2013

Week of March:	3	10	17	24	Total
Forms filled out	53	39	27	38	157
Nutrition score < 3	32	27	24	31	114
Nutrition score ≥ 3	21	12	3	7	43
"Yes" to dietitian	27	17	8	22	74
Nutrition appointments	12	5	1	6	24
"No" to dietitian	26	22	19	16	83
Physician referrals	12	6	1	6	25
"Yes" to dietitian < 3	14	11	7	16	48
"No" to dietitian ≥ 3	8	6	2	1	17
Possible appointments	13	6	1	6	26

Table 10. Patients Seen, 2012

Month	Total
January 2012	11
Febuary 2012	8
March 2012	11
April 2012	11
May 2012	27
June 2012	27
July 2012	29
August 2012	37
September 2012	39
October 2012	63
November 2012	57
December 2012	67

Our quality improvement effort was a success. Using the M-SGA, the McGlinn Family Regional Cancer Center increased access to nutrition services by removing a cost barrier.