Optimizing the Nutrition Care Process

The Advocate Nutrition Care Model

Advocate Health Care

Inspiring medicine. Changing lives.
Nutrition Process Roadmap
for Clinical and EMR Approvals
to Improve Patient Outcomes

**STEP ONE:** Gaining Administrative Endorsement
(Principle 1 – Create Institutional Culture)*

**STEP TWO:** Changing the nutrition screening and
ONS intervention process (Principle 2 – Redefine
clinicians’ roles to include nutrition)*

**STEP THREE:** IT/EMR builds for screening
and ONS order (Principle 3 –
Communicate nutrition care plans)*

**STEP FOUR:** Designing the process for
delivery of ONS (Principle 4 –
Recognize and diagnose all patients at risk)*

**STEP FIVE:** Clinical approvals for product/
patient selection (Principle 5 – Rapidly
implement interventions and continued monitoring)*

**STEP SIX:** Discharge Education (Principle 6 –
Develop discharge nutrition care and
education plan)*


**Provide individualized nutrition care based on the individual’s needs and know that results will vary based on the care provided. This process is not intended as medical advice and does not replace good clinical judgement.
STEP ONE:
Gaining Administrative Endorsement (Principle 1 – Create Institutional Culture)

Advocate Health Care modeled the principles from Tappenden et al in order to improve their nutrition care process (Figure 1) (Tappenden et al JPEN J Parenter Enteral Nutr. 2013;37:482-497). To improve the nutrition care process, all hospital stakeholders, including clinicians and administrators, need to understand the problem of hospital malnutrition and the effect patient nutrition care may have on overall clinical outcomes. Clinicians and administrators often do not prioritize nutrition intervention in their institutions and the potential impact on cost and/or quality of care. To improve patient outcomes related to malnutrition, institutions need motivated nutrition champions at all levels of clinical care and administration.

In order to develop alignment on the need for changing the nutrition care process at Advocate, several steps were undertaken:

PREPLANNING:
- Advocate identified key decision makers: dietitians, Chief Nursing Officers (CNOs), Information Technology Clinical Excellence department (IT), physicians, and researchers

KEY ACTIONS:
- Aligned on facility/system’s goals/existing quality initiatives
- Educated key decision makers on how nutrition can help achieve identified goals and improve patient outcomes
- Introduced idea of integrating nutrition into existing nursing policy to formalize process of early identification and intervention
- Gained verbal commitment to enhance existing policy
- Assembled key decision makers in the same room together to discuss the policy to be enhanced, processes and next steps necessary to make it happen
<table>
<thead>
<tr>
<th>Principles to Transform the Hospital Environment</th>
<th>Principles to Guide Clinical Action</th>
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<tbody>
<tr>
<td>Create Institutional Culture</td>
<td>Recognize and Diagnose ALL Patients at Risk</td>
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<tr>
<td>View nutrition as a priority for improving quality of care and cost</td>
<td>Screen, assess, and diagnose ALL patients’ risk of malnutrition</td>
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<tr>
<td>Redefine Clinicians’ Roles to Include Nutrition</td>
<td>Rapidly Implement Interventions and Continue Monitoring</td>
</tr>
<tr>
<td>Empower all clinicians to address patients’ nutritional needs</td>
<td>Establish and enforce policy to intervene within 24 hours of at-risk assessment</td>
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<tr>
<td>Communicate Nutrition Care Plans</td>
<td>Develop Discharge Nutrition Care and Education Plan</td>
</tr>
<tr>
<td>Leverage EHR to standardize nutrition documentation</td>
<td>Incorporate nutrition counselling in the discharge plan</td>
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**Figure 1. The Principles for Advancing Patient Nutrition.**
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STEP TWO:
Changing the nutrition screening and ONS intervention process (Principle 2 – Redefine clinicians’ roles to include nutrition)

What was the standard screening process for nutrition before the Quality Improvement Project (QIP)?
1. Before the QIP was instituted, there were 5 questions that were not validated (Figure 2).
2. A positive answer for one or more would trigger an RD consult
3. Every day at 5AM a list of patients who triggered would be sent to the RD office
4. RDs would then need to see the patient in order to decide what type of intervention is needed

Figure 2. Non-validated tool used before Malnutrition Screening Tool (MST) implementation
**Malnutrition Screening Tool (MST)**

**STEP 1: Screen with the MST**

1. **Have you recently lost weight without trying?**
   - No: 0
   - Unsure: 2

2. **If yes, how much weight have you lost?**
   - 2-13 lb: 1
   - 14-23 lb: 2
   - 24-33 lb: 3
   - 34 lb or more: 4
   - Unsure: 2

Weight loss score: __________

3. **Have you been eating poorly because of a decreased appetite?**
   - No: 0
   - Yes: 1

Appetite score: __________

**STEP 2: Score to determine risk**

- **MST = 0 OR 1**
  - NOT AT RISK
  - Eating well with little or no weight loss

  If length of stay exceeds 7 days, then rescreen, repeating weekly as needed.

- **MST = 2 OR MORE**
  - AT RISK
  - Eating poorly and/or recent weight loss

  Rapidly implement nutrition interventions. Perform nutrition consult within 24-72 hrs, depending on risk.

**STEP 3: Intervene with MST = 0 OR 1**

- **NOT AT RISK**
  - Eating well with little or no weight loss

**Notes:**

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Ferguson, M et al. *Nursing* 1999 15:458-464

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**Figure 3. The Malnutrition Screening Tool (MST)**
How was it determined that this process was not working?
1. RDs were seeing many patients who were not at risk for malnutrition
2. Accuracy of RN screening was not high for malnourished patients who could benefit from ONS
3. ONS was not delivered in a timely manner; it could be up to 72 hours for a patient to receive ONS, and the patient could have been discharged prior to receiving ONS

How was support gained to institute a validated tool (MST)? (Figures 3 and 4).
1. Evidence was gathered by the lead RD to support the change

2. Tappenden et al was the framework for change and was presented to the Nutrition Council by the system lead RDs. Advocate has 2 committees that are responsible for changing nutrition policy and procedure – Nutrition Council and the Foodservice Council. Nutrition Council is made up of the Lead RD at each hospital in the system, the VP of Food and Nutrition, and the Chief Nurse Executive (CNE). The CNE is the executive sponsor of this committee. The Foodservice Council is made up of the Foodservice directors from each hospital. The lead RD for the Nutrition Council and serves as the chair of the group and represents hospital administration.

3. The decision to make a change was recommended by the Nutrition Council and the change was handed to the Foodservice Council.

4. At Advocate, every council has executive sponsorship such as a CNE or a CMO. For committees without executive representation, ideas for change should be presented by a lead RD to a VP of Nursing Education or Research in order to reach the executive level. C-Suite support is necessary for change to be made.

5. The process change was successful because of the relationships that were built with the education around the process change. There was a strong connection to an executive and to the corporate leadership team. With executive level support, IT changes can be prioritized. The non-validated nutrition screening tool was replaced by the MST in the Cerner electronic medical record. (Figures 3 and 4).

**Who was involved in making the change to the MST and making it happen?**
1. Lead RD
2. Nutrition Council and CNE
3. VP of Nursing Education and Evidence Based Practice
4. Food Service Council

**How does the committee/system handle ordering for ONS?**
• Specific ONS types are tied to the diet order and the MD writes the diet order for the patient upon admission (Figure 5). The diet order would trigger the correct supplement to be sent to the patient from the food service department as the meal trays were made up. ONS would be placed on the next meal tray that the patient would receive.
Who needs to be educated on this process change?

- Advocate has education for all process changes. Nursing staff, physicians, food and nutrition associates, and dietitians were educated on this process change. Administration was informed of the change, but they were not trained on it.

Did staffing increase to make these process changes?

- No. While the numbers of RDs changed throughout the process, the number of RDs did not ever increase.

How was the staff trained on new processes?

- Advocate has education for all process changes. The education is mainly accomplished via Computerized Behavioral Training or CBT. Video and slides are part of the CBT, and quizzes are also given at the conclusion of each module. Participants need to answer 80% or more of the questions correctly to “pass”. CBT modules are mandatory. Staff are also educated through weekly safety huddles, flyers, emails, and conference calls. In addition, the Advanced Practice Nurse Council and the Medical Executive Committee were also educated on the MST change and the role of the RD in the Nutrition care process. They received letters and flyers to announce the changes that were being made in the nutrition care process.
<table>
<thead>
<tr>
<th>DIET ORDERED</th>
<th>SUPPLEMENT TO BE GENERATED</th>
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<tbody>
<tr>
<td>Bariatric Stage 4 Diet</td>
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<tr>
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<td>Bariatric Pureed-Stage II Diet</td>
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<tr>
<td>Bariatric Full Liquid Diet</td>
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<td>Cardiac Diet</td>
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<td>Clear Liquid Diet</td>
<td>ENSURE CLEAR APPLE</td>
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<tr>
<td>Fat Low Diet</td>
<td>ENSURE CLEAR APPLE</td>
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<td>Fiber High Diet</td>
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<td>Full Liquid Diet</td>
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<td>High (2500-3000) Consistent Carbohydrate Control Diet</td>
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<td>Infant 6-11 Months Diet</td>
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<td>Oxalate Low Diet</td>
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<td>Sealed Meal</td>
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<td>Soft Diet</td>
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</tr>
<tr>
<td>Stress Test Meal</td>
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<tr>
<td>Tube Feeding</td>
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<tr>
<td>Tube Feeding + Food</td>
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<tr>
<td>Tyramine Low Diet</td>
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<tr>
<td>Honey Thickened Fluid Consistency</td>
<td>ENSURE PUDDING VANILLA</td>
</tr>
<tr>
<td>Nectar Thickened Fluid Consistency</td>
<td>ENSURE PUDDING VANILLA</td>
</tr>
<tr>
<td>Pudding Thickened Fluid Consistency</td>
<td>ENSURE PUDDING VANILLA</td>
</tr>
<tr>
<td>Tonsillectomy Diet</td>
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<tr>
<td>Vegetarian Diet</td>
<td>ENSURE - VANILLA COMPLETE 8oz</td>
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<td>Wired Jaw Blenderized Diet</td>
<td>ENSURE - VANILLA COMPLETE 8oz</td>
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<tr>
<td>Wired Jaw Full Liquid Diet</td>
<td>ENSURE - VANILLA COMPLETE 8oz</td>
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Figure 5. Diet order and corresponding Oral Nutrition Supplement (ONS).
How does new process get embedded into ongoing staff education and training?

- Advocate has identified this as a gap. To ensure compliance with MST, the executive sponsor of the Nutrition Council, who is also a Chief Nurse Executive of an Advocate community hospital, together with the Lead RD of the Nutrition Council, are working on incorporating information around the MST and patient nutrition in the onboarding RN Education.

Who trained nursing on nutrition and the screening process – and how did this happen?

- Videos and Computerized Behavioral Training (CBT) modules are key. These training programs give the staff reasons “WHY” something needs to be done. CBT is mandatory and must be completed by all staff. CBT also includes quizzes that must be completed with an 80% pass rate.

How are materials developed for staff and patients?

- Education at Advocate is developed by content experts, in this case, RDs, and also nurse champions and nursing research.
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STEP THREE:

IT/EMR builds for screening and ONS order (Principle 3 – Communicate nutrition care plans)

What is the IT process for change?

- Advocate has an IT Committee (CMIO, RNs, IT/Clinical Excellence) who reviews and prioritizes requests for changes in the Cerner electronic record system. There is a formal process for change at Advocate, like at all other hospital systems. There are quarterly changes and the number of changes that occur depend on the system priorities. Patient safety is a priority and also managing workload, meaning the amount of labor needed to make that particular change. After approval is gained to move forward, IT programmers can complete the task. Then staff will be educated about the process change. Here are the steps in more detail:

- Nutrition Council Lead RD submitted a request for CareConnection Upgrade / Incorporation of MST into EMR to the Clinical Informatics (CI) Department – the form is standardized and can be accessed online by all Advocate associates. The form is linked to a generic email address and a Sharepoint site monitored by the CI department. The CI council that consists of Clinical Informatics representatives from all Advocate Sites, a pharmacist, a physician, and a nursing practice representative are the council members. They meet on a weekly basis to discuss the requests received and priorities them based on:
  1) Number of people affected
  2) Finance requirements
  3) Is the request / change / addition requested tied to a System Key Result Area
  4) Is it tied to a business / strategic plan
  5) Does it affect patient safety

- When the requests have been prioritized by the council members, they are reviewed in a meeting by the corporate CareConnection Committee that takes place once per week. This committee consists of multiple teams that oversee different areas – in this case, an IT/Clinical Excellence RN was assigned to assist the Nutrition Council with the changes since she sits on the Nutrition Council EMR Team. During the meeting, the request gets categorized into small-high priority; large – low priority etc.

- The incorporation of the Malnutrition Screening Tool (MST) was identified as a high priority project – was included in the EMR update roadmap.
Also, Advocate has two enhancement cycles where major changes are announced and implemented and only HIGH priority changes/additions are included. Due to the impact that MST would have on nursing, physician, RD leadership, and research related needs, MST was incorporated in the 2014 fall enhancement upgrade and was accompanied by a Computerized Behavioral Training (CBT).

- The next step was the design of the MST screen (Figure 6) developed by the lead RD and IT/Clinical Excellence RN. It was then tested multiple times in a non-production domain. From the launch date, a week was given to fix issues without needing to submit a Change Control Document to request changes.

Who was involved in the decision on when change will be made and who approves?

- Departments who want to request changes must be prepared with evidence. They need to be able to educate IT/Clinical Excellence and need to gain executive support for the changes they want to make. At Advocate, the Nutrition Council and the Foodservice Council prepared evidence and gained support from their executive sponsors to take the nutrition screening and intervention change to IT/Clinical Excellence. With C-Suite and executive support, the changes can be prioritized to get completed.

Figure 6. Design of MST and area for physician diet order in Cerner.
Figure 7. MST - an integral part of admission evaluation by nursing.

Figure 8. Screen shots of ordering for ONS.
How was the ONS order generated in the EMR?

• The admitting RN completes the MST with each patient upon admission to the hospital. When the patient screens ≥ 2, an automatic order for ONS (based on physician diet order) is generated. The order for the appropriate supplement is delivered directly to the food service department. Patients receive the appropriate ONS on the next meal tray (lunch and dinner), prior to being seen by the RDs (Figures 8 and 9).

Figure 9. Drop down menu for diet order and ONS type.

How is the staff educated on EMR changes?

• Advocate has education for all process changes. The education is mainly accomplished via Computerized Behavioral Training or CBT. Video and slides are part of the CBT, and quizzes are also given at the conclusion of each module. Participants need to answer 80% or more of the questions correctly to “pass”. CBT modules are mandatory. Staff are also educated through weekly huddles and in-person presentations. For this process change, nursing, and the RD staff needed to be educated. To keep screening errors at a minimum, education refreshers are also necessary.

• Data collection and analysis is also important to keep staff motivated to perform their job. Reporting mistakes and successes to the nursing team is vital for keeping screening errors low.

What are the steps in rolling out the EMR changes?

• Lead RD and Nutrition Council gathers evidence
• Nutrition Council and Foodservice Councils gain support from their executive sponsors
• Executive Sponsors take the information to the C-Suite for approval and support
• C-Suite sits on the IT/Clinical Evidence Committee that is responsible for vetting requests and prioritizing
• Change gets prioritized
• Change gets implemented by the IT programmers
• Staff educated on the change
• Staff receives on-going education and motivation through reports
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STEP FOUR:
Designing the process for delivery of ONS (Principle 4 - Recognize and diagnose all patients at risk)

How does the nutrition screen risk flag to the foodservice department? How does this happen?

- The admitting RN completes the screening with the MST. If the patient screens ≥ 2, an automatic order for ONS (based on physician diet order) will be generated. The order for the appropriate supplement, as tied to the diet order, is sent directly to the foodservice department. Patients receive their first ONS on the next tray after admission and time to delivery is typically less than 24 hours.

Who needs to be educated on this process and how?

- Advocate has education for all process changes. The education is mainly accomplished via Computerized Behavioral Training or CBT. Video and slides are part of the CBT, and quizzes are also given at the conclusion of each module. Participants need to answer 80% or more of the questions correctly to “pass”. CBT modules are mandatory. Staff is also educated through weekly safety huddles, flyers, emails, and conference calls. For this process change, foodservice staff, nursing, and the RD staff needed to be educated.
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**STEP FIVE:**
Clinical approvals for product/patient selection (Principle 5 – Rapidly implement interventions and continued monitoring)

**Who was needed to make the decision on products and patients?**
- The Nutrition Council decides and generates all process change related to nutrition. The Lead RDs that sit on the Nutrition Council go to the Medical Executive Committee and the Pharmacy and Therapeutics Committee to gain agreement of the Nutrition product formulary. Supply Chain is also informed about any changes in products by the Lead RDs.

**What committees are involved?**
- Advocate has two committees that are responsible for changing nutrition policy and procedure – the Nutrition Council and the Foodservice Council. The Nutrition Council is made up of the Lead RD at each hospital in the system, the VP of Food and Nutrition, and the Chief Nurse Executive (CNE). The CNE is the executive sponsor of this committee. The Foodservice Council is made up of the Foodservice directors from each hospital.

**How was the approval granted?**
- Approval is granted by the Medical Executive Committee and the Pharmacy and Therapeutics Committee.

**How were ONS being delivered prior to the Quality Improvement Project (QIP) and what happened to change the process?**
- Before the QIP was instituted, there were 5 questions that were not validated that were used in the nutrition screening process (Figure 2).
- A positive answer for one or more would trigger an RD consult.
- Every day at 5AM a list of patients who triggered would be sent to the RD office.
• RDs would then need to see the patient in order to decide what type of intervention is needed. After the RD ordered the appropriate supplement for the patient, it would be delivered to the patient. This process would take between 24-72 hours. In some cases, patients may not have received ONS at all due to RD workload.

• The Nutrition Council took the lead in making the change to automatic ONS intervention. The Foodservice Council was responsible for instituting the changes that the Nutrition Council made. In these hospitals, the diet order (Figure 5) would trigger the correct ONS supplement for each tray. The foodservice worker responsible for that tray would place the appropriate supplement on the next meal tray.
STEP SIX:
Discharge Education (Principle 6 – Develop discharge nutrition care and education plan)

What people and departments need to collaborate for successful implementation of nutrition at discharge?

• Nursing, Food and Nutrition, IT/Clinical Excellence, administration, call center staff and nurses.

How does the discharge order for ONS get embedded into the EMR?

• At Advocate, the ONS discharge order was not implemented electronically. When patients were receiving ONS, RDs would make the decision to educate the patient to continue the ONS post-discharge.

Who is responsible for developing education materials and how are they housed?

• The lead RD was responsible for developing the discharge instructions specific to ONS consumption. The materials focused on good nutrition from food and ONS. Folders were assembled and contained the ONS coupons. Patients were educated about how to purchase the product they were consuming in the hospital and were also contacted about their ONS use post-discharge. On the call, patients were given the option of talking to an RD if they had further questions.

What do the materials look like? What was given to patients?

• Patients are discharged home with a discharge envelope in addition to standard of care discharge instructions and the following materials related to ONS and nutrition:

  1) ONS coupons

  2) Print out of the Malnutrition Supplement Education (customized and generated from CareConnection) (Figure 10).

  3) ONS Literature
Figure 10. Malnutrition supplement education.

What was the response on the post-discharge phone calls?

- Of the 206 responses from patients, 68% responded YES to the question about consuming their recommended ONS; 1.03 bottles was the average amount of ONS patients reported drinking; and 3% of pts asked to speak with an RN/RD (Figure 11).

<table>
<thead>
<tr>
<th>Patients Answered</th>
<th>206 (41%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consuming ONS</td>
<td>141 (68%)</td>
</tr>
<tr>
<td>Amount of ONS</td>
<td></td>
</tr>
<tr>
<td>1 Daily</td>
<td>68 (48%)</td>
</tr>
<tr>
<td>2 Daily</td>
<td>57 (40%)</td>
</tr>
<tr>
<td>3 Daily</td>
<td>9 (6%)</td>
</tr>
<tr>
<td>4 Daily</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>No Response</td>
<td>6 (4%)</td>
</tr>
</tbody>
</table>

Figure 11. Post discharge phone call results.
What were the four questions asked about ONS on the post-discharge calls?
1. Are you drinking your oral nutritional supplement? B) How many are you drinking daily?
2. Have you missed any days?
3. Have you stopped or plan on stopping your ONS?
4. Do you need to speak with a dietitian?
Notes

Next steps: ____________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

Who: _________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

What: ________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

By when: ______________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________
About Advocate Health Care

Advocate Health Care is the largest health system in Illinois and one of the largest health care providers in the Midwest. Advocate operates more than 250 sites of care and 12 hospitals, including five of the nation’s 100 Top Hospitals, the state’s largest integrated children’s network, five Level I trauma centers (the state’s highest designation in trauma care), three Level II trauma centers, one of the area’s largest home health and hospice companies and one of the region’s largest medical groups. Advocate Health Care trains more primary care physicians and residents at its four teaching hospitals than any other health system in the state. As a not-for-profit, mission-based health system affiliated with the Evangelical Lutheran Church in America and the United Church of Christ, Advocate contributed $783 million in charitable care and services to communities across Chicagoland and Central Illinois in 2014. Advocate Lutheran General and Advocate Good Shepherd implemented the process in this booklet. Descriptions of these two facilities are written below.

About Advocate Lutheran General Hospital

Advocate Lutheran General Hospital is the premier academic referral hospital for northwest Chicago and north Chicagoland. The 638-bed research hospital offers the most advanced care in its Level I trauma center (the highest level), Cardiovascular, Orthopedic, Advanced Surgery, Oncology and Neuroscience institutes. Lutheran General Hospital has been rated 16 times a 100 Top Hospital® by Truven Health Analytics and was the first hospital in the area to be awarded the American Nurses Credentialing Center’s prestigious Magnet designation. In addition, Lutheran General Hospital consistently achieves exemplary outcomes for surgical patient care by the American College of Surgeon’s National Surgical Quality Improvement Program. Located on the campus of Lutheran General Hospital is Advocate Children’s Hospital - Park Ridge, one of the 14 largest children’s hospitals in the country. Lutheran General Hospital is part of Advocate Health Care, based in Downers Grove, Illinois, which is the largest health care provider in the state and one of the nation’s top health care systems.
About Advocate Good Shepherd

With more than 700 physicians, Advocate Good Shepherd Hospital provides a comprehensive range of services at our 176-bed facility. Our nationally-recognized cancer program, renowned cardiac care, and an extensive range of outpatient services add to our health care program.

Good Shepherd Hospital offers many of the most advanced technologies available today, from robotic-assisted surgery to pinpoint precision diagnostic tools. We apply these leading edge practices in every area from breast care and heart health to cancer therapies. Good Shepherd is recognized with Magnet designation which is the gold standard by which nursing and patient care is measured. In the ICU, a state-of-the-art electronic surveillance system keeps a watchful eye on patients 24-hours per day and delivers instant communication between physicians and onsite caregivers.
Nutrition Process Roadmap
in Advocate Lutheran General Hospital and Advocate Good Shepherd Hospital

1. Intake and Screening Stage

Patient Admitted → Nurse Conducts MST Screening → MST ≥ 2

2. Automatic Ordering Stage

RD takes Patient off ONS

- Cancelled
- No

RD Consults on Patient’s ONS (derived from automatic order) → Change ONS

- Yes → Kitchen order placed for modification
- No

3. Follow up and Monitoring Compliance to Supplement

RD confirms ONS received & encourage patient to take ONS → Takes ONS?

- No → RD changes ONS and Encourages Compliance
- Yes

4. Discharge (In Hospital) & Post Discharge

Physician approves RD’s recommendation and care record is transferred → Discharge Nurse/Planner/RD delivers discharge education, and DC Plan → RN or RD gives Nutrition Discharge Information and ONS Coupons
Nurse Conducts MST Screening

ONS Product Identified by Diet Order

ONS Order Automatically generated in EMR

RN explains ONS and benefits of ONS to patient

Patient Receives ONS Twice a Day on a Meal Tray

Continues Current ONS

RD Explains to Patient Post Discharge Protocol

Patient receives weekly phone calls to confirm ONS usage for 4 weeks

Request RD/RN Call

Yes

RD/RN Alerted for in-person or over the phone consult

No

End