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APN Core Competencies: A Framework for Developing and Testing an APN Discharge Intervention

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Abstract

The purpose of this paper is to describe evidenced-based interventions as implemented by Advanced Practice Nurses (APN) conducting intervention research with a vulnerable population of blood and marrow transplant patients. In addition, each of the six core competencies of the APN role identified by Hamric are outlined and applied using a patient case study. These competencies are the following: direct clinical practice, expert coaching and advice, consultation, research skills, clinical and professional leadership, collaboration, and ethical decision-making.¹ This article chronicles a typical patient's journey through a post hospital discharge nursing research study involving APNs as "intervention nurses" and discusses the various aspects of the APN core competencies throughout the process.

Keywords

Advanced Practice Nurse; Transplant; Intervention research

Introduction/Purpose

Changes in the health care system have resulted in shifting a significant portion of care to the home environment where cancer patients and their care partners are responsible for care previously given by nurses in the acute care setting. The complexity of this shift is especially evident in the population of hematopoietic cell transplantation (HCT) patients who have life-threatening disease and treatment, and are acutely ill for weeks to months after hospital discharge. It is to this population that the advanced practice nurse can bring considerable knowledge and skill.

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With the growth in Advanced Practice Roles such as the Clinical Nurse Specialist and Nurse Practitioner titles there is more recognition and interest in the potential benefits that APNs may bring to the care of patients. Numerous studies have shown the value of using advanced practice nurses in the clinical setting yielding significant contributions and examples of outcome measures for APNs.² Cunningham (2004) listed many studies of diverse populations submitting undeniable recent evidence that APNs are effective in improving the outcomes such as patient satisfaction, readmissions, cost, health status, and complications.³ Mundinger and colleagues have done two studies with clear evidence that nurse practitioners have equal or better clinical outcomes in the primary care setting as compared to physicians.^{4, 5} Tujhuis and colleagues conducted a randomized controlled trial of a clinical nurse specialist intervention and found that clinical outcomes were comparable to inpatient and day teams.⁶ Burns, et al (2003) used four advanced practice nurses to manage, enhance protocol adherence and monitor a process of implementation for an institutional program to improve clinical and financial outcomes of mechanically ventilated patients.⁷ Gawlinski and colleagues (2001) discussed the role of the APN in affecting cardiovascular outcomes in a study comparing two groups of patients: one on a nurse-implemented diuretic protocol therapy and the other group on a nonprotocol diuretic therapy arm. The group with the nurse intervention had increased diuresis, a reduction in the time to reach hemodynamic goals and pulmonary artery catheter use, a decrease in electrolyte imbalances, and a reduction in the inpatients length of stay.⁸ Naylor and colleagues showed that comprehensive discharge planning by clinical nurse specialists improves outcomes after hospital discharge and cost savings.⁹ In a follow-up study and publication, Brooten and colleagues discussed the testing of a quality cost model of advanced practice nursing transitional care and found that in several studies APNs consistently improved patient outcomes and reduced health care costs across various patient populations.⁹⁻¹¹ The purpose of this article is to present an example of a typical patient participating in a nursing research intervention study as further evidence of the value of the role of the APN in the care of complex cancer patients.

Framework

Hamric's Model of Advanced Nursing Practice identifies several core competencies: direct clinical practice, expert coaching and advice, consultation, research skills, clinical and professional leadership, collaboration, and ethical decision-making.¹ This article chronicles a typical patient's journey while participating in a research study involving an APN intervention. The case study represents a compilation of patients participating in an ongoing IRB approved research study testing the effects of an APN intervention for patients discharged following allogeneic transplant.¹² The goal of this article is to describe how the APN core competencies are used to develop and implement the intervention arm of the research study.

The overall goal of the parent study is to improve outcomes for patients undergoing allogeneic transplant by testing a Standardized Nursing Intervention Protocol (SNIP) that integrates interdisciplinary patient teaching content.¹² The NCI-funded study involves testing an intervention provided by an APN and based on evidenced-based content regarding the patient's ability to 1) carry out the medical aspects of self care (e.g. Right atrial catheter care, medications), 2) monitor and respond to the occurrence of complications, 3) carry out a recommended exercise and nutrition program, and 4) adapt to post transplant status implementing a variety of resources depending on the problem or need identified.

This IRB approved study involves a population of consenting HCT patients, a high risk group of patients whose early hospital discharge patterns have increased the amount and complexity of care assumed by the patients and their care partners. Studies of physical, psychological, social and spiritual well-being in this population have shown how decreases

across these dimensions of QOL occur at the time of hospital discharge and may persist for months.^{13–17} Testing a program to support discharge teaching and rehabilitation in this population is critically needed. The outcomes of this program focus on improving QOL and decreasing morbidity.

APN intervention research is a relatively new area of research with cancer patients.^{18–22} The APN core competencies provided the framework for the current study. These are defined as follows:

1. “Expert coaching and guidance” is demonstrated by knowledge expertise, the ability to tailor evidence-based educational interventions based on individual patient and family needs, and the ability to use adult teaching principles.
2. “Consultation” is demonstrated by utilizing the specialties of other disciplines such as psychology, social work, physical therapy and medicine to enrich and design a comprehensive teaching intervention.
3. “Research Skills”: are demonstrated by the ability to be the “intervention nurse” in a research study. This involves knowing the aims and purpose of the study, being a part of the research team, helping to design the evidence-based intervention content, delivering the content and maintaining the patient relationship according to the goals of the study, and using evidence-based literature to impact the tailored intervention for the benefit of her patient.
4. “Clinical and professional leadership”: is demonstrated by interacting with medical center staff to implement the study, serving as an APN role model and providing feedback as needed.
5. “Collaboration”: is demonstrated by partnerships and utilization of other health care team members to impact care for the patient's benefit.
6. “Ethical Decision-Making skills”: is demonstrated by designing informed consent documents, identifying potential areas for ethical concerns concerning patient care during study implementation, and reporting patient concerns to administration.

Each of the core competencies represents essential features needed to carry out the teaching intervention.(See Table 1).

Case Study Continuation

Thomas Hill is excited to go home and glad to meet Mary, who he sees as a “coach” both he and his wife could use. Mary flexes her schedule to make the teaching session late enough in the day for Mrs. Hill to be there after work. Janice Hill plans to take 12 weeks of family leave to care for her husband and her mother is coming to help take care of the children. Mary explains the study, the content overview, gives them both literature and begins to answer the questions regarding discharge. She follows a script but stops to answer questions, tailors the information more specifically to Thomas and Janice and skips information that is not relevant to his case. She discusses information such as infection precautions, reportable symptoms, clinic follow-up days, how to manage oral intake, food precautions, medications and side effects, and a normal schedule at home the first week. She also coordinates the names of people they both still need to see such as the dietician, pharmacist, case manager, and physical therapist. All the content covered is given to them in a notebook for later review. Thomas and Janice do have some questions about disability paperwork. Mary is unable to immediately answer the specific questions. After the meeting she emails the social worker (sends a copy to the MD) for the Hills and asks her to follow-up with the disability questions before discharge.

This session highlights the “expert coaching and education” competency of the APN. Her expertise can become a lifeline for her patients. With her nursing perspective she offers the patient and family complex information specific to their needs involving not only medical aspects of care, but psychological, social and existential support. Spross (2005) clearly delineates that the competency includes the idea of a coach, being someone who establishes a relationship with a patient and family and assists them through a time of transition using technical, clinical and interpersonal competence.²³ Mary, aware of the research on educational tailoring principles, tailors the information to the patient and family.^{24–29} She also is keenly aware of adult learning principles and realizes that Thomas and Janice are motivated to learn about discharge, self-directed and open to the content, appreciate practical information, need to be active participants with appropriate time and feedback, and appreciate her style of informal and personal coaching to set an environment best conducive to their learning.³⁰

Case Study Continuation

Thomas goes home as scheduled and is amazed with his fatigue. Somehow he thinks that being in his own bed and eating food at home will restore him quickly. He is disappointed that he can barely do his right atrial catheter care, drink his 3 liters a day, eat 6 small meals, rest, and get in 2 short walks. He finds the kids exhausting and irritating. He and his wife get into an argument about his desire to drive to the pharmacy to pick up his medications. He feels guilty that his wife has to do so much, and struggles with guilt when he sees her taking out the trash cans for trash delivery, a chore he has always done. It is a reminder to him how debilitated he is.

Mary visits with them the first week after discharge in clinic before his MD appointment. She asks how things are going at home, and relays to him the common feelings that most transplant patients feel. She directly hits on the guilt, and irritability emphasizing the fatigue as a potential factor. She also discusses that men, in her experience, struggle with the need to feel useful and ask if he relates to this common feeling. He asks Mary about driving, and she observes the tension between him and his wife regarding this question. After some clarification of the issues, and she understands that for him not being able to drive the car is a symbol of his dependence. However, she advises that he not drive for at least a few weeks, and discusses other ways he can feel useful. He is relieved to discover that what he is feeling is normal.

She continues to cover new content about diet asking his wife about the food preparation issues specific to the home and offering suggestions that fit their food preferences. She reviews the reportable signs and symptoms, and covers more in depth content on infection and precautions. She also reviews any questions regarding the right atrial catheter care at home. Mary also attends the MD visit and discusses her findings regarding Thomas to the MD. She is concerned about the driving issue, and feels that the MD needs to be aware of his frustrations. The MD agrees with Mary and they both stress that Thomas' main job is to focus on “getting well”, and to let his wife drive for now. Thomas stays for a 3 hour infusion of magnesium which he knows is normal after transplant.

The competency to highlight at this stage is “clinical and professional leadership which according to Hanson and Spross (2005) involves roles such as advocate, change agent and group leader.³¹ Mary's presence and participation in tandem with the MD visit demonstrates her clear role as advocate for her patient. She is worried about a clear message being sent to the patient regarding his driving restrictions. She also is exercising a leadership role in partnership with the MD by being willing to confront the issue of safety. Attributes of nurse leaders are expert communications skills clear commitment to the patients about their issues,

and the willingness to collaborate with physicians colleagues.³² Often the APN will be a “change agent” merely by setting an example of collaboration with other health professionals, respecting their assessment and wishing to enrich the care of the patient by adding additional information.

Case Study Continuation

The second week home Thomas notices an itchy rash on his chest and back. He remembers Mary's instructions to call the MD for certain symptoms, and how to call off hours and on non-clinic days. The call is made by his wife, and both are able to come to the medical center quickly. He is placed on steroids to treat the graft-versus-host reaction and does not need to be admitted because the rash was caught quickly. He will return the next day again for evaluation with the MD.

The competency highlighted in this section is the research role. Mary is implementing the experimental condition in a research study testing the effectiveness of an APN “coach” for patient outcomes. She is aware of the content of the study, the aims, and her role. Her clinical excellence, knowledge of evidence-based research for transplant patients, and research acumen is the reason for her being hired for the position as intervention nurse in this study. Mary's role as a member of the research team included developing the content for the evidence-based nursing teaching intervention. She also provided training for a second intervention nurse, in order to maintain the content, approach and integrity of the teaching intervention.

The research role was often a limited role for the APN due to many factors, some being lack of support for the research role, and lack of time due to pressing job duties such as education and clinical care. However in recent years this competency has become more essential with an increased interest in evidence-based literature and practice. DePalma and McQuire (2005) discuss 3 sub competencies to the research role: interpretation and use of research in practice, evaluation of practice and participation in collaborative research.³³ It is clear in this case study that Mary is impacting the patient's outcomes: such as complications, hospitalizations, and health care behaviors through her research role as an intervention nurse. The method used for program development, and administration parallels that tested by McCorkle and colleagues, who have completed research on Standardized Nursing Intervention Program (SNIP).^{18–22} Their research has demonstrated positive outcomes including decreased symptom distress, improved functional status and mental health, decreased caregiver burden, and longer survival.^{18–22} Their recent studies have focused on post surgical patients, and demonstrated the need to focus on the period of transition from the hospital to the home setting.

Case Study Continuation

The next day Thomas comes in and his rash is better. He is relieved that he does not need to be readmitted. He knows that Mary said readmissions were common, but he feels that he is going to be the exception. The next night he begins to ache all over and spikes a fever of 102. He remembers that Mary educated both he and his wife that antibiotics need to be started within 1–2 hours after a fever spike and so they quickly get in the car and call the medical center while in transit. He is readmitted and is found to have gram positive bacteremia, with the probable source being the right atrial catheter. He feels awful. After 3 days, more than one organism is identified. His right atrial catheter is removed, and the IV infusions continue for a full week for polymicrobial sepsis. The MD elects to place a PICC line in the antecubital area instead of another right atrial catheter. His white count has fluctuated some, going from 4.0 to 2.5 and his platelets have also dropped from 110K to

80K. The MD tells him the fluctuations with a new marrow are normal, and indeed his WBC and platelets rise after a week of IV therapy.

While he is an inpatient, Mary teaches him the next session which oddly enough focuses on graft-versus-host (GVH) reaction (sometimes called graft-versus-host disease), and fatigue. He learns that GVH does not mean that his immune system is failing, a worry that he had. He kept hearing the word “disease” after graft-versus-host and thought that he had another big problem. He understands that it is a common reaction, and oddly enough “a little bit of it is a good thing” since patients with GVH have less relapse. Mary also teaches him about fatigue, how to conserve his energy and how to restore his energy. He has never had to think about what restores his energy; he has always had more than enough to keep going and a reserve to meet all deadlines for his construction job. He finds this concept hard to grasp and a bit humbling.

He returns home now a bit more knowledgeable regarding the mountain of recovery before him. When Mary said that his “job” this next year after his transplant was to focus on getting well, he now understands a bit better that this will be a longer recovery than what he expected. Two weeks pass at home with bi-weekly visits to the transplant clinic. All counts are good. Eating remains a chore, he struggles with drinking fluids, and the amount of pills he has to take each day totals to about 25. He sees his wife get more and more fatigued and short-tempered with the kids. Even though she has her mother in town to help, he sees her worry and continues to struggle with his feelings of inadequacy that he can not help more. He begins to feel hopeless, and wonders if he will really ever return to who he was before transplant. He knows of one patient that died recently, and he begins to fear death. He finds it hard to sleep and withdraws from his wife and the kids trying to sort out his feelings.

Mary goes to the house for Session 4 and meets all the kids and the family. It feels good for Thomas to have her come to his house. Mary talks with each of the kids and Janice's mother about how things are going. After a few minutes the kids go out to play in the backyard leaving Thomas and his wife alone with Mary. Mary begins to talk about common psychological responses after transplant such as depression and anxiety. She also begins to assess the family for role shifting and asks Janice how the communication between them has been. Janice begins to cry and relates how Thomas has been so distant. Mary assesses him for depression, and teaches both of them that depression does occur after transplant in approximately 25% of patients. A short course of antidepressants is also not unusual. Mary continues to talk about common emotional responses. Thomas realizes that in his isolation from people, he thought what he was going through was unique. It helps just to know that he is not unusual. Mary refers him and his wife for a social work follow-up in the next few days and sends an email to his MD alerting him of the depression.

Thomas and his wife meet with the social worker and find the session very helpful. They schedule several follow-up sessions with the social worker in the next few weeks. His physician orders anti-depressants, and reassures Thomas and his wife that depression is common. Both he and his wife feel that they were given a comprehensive, team-focused intervention for his depression. His counts continue to be good. He continues to struggle with the fatigue and still at times thinks about recurrence. He wants to hide his children from the reality of his situation and talks with Janice about sending them to his sister's house for a few months. He feels so useless and doesn't want the kids to see him struggle.

There is a great deal of literature that examines the collaborative practice of both NPs and CNSs.^{10, 34–38} Mary collaborates with other health care professionals encouraging a transdisciplinary approach in which all team members equally assist the patient and family with their expertise to enhance patient care. The ability of an APN to value other disciplines

presents a “win-win” solution for all involved and enhances communication and decreases territorialism. Hanson & Spross (2005) make it clear that collaboration works to effect patients and other provider outcomes.³⁹ Collaboration creates a positive culture if it is clearly defined, and across disciplines.¹⁰ In this case Mary's collaboration with the physician and social worker greatly enhances Thomas' psychological quality of life. His physician, aware of the depression, places him on antidepressants and the social worker steps in to offer more social support.

Case Study Continuation

Before Mary meets Thomas in clinic for Session 5 she is stopped by one of the clinic nurses who has noticed Thomas's 8-year old girl, Susan crying. She asks Mary about information to give families to help children cope because the staff nurse feels ill-prepared to deal with school-age children's emotional needs. Mary is able to give her information from various agencies that offer booklets for children to read and process with their parents about having a parent go through cancer treatment.

Mary meets Thomas in clinic for Session 5. This session covers the social aspects of his life. She talks about caregiver strain and the need for Janice to really take care of herself. She acknowledges how difficult the caregiving can be: the emotional strain, the tasks, the unpredictable days, etc. Janice really connects and appreciates the time to focus on her. Mary talks about sexuality and what can be expected at this time. He is hesitant to try sexual activity but also feels assured to know that “all can be in working order”. He understands that if there are problems it is best to address issues of impotence as soon as possible. Mary begins to discuss reintegration into the work environment, and legislation that protects him from discrimination. Mary goes on to discuss the communication with the kids and urges the couple to keep the children close, stating that research indicates that inclusion in the family's challenges is actually healthier for their coping. She mentions the role of the Child Life Specialist who can meet with the kids and help them sort out their feelings. She mentions that she will talk with the Child Life Specialist herself to see if she can learn strategies to help the children. Thomas and Janice discuss the issues with the kids and the adjustments that their middle child, Susan has had to Thomas's illness. They decide to call the Child Life Specialist to meet their children.

The role to highlight here is the role of consultation in which the APN becomes the consultant to a population, in this example, the staff nurse. Mary's expertise impacts not only the patient, but other nurses as she models and mentors professional behavior. Caplan was really the first to solidify mental health consultation theory and identified for types of consultation: client-centered, consultee-centered case consultation, program centered administrative consultation, and consultee-centered administrative consultation.⁴⁰ The clinic staff nurse is using the consultee-centered case consultation in which Mary would emphasize education for the staff nurse to increase her ability to handle the emotional needs of children of transplant patients. Mary is seen by staff as approachable, respectful and helpful which increases her likelihood of APN-staff nurse consultation and improving complex patient care issues.⁴¹

The goal of clinical consultation is to enhance the patients care and/or improve skills and confidence of the consultee.⁴¹ Swartz and colleagues (2003) in their article “A Day in the Lives of APNs in the U.S.” found that APNs obtained a physician consult for 15% of the patients, 8% of patients were referred to specialist providers, and 3.5% were referred to another primary care provider.⁴² Another report discusses the use of a “practice team” involving APN consultation from a cardiologist for chronic heart failure.⁴³ The team of several specialists improves outcomes for end-stage heart failure patients. Literature is clear

the APN-directed programs for patients are beneficial, and use of consultation by APNs helpful.^{44, 45} Mary's consultation and referral with the Child Life Specialist will give Mary tools to advise patients of techniques and coping strategies that may benefit the children, and refer him to a specialist.

Case Study Continuation

Within a few weeks, Thomas begins to notice that he is getting stronger, his taste buds are back, his energy is beginning to reinfuse, and he feels more like himself. He and Janice were able to be intimate, and he realizes how touch-deprived he has been. He finds his mind wandering to the things in life he has learned to appreciate, such as his family and close friends. He also begins to think about whether or not he wants to return to his previous job, or look for a new career. These thoughts take him by surprise; he has always been “steady” and not very introspective.

At 3 months after the stem cell transplant Mary comes to the house to have the last face-to-face session before starting the monthly phone calls. This session deals with re-integrating back into life. The mask precautions and food restrictions are lifted and Thomas has an intense craving for a hamburger with lots of lettuce and tomato. Mary talks about post-traumatic growth and the literature that indicates that some people are able to grow, deepen and see gifts from the transplant experience that are unexpected. She mentions new jobs, new ways of relating to people, new values, a closer desire for spiritual activities and connection to God. She discusses quite clearly that moving on after transplant can really touch on some existential issues. As usual, Mary seems to be one step ahead of him. She refers him to some literature and opens the door for him and his wife to discuss new values that might have formed out of this intense family experience. She also discusses the screening and preventative practices for transplant patients and teaches him and his wife follow-up health care practices that Thomas should coordinate for himself after transplant.

Addendum

After Session six, Mary continues to telephone Thomas and his family monthly. Thomas relapses at 9 months. Mary was present and helped him and his family make tough decisions such as developing an Advanced Directives, addressing end-of-life concerns, writing letters to the kids on special occasions, making a video tape for closure for the family, and setting up funeral arrangements. After Thomas died, Mary attends the funeral and does bereavement follow-up with his family. Janice and the children do not experience complicated grief, and with the help of a great deal social support are able to carve out a healthy life after his death. Janice meets with Mary yearly for lunch for connection and to help with the closure.

Mary becomes a “moral agent”. In this role, often the APN carries the knowledge of the wishes and hopes of the patients and families going through a traumatic event. The investment of time and the caring relationship puts her in a position of “holding” the families existential hopes. She, perhaps, more than other health care professionals is able to stand with the patient and encourage the communication of wishes across disciplines. Ethics education is essential in APN programs because APNs can be strategically considered “moral agents” in the health care environment with the compilation of skills they bring to the clinical setting.^{46–48} There are various phases of development for ethical decision making for the advanced practice nurse: “knowledge of development”, moral sensitivity, “knowledge application,” moral action and creating an ethical environment.⁴⁹ There were no ethical dilemmas with this case, however ethics also involves adherence to the therapeutic contract or relationship Mary had with the family. By assessing the family for complicated grief at Thomas' death, and assisting the family with their grief through bereavement follow-

up, Mary created an ethical environment by following the principles of beneficence (the duty to do good and prevent harm), and fidelity (the duty to honor commitments).

Summary

Patients undergoing allogeneic HCT are at high risk for multiple complications post discharge, and are prime candidates for care and follow-up by the APN. This article discusses the six core competencies outlined by Hamric, Spross and Hanson (2005) and applies them directly to the APN who is in a research intervention role with a vulnerable population.⁵⁰ The APN, Mary, actually uses multiple core competencies concurrently throughout her intervention with this patient and family. However, for the sake of outlining the competencies clearly throughout the article only one competency was highlighted at a time.

Box 1: Case Study

Thomas Hill is a 45 year old man with a diagnosis of Acute Leukemia. He was diagnosed one year ago and received standard induction treatment, followed by consolidation therapy. His remission after therapy lasted six months. He achieved his second remission after further chemotherapy, and now is scheduled to undergo an allogeneic transplant. His brother, Sam is a complete match. His physician says the transplant is the only hope for cure.

Tom is married to Janice. They have been married 15 years, and have three children: James who is 10, Susan who is 8, and Kevin who is 5. Tom works in the field of construction for a local construction company. His wife Janice works as a preschool teacher. Tom and Janice have a good relationship and both feel that this decision is the best hope for a future together as a family.

Tom receives the preparative conditioning regimen over several days, and receives both chemotherapy and radiation. After completion of conditioning, his brother's stem cells are infused. After 2 weeks of mouth sores, nausea, diarrhea, and fevers his brother's white cells engraft and he begins to feel better. He drinks, eats a little, has no fevers, and begins to take his medications orally. The plan is to send him home in 3 days. Total time in the hospital is 28 days.

The patient is approached by the accrual nurse who educates him about a current nursing discharge teaching study available for eligible transplant patients. If he elects to consent he would get standard care plus a six-session standardized nursing educational program followed with phone follow-up. He thinks this might be a good idea for his family and so he does the baseline forms, and signs the consent. The intervention nurse, Mary who is a Clinical Nurse Specialist calls him within 2 hours and sets up an appointment for his first teaching session the next day.

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Biographies

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Table 1**Competencies and Behaviors**

1. Expert coaching and guidance	<ul style="list-style-type: none"> • Tailors the education • Uses adult learning principles • Expert in clinical content
2. Consultation	<ul style="list-style-type: none"> • Working with the nursing staff for educational needs in the clinic • Case discussion with Child Life Specialist for skill enhancement
3. Research Skills	<ul style="list-style-type: none"> • Preparation of evidence-based teaching program • Use of evidence-based literature interpretation for clinical practice • Participation in collaborative research • Research role as an intervention nurse
4. Clinical and professional leadership	<ul style="list-style-type: none"> • Advocate for the patient, • Change agent by collaboration example • Group leader as coordinator of services • Expert communications skills in meeting with the MD • Clear commitment to the patient and family and their issues
5. Collaboration	<ul style="list-style-type: none"> • Positive culture of partnership with the physician and social worker which impacts the MD treatment for depression and the social work support of the patient and family
6. Ethical Decision-Making skills	<ul style="list-style-type: none"> • Moral agent: creating an ethical environment following principles of beneficence and fidelity • Adherence to the therapeutic contract or relationship Mary had with the family