STROKE EDUCATION PACKET:

THE INPATIENT ENVIRONMENT

by

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DEDICATION

I dedicate this project to my husband Rodney Dale Brandt and my three boys Cody, Zachary, and Joseph Brandt along with my parents Robert and Joyce Nixon. Thank you for your support and encouragement.

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ABSTRACT

Stroke is a disease process that affects more than 700,000 people per year. Many of those individuals enter the acute care setting with questions and concerns regarding the causes of stroke and implications of a stroke diagnosis. To answer those questions, national guidelines regarding stroke education have been created to help nurses present information to stroke patients and their families. In one acute care facility, there was a lack of an educational packet for nurses to use to teach this vital information. The purpose of this clinical project was to create an evidence-based stroke education packet for nurses at this facility to use to teach stroke patients and their families. Evidence was compiled from the literature, evidence-based guidelines, and multiple stroke-education packets, brochures, and patient education materials used by nurses at other health care facilities. The packet was created and presented to the institution as a usable tool to facilitate the delivery and documentation of stroke education to patients and their families.

CHAPTER ONE

INTRODUCTION

Cerebrovascular accident, otherwise known as stroke, is defined as a "focal neurologic disorder developing suddenly because of a pathophysiologic process in cerebral blood vessels" (Brashers, 2006, p. 267). The pathophysiology of a stroke determines whether it is categorized as ischemic or hemorrhagic. Ischemic stroke, accounting for 88% of strokes, results from a lack of blood flow to the brain due to a cerebral thrombosis or an embolism. A subcategory of ischemic stroke includes a transient ischemic attack (TIA). Transient ischemic attacks "probably represent thrombotic particles causing an intermittent blockage of circulation or spasm" (McCance & Huether, 2006, p. 565). A TIA differs from an ischemic stroke in that a TIA is a brief episode of clinical symptoms lasting less than an hour with no other evidence of infarction (Albers et al., 2002). Hemorrhagic stroke, accounting for 12% of all strokes, is the result of bleeding within the brain (intracerebral hemorrhage) or within the subarachnoid space (subarachnoid hemorrhage) (McCance & Huether, 2006).

The statistics on stroke in the United States (U.S.) are alarming. The following data compiled by Lloyd-Jones et al. (2009) demonstrate the prevalence and cost of medical care for the stroke patient in the U.S.:

- An estimated 6,400,000 Americans $\geq$ 20 years of age have had a stroke
- Each year approximately 795,000 people experience a new or recurrent stroke
- On average, every 40 seconds, someone in the United States has a stroke.

- On average, every 4 minutes, someone dies of a stroke.
- The estimated incidence of transient ischemic attack (TIA) in the U.S. is approximately 200, 000 to 500,000 per year.
- The estimate for direct and indirect cost of stroke for 2010 is $73.7 billion (pp. e54-e64).

These staggering statistics motivate health care professionals to not only recognize stroke as a significant disease process but also to respond with evidence-based care for stroke patients and their families.

Evidence-based care requires patients to be active participants in their own health care. Engaging patients to participate and take responsibility for their care is often challenging. Education is one vehicle to empower hospitalized stroke patients and their families in taking responsibility for health care decisions and lifestyle changes. When patients are discharged from the hospital, the education a nurse offers encourages self-care, decreases hospital readmissions, and assists patients to detect problems earlier which subsequently increases the opportunity for better outcomes (Paul, 2008).

A second challenge for health care professionals is to comply with evidence-based guidelines concerning stroke developed by regulatory agencies. Barriers to evidence-based practice exist at two levels: the point of care and at the organizational level. DiCenso, Guyatt, and Ciliska (2005) described barriers at the point of care as nurses lacking time, skill and resources to gather evidence-based guidelines. At the organizational level, providing evidence-based care can be a challenge due to the lack of interest, fiscal resources, and leadership (Parahoo, 2000).

Health care professionals must analyze the barriers to providing evidence-based care as a first step in providing quality care for the stroke patient. Professionals at one acute health care facility in Montana took this first step to determine how best to provide evidence-based care to the stroke patient. During this barrier assessment, information was gathered to determine evidence-based care guidelines and how effectively these guidelines were followed. From reported data, it was evident that nurses were not educating the stroke patient according to established evidence-based guidelines. Further examination revealed that an educational packet did not exist that could assist nurses in educating the stroke patient regarding the disease process. Regulatory guidelines require written instructions or other documentation of education material be given to the stroke patient or family. Nurses using an educational packet containing written instructions would accomplish seven main tasks:

1. Teach essential components of stroke information to comply with evidence-based guidelines.
2. Guide discussions so that verbal instructions would be consistent with written instructions.
3. Present educational material that represented evidence-based guidelines in design characteristics such as content, readability, layout and presentation.
4. Document teaching according to institutional policies that subsequently meet regulatory guidelines.
5. Allow patients a point of reference as they begin the rehabilitation process. This leads to personal responsibility in self-care.

6. Include preventative health information that may lead to early recognition of a stroke or prevent future disability.
7. Demonstrate that evidence-based care is given, quality measures attained, and regulatory guidelines are met.

Background

Leading experts at national agencies have agreed upon a common method to evaluate stroke care in the acute care setting. The American Heart Association (AHA) and the American Stroke Association (ASA) have responded to the national problem of stroke by creating a performance improvement program that guides the health care professional in providing evidence-based care. The Stroke Fact Sheet lists agreed upon quality measures for the stroke patient (American Heart Association[AHA], 2009). The fact sheet delineates key areas in the care of the stroke patient that assure that health care personnel are meeting the standard of care. Nationally agreed upon evidence-based measures for the stroke patient included the receipt of the following:

1. deep venous thrombosis prophylaxis;
2. antithrombotic therapy at discharge;
3. anticoagulation therapy for atrial fibrillation;
4. tissue plasminogen activator (among eligible patients);
5. antithrombotic therapy within 48 hours of admission or by the end of the second hospital day;
6. lipid level testing;
7. dysphagia screening;

8. stroke education;

9. smoking cessation counseling; and,

10. assessment for rehabilitation services (George et al., 2009).

When guidelines that incorporate evidence-based measures are implemented in the acute care setting, nurses demonstrate compliance with the standard of care for stroke patients.

At the national level, two agencies have combined their efforts to address stroke and its effect on the public's health. Leading experts at the U. S. Department of Health and Human Services (USDHHS) along with the Centers for Medicare and Medicaid Services (CMS) worked together to create The Hospital Quality Initiative in 2001. The key tenets of the initiative were reporting, improving care, and reimbursement (Brenner & Salathiel, 2009). The Hospital Quality Initiative included a reimbursement penalty designed to encourage reporting of outcomes data concerning quality measures. When health care professionals reported outcome data, employees at CMS did not reduce reimbursement.

Health care professionals knew what data to report by reviewing the National Hospital Quality Measures collaborative publication from the CMS and the Joint Commission. This publication was a result of the Hospital Quality Initiative of 2001 and was based upon the written guidelines from AHA and the ASA. The National Hospital Quality Measures publication included descriptors and definitions regarding stroke quality measures. Hospital staff followed established, disease specific guidelines through a self-reporting process to improve patient care and to maximize reimbursement (Brenner & Salathiel, 2009).

Health care professionals in hospitals across the country worked to meet these measures in the area of stroke care. To evaluate progress, hospital staffs voluntarily submitted data to agencies that tracked the progress of an individual hospital. One such agency was the Affiliated Computer Services Healthcare Solutions (ACS Healthcare Solutions) which created the Medical Information Data Acquisition System (MIDAS+). MIDAS+ was a database that aided hospitals in tracking compliance to quality measures by collating and managing data so that hospitals were eligible to become certified in disease specific care (MIDAS+ JRepository, 2010). As hospital staff submitted data, professionals at ACS Health Care Solutions tracked percentage of compliance to established guidelines using MIDAS+. In the area of stroke care, MIDAS+ used excerpts from the Specifications Manual for National Hospital Quality Measures in combination with the "Get With the Guidelines – Stroke" program to monitor if hospital employees were meeting evidenced-based guidelines in their delivery of care to stroke patients. Analysts using MIDAS+ tracked this compliance and offered feedback to hospital staff so that care could continually be improved.

CMS auditors assured transparencies in this self-report by performing unannounced chart reviews. If an auditor determined that submitted data did not represent reviewed data, the institution was fined by a decrease in the percentage of reimbursement from Medicare (S. Swanson, personal communication, April 6, 2010).

In Montana, state health care professionals responded to the problem of stroke in many ways. Staff at Montana's Department of Public Health & Human Services (MTDPHHS) created The Montana Cardiovascular Health Program. Program developers conducted activities including heart attack and stroke surveillance, disease prevention,

and public education (MTDPHHS, 2006). Health care professionals at MTDPHHS provided educational materials for institutions to use including Power Point presentations, brochures, posters, resource guides, and refrigerator magnets.

At the community level, staff at one Montana hospital facility voluntarily reported data concerning stroke care to ACS Healthcare Solutions from monthly chart reviews. Of the 10 evidence-based measures listed by George et al. (2009), one measure was determined to have a significant gap in compliance. Stroke education provided by nursing staff to stroke patients and their families scored less than 10% compliance (S. Swanson, personal communication, April 6, 2010). Upon investigation, several potential issues were identified that contributed to the poor compliance on stroke education. The primary reason for this poor compliance was thought to be the lack of a usable educational packet for nursing staff to use when teaching patients about stroke.

Significance

It is important to address stroke at the national, state, community, and institutional level. At the national level, in 2006, stroke contributed to 1 in every 18 deaths (AHA, 2010). Leading experts created national guidelines regarding stroke education so that all stroke patients can expect a certain level of evidence-based care. These national guidelines provided direction for institutions to follow so that health care professionals can give high-quality care. Health care professionals using patient education materials meant to meet national guidelines must consider the health literacy of their audience.

When patients receive health care education, they have the foundation to make healthy lifestyle choices.

At the state level, employees at the MTDPHHS instituted the Montana Heart Disease and Stroke State Plan to address the burden of stroke. State employees implementing the plan had many responsibilities. A few of the responsibilities included using population-based public health strategies to increase public awareness, supporting health care associations to assure quality of care and providing training and technical assistance to assist the health care professionals (MTDPHHS, 2010). State employees created the Montana Stroke Initiative as a state performance improvement program for stroke care to assist with these responsibilities. Surveillance information in Montana indicated that stroke was the fourth leading cause of death in Montana totaling 521 deaths in 2005 (MTDPHHS, 2007).

Professionals at MTDPHHS provided patient education materials to assist hospital staff in educating the public regarding the signs and symptoms of stroke, risk factors, resources and emergency services. The ability of Montana residents to understand these educational resources depended upon their literacy level. Reading skills of the target population were taken into consideration when preparing the educational materials (Badarudeen & Sabharwal, 2009) as were demographic characteristics that contribute to low health literacy skills (Kutner, Greenberg, Yin, & Paulsen, 2006). According to the U. S. Department of Education, demographic characteristics that contributed to low health literacy included ages of 65 or older, lack of high school education, living below the poverty level and no private health insurance (Kutner, Greenberg, Yin & Paulsen, 2006).

In the county of this clinical project the percentage of adults aged 65 and older was 13.4% (U.S. Census Bureau, 2009) and 12.6% of the county residents 25 and older never completed high school (Research and Analysis Bureau & Census and Economic Information Center, 2009). Senior research analysts from the Census and Economic Information Center calculated that 4% of those 65 and older lived below the poverty level based upon the 2006-2008 American Community Survey (S. Ockert, personal communication, May 15, 2010). The majority of adults 65 and older were expected to have Medicare, Medicaid or no insurance. A combination of these descriptors indicated that there might be low health literacy among the adult target population.

In the small urban county of this clinical project, stroke affected the community with 221 hospitalizations in 2008 (C. Custis, personal communication, March 4, 2010). While an overall decline in stroke mortality took place between 1990 and 2005, stroke hospitalizations increased during this same time. That increase was greater in the small urban counties compared to other Montana counties between the years of 2000 and 2005 (MTDPHHS, 2007).

Because of the prevalence of stroke nationally and locally, it is important to adhere to the educational guidelines for stroke developed by regulatory agencies. An assessment of compliance with national guidelines indicated that nurses did not deliver stroke education to patients and families at one Montana community hospital. Developing an evidence-based educational packet for nurses to use when educating patients about stroke will facilitate compliance with national guidelines for stroke education, and provide patients a tangible resource of information.

Purpose and Objectives

The purpose of this clinical project was to create an evidence-based, educational packet for nurses to use at one Montana hospital to provide stroke education to hospitalized patients and their family members. The project was accomplished by completing the following activities:

1. reviewed regulatory guidelines incorporating key educational targets.
2. reviewed the literature on evidence-based educational guidelines for stroke survivors.
3. collected stroke educational material from a variety of agencies.
4. assessed existing educational materials and processes for documentation.
5. created an educational packet within fiscal restraints.
6. presented the educational packet to the members of the Stroke, Nursing Leadership and Forms Committee for administrative approval.

Definition of Terms

1. *Education* is the "training and instruction in a particular subject" (Encarta World Dictionary, 2009).
2. *Packet* is, "a small package or parcel" (Encarta World Dictionary, 2009).
3. *Educational guidelines* were defined as the guidelines written in the Excerpt from Specifications Manual for National Hospital Inpatient Quality Measures. This document reflects a consensus of what content needs to be included in the patient education packet from nationally recognized organizations.

4. *Nurses* were defined as licensed registered nurses responsible for the care of stroke patients.
5. *Evidence-based practice* (EBP) was defined as a problem-solving approach to clinical care based on current best evidence from well-designed studies, the clinician's expertise, and patient values (Melnyk, & Fineout-Overholt, 2005). In this clinical project evidence included data from organizations and individuals that have demonstrated clinical expertise in their ability to educate stroke patients as evidenced by Stroke Certification from The Joint Commission.
6. *Flesch-Kincaid Reading Level* was the formula used to determine the textual difficulty and grade level of the text. The formula is 0.39 x Average Number of words in sentences + 11.8 x Average Number of syllables per work – 15.59 (Professional RFP Letters, 2010).

Assumptions and Limitations

Assumptions were made in regards to nurses using an educational packet to teach patients about stroke.

1. The lack of an educational packet influenced the delivery of stroke care.
2. Availability of a stroke packet will facilitate the delivery of stroke education to patients and their families.
3. The use of a stroke packet will meet regulatory guidelines for stroke education.
4. Nurses will use an educational packet to inform their patients and families about stroke.

5. Nurses will actively review the packet with the patient and the family and not simply distribute the packet without explanation.
6. The use of the educational packet will improve stroke education documentation.

A potential limitation of the stroke education packet is that it will require some level of reading. If the patient cannot read due to the effects of the stroke or lack of reading skills, the patient may not receive the full benefit of the information. In this case, the family or an advocate could read the materials and help the patient with future decisions. If the patient who cannot read has no family or advocate, the patient is certainly at a disadvantage.

Organization of the Remainder of the Project

Chapter Two includes an overview of the evidence gathered for this project. Chapter Two begins with organizations, agencies and persons contacted. Following that is a review of the required information that all stroke patients or their families must receive prior to discharge as stated by Specifications Manual for National Hospital Inpatient Quality Measures. The literature review in Chapter Two includes information regarding the design characteristics of stroke education written material including content, readability, layout and presentation. Chapter Two concludes with a comparison and contrast of patient education materials used by Joint Commission Stroke Certified institutions. Chapter Three contains methods information including population, setting and timeline for the clinical project. Chapter Four includes a description of the outcome of the project with the creation of the stroke education packet. In Chapter Five the overall evaluation of the educational packet is addressed.

CHAPTER TWO

REVIEWING THE EVIDENCE

Organizations, Agencies, and Persons

Evidence was gathered from a variety of sources including regulatory guidelines, the literature, experts in education and stroke, and persons at stroke certified organizations. The organizations, agencies and persons contacted during the conduct of this project and the materials and information requested are listed below.

1. The AHA/ASA - posters, 6 brochures and downloaded patient instruction sheets.
2. The AHA/ASA - Stroke Patient Education Tool Kit consisting of a video, CD with downloaded patient instruction sheets, Power Point, patient education materials, and user's guide.
3. The MTDPHHS - Power Point, posters, resource guide, refrigerator magnets, and 911 brochure.
4. Krames, a health literature publication company that specializes in creating patient education materials - brochure titled Stroke Recovery.
5. Hospital Medical Librarian - most common information requested by stroke patients.
6. Joint Commission Reviewer for stroke certification - recommendations regarding stroke education packets.

7. Montana hospital - templates from educational packets used to teach patients with a variety of chronic illnesses.
8. Pharmaceutical companies - patient education materials regarding stroke and appropriate medicinal therapy.
9. National Hospital Quality Measures - Specifications Manual for National Hospital Inpatient Quality Measures listing regulatory guidelines.

Stroke information was requested from the AHA/ASA via the Internet. Six well-credentialed brochures were received at no charge with an order form to purchase additional copies. The AHA/ASA staff recommended materials located on the AHA/ASA website that could be downloaded without cost. Further, professionals at AHA/ASA recommended that for hospitalized stroke patients, the *Stroke*: Patient Education Tool Kit can assist nurses in teaching patients about stroke. Individuals employed at approved facilities such as hospitals may purchase the kits.

The *Stroke:* Patient Education Tool Kit by the AHA/ASA was reviewed. Contents of the packet included the following: poster, CD ROM, VHS tape, Power Point presentation with a speaker's outline, and patient education resources fact sheets. The AHA/ASA tool kit was ordered online at www.strokeassociation.org. Within the kit, two items easily integrated into a patient education packet were the patient education resource Fact Sheets and the information from the VHS tape "*Stroke: What Every Person Needs to Know."*

The tool kit included 27 Fact Sheets regarding stroke that could be photocopied by hospital staff or printed from the CD-ROM. Instructions for using the Fact Sheets began with a needs assessment of what information would be most important. The

educator then selects the appropriate Fact Sheet(s) and provides a copy for the patient and caregivers. While the information is directed toward the patient, caregivers and family members will also benefit from receiving the information (AHA & American Stroke Association[ASA], 2007).

The instructions further cautioned the educator not to overload the patient with too much information or material but to reserve less critical information for future teaching (AHA & ASA, 2007). A Stroke: Patient Education Prescription form was included for the nurse to use to track information the patient received. This form included a list of patient education Fact Sheets with an area to check for materials that had been given to the patient/family. In addition, contact information for the American Stroke Association was listed at the bottom of the form.

The VHS tape "*Stroke: What Every Person Needs to Know*" was another helpful component to educate patients. The narrator on the video presented a broad overview of the types of stroke and the resulting disability associated with a stroke. There were multiple testimonies from individuals who experienced a stroke and their journey toward recovery. While this was a great supplement to the educational process in the acute care setting, the tape was not included in the educational packet due to copyright issues. It was possible to consider this video as a complementary form of education while the patient was preparing to transfer to an inpatient rehabilitation facility.

Professionals at the MTDPHHS created the Montana Stroke Initiative to meet some of the educational needs of its residents. The Quality Improvement Coordinator for the Montana Cardiovascular Health Program provided 500 refrigerator magnets with the signs and symptoms of stroke listed. She also provided brochures titled, "With a Stroke-

If You Waste Time You Waste Brain Cells." Also, the MTDPHHS supplied one hundred resource guides containing the names of community physicians, support groups, rehabilitation offices and hospital programs. These supplemental materials were free.

Vendors were contacted to gather stroke informational brochures that could potentially be included in an educational packet. In addition to the AHA/ASA, Krames, a health literature publication company, and three pharmaceutical companies provided sample brochures to review. While the samples were free, a charge for additional brochures from AHA/ASA and Krames limited the author's ability to include them as part of this evidence-based project. Because the pharmaceutical companies included advertising for their product within the brochures, they were not included in this project.

Two clinical experts were contacted. First, Heidi Adams (personal communication, December 12, 2009), a medical librarian provided insight as to the concerns she heard from stroke patients. For example, she stated that patients commonly requested information regarding sexuality concerns following stroke. Adams provides medical information through the medical library at an acute care facility to staff and patients.

Karen Seagraves (personal communication, December 18, 2009) was the second expert contacted. She is a registered nurse with expertise in stroke care who is employed by the Joint Commission to review facilities applying for Stroke Certification. Seagraves eagerly shared her insights regarding patient education. She felt that some of the best patient education materials were the downloadable files from the AHA/ASA. Seagraves further explained that education materials need to be specific to individual patient's needs.

The final action in gathering data for the educational packet was to review existing educational packets located in the acute care facility. The Congestive Heart Failure Packet and the Diabetes Education Packet were also evaluated to understand how patient education was currently occurring. This review provided a template that nurses were already accustomed to using and an idea of the resources currently available within the health care facility. For example, folders were not typically utilized, but large manila envelopes were used to contain patient education materials for the patient.

As all this information was gathered, content was reviewed, and those materials reflecting evidence-based values were selected as appropriate for the stroke education packet. Furthermore, material selected met the criteria of design characteristics, institutional consistency, budgetary considerations and professional judgment.

Regulatory Guidelines

Educational packet content met the requirements of the Specifications Manual for National Hospital Inpatient Quality Measure, Version 3.0a, as of this writing. Professionals at The Joint Commission and CMS have collaboratively created manuals that contain a uniform set of "national hospital quality measures" based upon "data collection time periods" (Specifications Manual, n.d.). The content of the educational packet was dictated by the Specifications Manual for National Hospital Inpatient Quality Measures. At the time of this clinical project, the nurses were required to address five categories when teaching their stroke patients:

1. activation of Emergency Medical System (EMS),
2. follow-up care after discharge,

3. medications prescribed at discharge,
4. risk factors for stroke-overweight, smoking, sedentary lifestyle and
5. warning signs and symptoms of stroke (National Hospital Inpatient Quality Measures, 2009).

Each category was defined by the Specifications manual from the National Hospital Inpatient Quality Measures regarding the necessary requirements for stroke patient education. Professionals at regulatory agencies outlined the topics for the content, but the design characteristics could vary depending upon the preferences of the facility employees.

Literature Review

A review of the literature on patient education for hospitalized stroke patients was conducted. The following search terms were used in the PubMed® , CINAHL® and The Cochrane Library databases: evidence-based nursing, patient education AND stroke; patient education materials, stroke guidelines, patient teaching, and teaching. As relevant studies were analyzed, the references were reviewed to gather additional evidence. Articles published after 1990 were included in this review if they answered one of the following design characteristics:

1. content,
2. readability,
3. layout and
4. presentation.

In order for clients to make informed decisions about their health care, patients need accurate, balanced, and comprehensive health information (Kessler & Alverson, 2007). Effective educational materials contained information that addressed the literacy and readability level of the patient along with a consideration of the design characteristics of the material (Griffin, McKenna, & Tooth, 2003).

Design Characteristics of Content

Studies supported the idea that the educational material should be specific to the patient's need. In a randomized trial of 57 patients and 12 caretakers, participants received computer-generated tailored written education. Stroke patients reported improved satisfaction with the material they received and the material was more effective in meeting their informational needs than non-tailored information (Hoffmann & McKenna, 2007). Practice implications of this study included using a computer system to generate written materials that address the patient's specific concerns (Hoffmann & McKenna, 2007). In another study, Nir and Weisel-Eichler (2006) tried to determine if a tailored nursing intervention, as opposed to usual rehabilitation care, could improve knowledge and behavioral skills for correct use of medication in aged stroke patients. The researchers concluded from 73 intervention patients and 82 control patients that a nursing intervention designed to meet the specific needs of a stroke patient improved knowledge but with limited retention (Nir & Weisel-Eichler, 2006).

In a randomized control study by Green, Haley, Eliasziw, and Hoyte (2007) with 200 participants, the researchers provided specific educational counseling to stroke patients based upon their individual need. According to the researchers, motivational

counseling techniques were effective in increasing knowledge acquisition and retention in an at-risk stroke population (Green, Haley, Eliasziw, and Hoyte, 2007). These results indicated that when the educational needs of patients are identified, the nurse can tailor the educational material to the patient's individual situation.

In the CareFile Project (Lowe, Sharma, & Leathley, 2007), 50 stroke patients in the intervention group received a booklet containing general information about stroke and patient-specific information on stroke. The control group of 50 participants received the usual stroke information leaflets provided by the stroke unit. Results from this randomized controlled trial study demonstrated that stroke patients using an individualized booklet had significant improvement in recognizing risk factors for stroke and knowledge about stroke (Lowe, et al., 2007). In summary, the contents of the educational packet must be specific to the patient's needs.

In contrast to tailored educational packets, brochures tended to offer a broad overview of information. Smith, Forster, and Young (2008) conducted a Cochrane review to assess the effectiveness of information strategies in improving the outcomes for stroke patients or their families. Smith et al. found that information from brochures provided at risk populations with improved knowledge. Sullivan and Katajamaki (2009) also found that stroke brochures were effective information sources and suggested that educators should be sure to offer only well-credentialed brochures.

Design Characteristics of Readability

The content of the stroke packet should be readable. Authors of patient education materials should write simply, at a low grade level, and convey information accurately

(Hoffmann, 2005). According to Sandra Cornett, health care workers giving too much information overwhelm the patient, and the patient will not retain the information given (It takes two, 2008). In the same article, Doug Seubert emphasized using common and easy to understand words (2008).

One aspect of the Hoffman and McKenna (2006) study of stroke patients and their caregivers was to evaluate the reading ability of the stroke patient compared to the reading level of the educational materials. A discrepancy existed between the reading ability of the patients compared to the reading level of the educational material. For over half the participants, the material was written at a higher level than their reading ability (Hoffman & McKenna, 2006). Practice implications of this study suggested that nurses consider the literacy level of their patient population when providing stroke education.

Badarudeen & Sabharwal's, 2008 study to assess the readability of patient education materials available on orthopedic web sites had applicability for stroke education material. In the Badarudeen and Sabharwal study, the researchers found that only 1 article out of 57 articles analyzed, had a readability grade level of 3.6. It was the only article that was below the sixth grade level, which is the recommended readability grade level for the average adult patient (Badarudeen & Sabharwal, 2008). To improve readability the researchers recommended that simple medical terms replace terms that are more complex and that sentences should be short, no more than 8-10 words. Comprehension of written health information can be further enhanced by the use of illustrations, clearly organized formatting, and better use of color, font type, and size (Badarudeen & Sabharwal, 2008).

In the book "Teaching Patients with Low Literacy Skills," Doak (1985) suggested using a reading level equivalent to the national norm (in the U.S.). Doak recommended using a conversational style in the active voice when creating patient education materials.

In a research brief, Albright et al. (1996) described implications for clinical practice derived from a review of 50 pieces of patient education materials. From this analysis, Albright et al. suggested many recommendations regarding patient education materials. Six recommendations are listed:

1. Patients and family members need a verbal explanation to supplement written patient education information.
2. Adjust high readability level educational material to a lower readability level.
3. Provide feedback to vendors regarding the readability of their patient education materials.
4. Generate educational materials specific for individual population groups.
5. Assess patient needs and readability prior to providing materials.
6. Utilize illustrations, formation, font and color to compliment the patient education materials. Supplement written materials with videos or posters.

Design Characteristics of Layout

In addition to the literacy level of the patient, the concept of design, or the appearance of written material to the patient, is important to address when developing educational materials. Doug Seubert, a guideline editor in Quality Improvement and Care Management at Marshfield Clinic wrote that even if a document is the appropriate grade level for readability and medical terms are defined, if it appears difficult to read

with small font and there is little white space, most people will not read it (It takes two, 2008). Albright et al. (1996) described that learning can be enhanced by the use of pictures, good formatting and better use of font, color and size. There was a consensus among educators and researchers that the content and presentation needed equal consideration when creating educational materials.

When teaching patients with low literacy skills, the visual component of the material is important. In *"Teaching Patients with Low Literacy skills,"* Doak (1996) emphasized the importance of placing text closely to the relevant diagrams and illustrations. For each image, one message should be conveyed. Cropping, encircling and drawing lines to highlight an area of interest can help to communicate a single message.

Design Characteristics of Presentation

In a systematic review of the effectiveness of information strategies in improving the outcome for stroke patients or their caregivers, 17 trials with 1773 patients and 1058 caregivers were evaluated by Smith, Forster, and Young (2009). The review categorized the information given to stroke families as active or passive. Active information was education given to stroke patients with a "subsequent agreed plan for clarification and reinforcement" (p.202). In the passive category, researchers disseminated educational information to patients or their caregivers without a plan for follow-up or reinforcement. Researchers from this study found statistically significant, but clinically small, benefits supporting the general concept that information provision after stroke might improve outcomes. Smith et al. (2009) found evidence that patients and their caretakers had

improved knowledge following active education. The review concluded that there was not one clearly defined method to provide information to stroke patients and their families and recommended that routine practice should include an opportunity to review, clarify, and reinforce information provided (Smith, Forster, & Young, 2009).

Green, Haley, Eliasziw, and Hoyte (2007), randomly assigned 164 participants into two groups to determine the impact of one-on-one nurse patient educational sessions. The intervention group received motivational interviewing with a nurse who, along with each patient, identified a health behavior requiring change and barriers regarding that change. The intervention group participants received a 15-20 minute interview with a patient-specific analysis of personal risk factors, lifestyle modification techniques along with written educational materials covering stroke causes, complications, recovery, and resources. Further, the intervention group was invited to attend a class within 4-8 weeks following the stroke. The control group had a brief discussion of stroke with the nurse and participants were offered available education pamphlets in the patient waiting room. The investigators reported there was a statistically significant difference in the results of the knowledge questionnaire between the control and intervention groups with improved results in the intervention group. While the authors attributed this difference to motivational counseling techniques, the nature of the techniques included repeated verbal instruction along with written material.

Summarized below are recommendations based upon the review of the literature for the stroke education packet.

1. Specific, targeted messages based upon patients need (Paul, 2008).

2. Review, clarify, and reinforce, broad messages as seen in brochures (Smith, Forster, & Young, 2008).
3. Readability for the stroke patient and/or the family (Badarudeen & Sabharwal, 2008).
4. Larger font with white space and bullet points to break up the text and a two-column layout. Graphics should be labeled and placed close to the appropriate text in the document (It takes two, 2008).
5. One-on-one brief (15-20 minutes) nurse-patient interview (Green, Haley, Eliasziw, & Hoyle 2007).

Comparison of Stroke Education Packets

Stroke educational packets from Joint Commission Stroke Certified Institutions in the Northwest and Midwest regions of the country were reviewed. Details about the documents are found in Table 1.

Table 1

Comparison of Stroke Education Packets

Facility	Computer Printouts	Publications	Design Characteristics
Northwest regional facility with 361 Medicare certified beds. Nonprofit.	Single paper discharge instructions for patients and families.	Colored 49- page booklet including content: pathology, risk factors, diagnostic tests, medications, post-stroke rehab, cognitive changes, physical changes, emotional changes, caregiver strategies, and safety. Place for personal notes. Invitation to stroke support group. Depression Screening Questionnaire.	Met regulatory content guidelines. Colored pictures, diagrams. Large font. Each page > 60% words. Abundant information.
Northwest metropolitan hospital with 227 Medicare certified beds. Nonprofit.	Downloads from AHA/ASA. Printout flyer invitation to Stroke Support Group.	Two brochures from National Stroke Association.1)explaining stroke and 2)risk factor reduction. Refrigerator magnet with 24-hour nurse helpline. Index card with FAST acronym and call 9-1-1 statement.	Met content regulatory guidelines. Printouts are black and white. Brochures are in color and eye-pleasing. Patients in stroke support group stated they read only the brochures and no other materials.

Table 1 - Continued

Facility	Computer Printouts	Publications	Design Characteristics
Northwest hospital with 390 Medicare certified beds. Nonprofit and affiliate of the hospital listed below.	Discharge Instructions.	Bound 53 page workbook with 1st page personalized with patient's name, type of stroke and effects of stroke. Pages 27 & 28 also personalized for meds. Content includes pathophysiology, rehab, interdisciplinary team, medications, sexuality, and additional resources. Same publication as other area hospitals but with hospital-specific logo.	Met content regulatory guidelines. Black and white with one diagram. >90% pages with words and/or tables. Option for personal notes. 12-pt. font with bolded headings. Glossary contains 61 definitions.
Northwest regional hospital with 372 Medicare certified beds. Nonprofit and affiliate of hospital listed above.	Discharge instructions.	Bound 53-page workbook with 1st page personalized with patient's name, type of stroke and effects of stroke. Pages 27 & 28 also personalized for meds. Content includes pathophysiology, rehab, interdisciplinary team, medications, sexuality, and additional resources.	Met content regulatory guidelines. Black and white with one diagram. >90% pages with words and/or tables. Option for personal notes. 12-pt. font with bolded headings. Glossary contains 61 definitions.
Northwest hospital with 644 Medicare certified beds. Nonprofit.	Discharge education sheet(1 chart copy-1patient copy) Medication information sheet and instruction sheet for video accessing.	5.5"x8.5" 35 page colored Stroke booklet describing, pathophysiology, hospitalization, interdisciplinary care, complications, rehabilitation, risk factors, symptoms and additional resources.	Met content regulatory guidelines Black and white photos. >80% of pages full of words. Entire packet is simple and the hospital provided on-demand videos to facilitate learning.

Table 1 - Continued

Facility	Computer Printouts	Publications	Design Characteristics
Northwest hospital with 442 Medicare certified beds. Nonprofit tertiary care center.	Comprehensive plan of care specific to type of stroke and comorbidities of patient. Patient receives discharge orders with plan of care and then needs are assessed for continual education material.	Facility downloads patient educational materials from The StayWell Company in Yardley, PA, based on educational needs assessment.	Met content regulatory guidelines Colored documents with bolded headings. Detailed information. Potential to receive >20 sheets of paper depending on educational needs. Multiple diagrams-clear and descriptive.
Northwest hospital with 272 Medicare certified beds. Nonprofit.	Discharge instruction sheet. Local clinic rehab team with map. Downloaded Stroke Family Caregiver instructions from AHA/ASA.	Two sturdy hospital folders containing colored health information sheets regarding stroke type, cholesterol, brain attack. One folder for ischemic stroke and one for hemorrhagic. Refrigerator magnet with signs and symptoms of stroke and a stroke prevention brochure. 10- page colored 8.5”x5.5” workbook including info on stroke , risk factors, tests, labs, pathophysiology, medications, signs and symptoms, and a journal. Specific to the patient. Montana resource guide for all services in the Billings area.	Met content regulatory guidelines Purple and white colors really contrasts the written information. Stroke 10-page workbook has large font with areas for note taking. Comprehensive and yet specific. Pages have <50% words. Downloads have smaller font with > 60% words. Folders are distinguished by color for different types of stroke.

Table 1- Continued

Facility	Computer Printouts	Publications	Design Characteristics
Northwest hospital with 146 Medicare certified beds. Nonprofit.	Stroke Education Sheet Needs Assessment with follow-up material provided from AHA/ASA. Invitation to support group.	Sturdy hospital folder containing Stroke Smart magazine, Missoula Resource Guide(community resources specific to that location), NSA pocket card with FAST symptoms, 911 refrigerator magnet, business card of stroke coordinator, and general stroke patient education materials from AHA.	AHA/ASA downloads have clear diagrams with 60% of page containing words. All are printed out in black and white. Presentation of folder is clear. White and blue magnet with large font, "Call 911 Immediately."
Northwest hospital with 223 Medicare certified beds. Nonprofit.	Discharge instruction sheets. All packets downloaded from hospital intranet. Standard packet includes 17 double-sided pages with stroke information. AHA/ASA worksheets.		AHA /ASA downloads have clear diagrams with 60% of page containing words. AHA downloads are printed on colored paper. Packet of instructions is stapled together.
Northwest rural hospital with 205 Medicare certified beds. Nonprofit.	Discharge instructions (patient and chart copy) Stroke care questionnaire with return postage paid envelope. 18 pages front and back /black and white downloads from AHA containing information on types of stroke and regulatory guideline content.	Plain red and white folder with hospital logo sticker.	Met content regulatory guidelines. All information is black and white. No brochures or "extras." Downloads from AHA have clear diagrams and easy to read with about 60% words on page. Some print outs are grainy. Stroke survey included.

Table 1 - Continued

Facility	Computer Printouts	Publications	Design Characteristics
Midwest academic hospital with 2,036 Medicare certified beds.	Patient discharge instructions.	Three letter-size colored workbooks- specific to family education and patient education addressing hypertension, care giving, and brain injury. Three 8.5”x5.5” workbooks addressing prevention, emotion and nutrition. Two brochures and index cards for referral to smoking cessation group and signs and symptoms of stroke. 16-minute video regarding signs and symptoms of stroke.	Met content regulatory guidelines. Patient educational workbooks contained diagrams, 12-pt font or larger, glossary, and comprehensive written material. All material also had place for personal notes at the back of the workbooks. Mayo had the largest quantity of resource materials and if requested there was a reference librarian to assist with individual requests.

A common thread ran through all the educational packets evaluated from Joint Commission Stroke Certified Institutions across the Midwest and Northwest: the educational packets met the criteria by national regulators and did so in a variety of ways. The diversity in the weight of the material ranged from 5.4 oz to 17.5 oz. Some institutions used significant financial resources to create a publication as evidenced by the size, format, color, and quantity of information included. On the opposite end of the spectrum, some institutions created a very simple notebook and included downloaded information from the AHA/ASA website as their primary educational material.

All packets included the five components of patient education as prescribed by the Specifications Manual for National Hospital Inpatient Quality Measures described previously. All the packets included tailored written material. Some institutions spent more time and resources creating a book and integrating specific information relevant to the patients' needs. Of the 12 institutions, 10 included brochures either published by ASA/AHA, National Stroke Association, or supporting pharmaceutical companies. All the institutions reported they could produce in part or in full their patient education materials in alternative languages. The readability level of the packets was not assessed. The font size, layout, and diagram use varied in each packet. Two hospitals printed the majority of their educational information in black and white. According to contacts from each institution, the bedside nurse, the nurse educator, or the stroke coordinator did the presentation of the stroke education materials.

Educational packets can be produced on a modest budget, conform to regulatory guidelines and represent the institution and its efforts to improve care.

CHAPTER THREE

METHODS

Population

Two populations were considered when developing the education packet. The first population included the registered nurses who are responsible for patient education. These individuals were the front line workers at one acute care hospital in northwest Montana. The stroke education packet was designed to assist the nurses in teaching and documenting their instructions to stroke patients and their family members in a convenient format.

The second population of interest was the adult acute care patient diagnosed with a stroke and admitted to one community hospital in northwest Montana. To create an educational packet to meet the specific needs of this population, demographic and reading skills of the target population were important to address. For this project the target population was assumed to have a sixth grade reading level.

Setting

The setting of this clinical project was the acute care hospital environment. The hospital is a regional hospital in northwestern Montana. The educational packet was designed to be used by the registered nurses to teach patients and family members about stroke while the patient is in the hospital.

Timeline and Procedure

The Stroke Education Packet was created over a six-month period in 2009-2010. During the summer of 2009, evidence was gathered and initial contacts were made with agencies and resource organizations. Simultaneous to the collection of materials from nationally recognized organizations, the author began to conduct a literature search for evidence-based research regarding stroke education. In October of 2009, a preliminary educational packet was created. From October to December 2009, the educational packet underwent administrative review and revision. The final product was available for use in late January 2010.

CHAPTER FOUR

OUTCOMES

The outcome of this clinical project was the completed stroke education packet. In the fall of 2009, a preliminary stroke education packet was presented for committee approval. The committees involved in this process included the Stroke Committee, Nursing Leadership Committee and Forms Committee. Members from each hospital committee had an opportunity to make suggestions and request changes in the packet. In addition, staff nurses had an opportunity to provide feedback in fall 2009. Final committee approval occurred in December 2009. The stroke education packet was delivered to the nursing units in January 2010 with the following documents (in order):

1. Letter of Introduction.
2. Call 911 – If You Waste Time-You Waste Brain Cells brochure.
3. Area resource guide.
4. Refrigerator magnet.
5. Stroke "Brain Attack" sheet.
6. Stroke Instruction Sheet - Patient Copy.
7. Stroke Instruction Sheet - Chart Copy.
8. NIH Post-Stroke Rehabilitation document.
9. How Stroke Affects the Brain and Body.
10. Patient education prescription.
11. Let's Talk About Stroke Fact Sheet.
12. Sexual Activity sheet.

13. Comment card.

The Letter of Introduction was common to all the educational packets within the institution and therefore was included in the stroke education packet to provide institutional consistency with all educational packets. The letter was tailored for the stroke patient and provided an explanation of the health care team's interest in giving excellent care. The Letter of Introduction met one regulatory requirement by advising the stroke patient to keep all recommended appointments. This statement was included in an effort to advise patients regarding the follow-up resources to meet regulatory guidelines.

In recognition of evidence-based guidelines, a 14-point font size was selected along with the logo of the facility where the educational packets will be used and a graphic of the human brain. The reading grade level used was 8.5. The cost to produce the Letter of Introduction was 8 cents per sheet (Appendix A).

A stroke brochure created by the MTDPHHS titled, *"With a Stroke- If You Waste Time – You Waste Brain Cells"* was included in the educational packet. The brochure included warning signs of stroke, seeking early treatment, and preventing stroke through lifestyle changes. The contents of the brochure met the educational content requirements of activation of emergency medical services, risk factors for stroke, and early warning signs and symptoms of stroke as mandated by regulatory agencies. This color brochure used large font varying from 14- to 28- point and visuals; it repeated four times the message to call 911. The brochure was written at a 6.3 grade level according to the Flesch-Kincaid scale. The brochure was free of charge to any facility in the state of Montana (Appendix B).

Included in the education packet was a local resource guide produced by the MTDPHHS for individuals recovering from heart disease or stroke. This 19-page, glossy brochure included a list of cardiac rehabilitation facilities, stroke rehabilitation facilities, diabetes management programs, nutrition education/counseling services, support groups, prescription drug assistance programs, smoking cessation specialists, specialty clinics and programs, consumer health information/web sites and signs and symptoms of stroke. Information about the importance of physical activity and an evaluation form were also included. The font size ranged from 12- to 16-point. The content was written at a 12.5 grade level on the Flesch-Kincaid scale. There was no charge for this brochure and it met the educational guidelines of informing patients to activate emergency medical services when appropriate, schedule follow-up care after discharge, learn risk factors for stroke, and recognize warning signs of a stroke (Appendix C).

Attached to the Montana resource guide was a refrigerator magnet listing the signs and symptoms of a stroke and a warning to call 911 immediately should these signs and symptoms occur. This magnet was a visual reminder that could be easily accessed by the patient or the family of the stroke patient when placed on a refrigerator. Again, this magnet was furnished by the MTDPHHS and free of charge. It provided another vehicle to educate patients while meeting national guidelines. While the font was 11-point for the signs and symptoms of stroke, the words are bolded black on a white backdrop. The title was bolded with white text on a maroon backdrop stating, "KNOW THE SIGNS OF STROKE." The Flesch-Kincaid scale could not be applied to this magnet (Appendix D).

A one-page colored sheet, titled "Brain Attack," listed an overview of everything required by the Specifications Manual for National Hospital Inpatient Quality Measures.

This sheet had six categories of information related to stroke: calling 911, warning signs, personal risk factors, medications, smoking cessation, and follow-up resources/rehabilitation. It is important to note that smoking cessation was part of many chronic disease educational programs. Because of the significant impact on health attributed to smoking, a separate packet with information on smoking cessation was already being used by nurses in the acute care facility. Therefore, if a stroke patient was a smoker or had quit within the past twelve months, they would have received not only a stroke education packet, but also a smoking cessation packet.

The Stroke "Brain Attack" sheet had a large font, 14- to 48-point with visual aids. The clip art on this page was repeated on the stroke instruction sheet chart and patient copy to provide continuity within the packet. The "Brain Attack" sheet guided the nurse and patient as each self-care aspect of stroke was discussed. All information that followed the "Brain Attack" sheet was an elaboration on these main content areas as required by regulatory agencies. Applying the Flesch-Kincaid grade level, the "Brain Attack" sheet scored a 20.21 grade level. Typically, this would have indicated a very difficult level of readability. However, the "Brain Attack" sheet contained only 37 words and many graphics. It was the author's opinion that the formula could not be accurately applied to the "Brain Attack" sheet because the document did not contain punctuation. The cost of producing the "Brain Attack" colored sheet was 8 cents per page (Appendix E).

The Stroke Instruction Sheet-Patient Copy listed the five main topics that the nurse reviews with the patient and family: how and when to call 911, personal risk factors, medications, smoking cessation and follow-up resources/rehabilitation.

Instruction sheets met regulatory guidelines and addressed medications and personal risk factors in detail compared to the "Brain Attack" sheet. In addition, medications prescribed by the physician were explained in greater detail by the nurse during the patient discharge process. The Stroke Instruction Sheet-Patient Copy contained all five areas of the educational requirements along with the corresponding graphic from the Stroke "Brain Attack" sheet. To accommodate the content, font size had to be reduced to 12-point, with each title section bolded in a larger font size. The Flesch-Kincaid grade level was 9.75. The cost of this sheet was 8 cents per copy for the patient copy and 1 ½ cents for the chart copy (Appendix F).

The Stroke Instruction Sheet – Chart Copy was identical to the Stroke Instruction Sheet – Patient copy with two exceptions. First, on the Stroke Instruction Sheet – Chart Copy there was an area for patient identification. Second, there was an area for the nurse and patient to sign as the education was completed. Requiring the nurse and patient to sign the document validated that the information was given by the nurse and received by the patient. This simplified the documentation process. The chart copy is to be kept in the nurse's section of the chart as a point of reference for the nurse (Appendix G).

A ten-page, black and white photocopy of a National Institute of Health (NIH) publication, "Post-Stroke Rehabilitation," was included in the packet. The NIH "Post-Stroke Rehabilitation" document contained comprehensive information for the stroke patient or their family about the rehabilitation process following a stroke. This content met the requirement for follow up resource education. Included was a description of the physical, emotional, and cognitive changes a stroke patient undergoes following a stroke. Medical terms were defined along with an explanation of the complications that can

occur with a stroke. For the patients and family member who wanted additional resources, the final two pages of the NIH "Post-Stroke Rehabilitation" document listed organizations with addresses and websites that provide support for the stroke patient. The NIH "Post-Stroke Rehabilitation" document was duplicated at the acute care facility because of a subscription service contract; therefore, the only cost associated with this pamphlet was the copying cost totaling 13 ½ cents per copy.

The Flesch-Kincaid grade level for the NIH "Post-Stroke Rehabilitation" document was 14.55 requiring a high level of education to understand the content. A concern was that the level of readability was high because it used medical terms and larger words. Further, there were no visual aids in the document and the appearance did not have eye-catching color. However, because of the resources listed in the back of the document and the quality of the content for the patient and family who requested information, the NIH "Post-Stroke Rehabilitation" document was incorporated into the educational packet (Appendix H).

A one-page description of the pathophysiology of stroke, "How Stroke Affects Brain and Body" was included in each packet. There were three diagrams on the sheet, two of which were in color. The font size ranged from 12- to 32-point. The Flesch-Kincaid grade level was 6.2. This document provided written information as well as pictures to describe the types of stroke. The cost of the document was 8 cents to produce (Appendix I).

Each education packet was tailored to meet the needs of individual patients and families by including in the packet one or more of 27 Fact Sheets developed by the professionals at the AHA/ASA. Following an assessment of the educational needs of

their patients, nurses developed an “education prescription” for their patient, inserted the appropriate Fact Sheet(s) into the educational packet and documented this on the prescription form (Appendix J). The Fact Sheets were retrieved and downloaded by the nurse from the acute care facility’s computer system.

The Flesch-Kincaid grade level was not calculated for all of the materials; however, a review of one sheet found the grade level to be 9.15. The print cost per sheet was 1 ½ cents per page (Appendix K).

A final instruction sheet in the stroke education packet was the sexual activity sheet. According to the medical librarian, sexual activity following a stroke was one of the most common questions posed by patients. In her expert opinion, including this information in the packet was beneficial for the stroke patient. The sexual activity sheet was a single sheet in black and white with a 12-point font size. The Flesch-Kincaid grade level was 9.12. The cost per sheet to print was 1 ½ cents per page (Appendix L).

To conclude the stroke education packet, a comment card was placed in the back of the packet. This comment card allowed patients an opportunity to report feedback regarding their hospitalization and the education received. The cost of the comment care was 8 cents, and the responses from the clients were priceless (Appendix M).

All hospital education packets will be kept in large 10” x 13” manila envelopes and labeled according to their contents. The manila envelope was sturdy and large so that it was not easily misplaced and additional information could be added to it. The cost of the envelope was based upon the quantity ordered. The original cost in the first order was 23 cents per envelope. This envelope reflected institutional consistency because all

education packets utilized a similar envelope. The label and color of the envelope varied within the institution to help distinguish the educational packets from each other.

Table 2 is a summary of the contents of the Stroke Education Packet.

Table 2

Summary of Stroke Education Packet

Item	Meets Regula-tions	Broad (B) versus tailored (T)	Readabil-ity Grade level	Font and Layout	Expert Recommended	Cost	Institutional Consistency
Intro letter	No	B	8.5	14 Colored with logo and diagram	No	$.08	Yes
"Waste time" brochure	Yes	B	6.3	14-28 Glossy, colored with diagrams	Yes	Free	No
Resource Guide	Yes	T	12.5	12-16 Glossy, Colored	Yes	Free	Yes
Magnet	Yes	B	N/A	11 Colored	Yes	Free	No
Brain Attack	Yes	B	N/A	14-48 Colored with diagrams	No	$.08	Yes
Stroke Instruct-ion Sheet Patient Copy	Yes	T	9.75	12-14 Colored with diagrams	No	$.08	Yes

Table 2 - Continued

Item	Meets Regula-tions	Broad (B) versus tail-ored (T)	Readabil-ity Grade level	Font and Layout	Expert Recom-mended	Cost	Institutional Consist-ency
Stroke Instruction Sheet –Chart Copy	Yes	T	9.75	12-14 Black and white	No	$.015	Yes
NIH post stroke rehabilitation	Yes	B	14.55	12 Black and white	No	$.135	No
Pathophysiology	Yes	B	6.2	12-32 Colored with diagrams	No	$.08	No
Education Prescription	No	T	N/A	12 Black and white	Yes	$.015	No
AHA/ASA downloads	Yes	T	Varies 9.12	12 Black and white	Yes	$.015	No
Sexual Activity	Yes	B	9.15	12 Black and white	Yes	$.015	No
Comment Card	No	B	N/A	12 Black and white	No	$.08	Yes
Envelope	No	N/A	N/A	10”x13” manila	No	$.23	Yes

CHAPTER FIVE

EVALUATION

The stroke education packet had strengths and weaknesses. The strength of the packet began with the fact that it was created. The existence of a stroke education packet will provide advantages for the nurse and the patient. With the use of the stoke education packet nurses will be able to teach essential components of stroke education, comply with evidence-based guidelines, give verbal instructions consistent with written instructions and present educational materials that reflects evidence-based characteristics in design. Further, the nurses will have a simplified method to document their teaching efforts with the stroke education packet.

As a recipient of the stroke education packet, both the patients and their families will benefit. Patients and families will be able to use the stroke education packet as a point of reference for information. Patients and families will receive preventative health information, which has the potential to reduce future disability. The patient and family will also receive lifestyle modification information that could inspire the patient to change unhealthy behaviors. The advantages of an educational packet included a reusable consistent message combining portability and flexibility for patients to learn at their own pace (Hoffman, 2006).

The second strength of this packet was the low cost. The cost to create this packet was less than $1.00. The majority of the costs were in the envelope and copying costs of the materials. The MTDPHHS staff provided brochures and supplemental material at

no charge. There were no labor costs incurred by the facility with the creation of the educational packet.

A third strength of the packet was the comprehensive collection of evidence and material to create the stroke education packet. Using a broad definition of evidence-based practice, the author considered a literature review, leading expert interviews and stroke packets from certified organizations as evidence. The literature search contained an abundance of material regarding design characteristics. The comprehensive collection of information from organizations, agencies and persons provided the author with content and formatting ideas. The input from stroke-certified institutions provided excellent examples of patient education material that met stroke- certified guidelines. Brochures from AHA and MTDPHHS contained information that provided a consistent message, which was repeated.

A final strength of the packet was its similarity in form to other educational packets within the institution. Using a similar form for the education packet will allow for easy integration of the packet into the nurse's practice without requiring significant additional training.

The stroke packet also had some weaknesses. One weakness was the inability to create educational material for a group of individuals that meets regulatory guidelines and yet is tailored to individual concerns and questions. While packets can be tailored using the Fact Sheets, nurses may be unable to address all the learning needs of the patient and family due to a limitation of time and resources. The educational packet coupled with the Fact Sheets is a starting point to offer a tailored stroke education packet.

Another weakness was the readability of the stroke education packet. The readability level varied within the packet due to practical considerations when creating the documents. The readability grade level ranged from 6.2 to 20.21. The variability occurred because of three main reasons. First, materials from the AHA and NIH can be photocopied but not altered. Due to copyright laws, the materials could not be altered using simpler terms and shorter sentences. Second, in an effort to have institutional consistency, materials were included that had a higher readability level. Third, when creating an educational packet, the translation of the materials into simpler terms led to a loss of substance within the educational material. Simplifying medical information needs to be balanced with providing accurate information.

There was a weakness in the process of creating the stroke education packet. Feedback from bedside nurses, who conduct the patient education, should have been solicited earlier in the process. This information should have been gathered prior to creating a rough draft stroke education packet. Including the bedside nurses earlier in the process would have prevented changes later in the process. Also soliciting suggestions from the bedside nurse would have engaged the staff in the process and introduced staff to the idea of the stroke education packet prior to its full implementation.

Finally, another weakness of the packet is that it was not a stand-alone information source for the patient or family. The nurse must provide verbal instruction that accompanies the written information. Educational material was only good if it was presented clearly by the bedside nurse with an opportunity for the nurse to assess learning needs and understanding. The nurse must present this information verbally to the recipients and allow time for questions.

Recommendations

Recommendations were developed for nurses using the stroke education packet. Nurses must receive training that addresses the implementation and documentation of the stroke education packet. Nurses should offer feedback to managers regarding the implementation and documentation of the stroke packet. In addition, nurses should be aware of their responsibility in meeting quality measures that ultimately influence reimbursement.

There are recommendations for vendors of educational materials. Vendors of brochures and patient education materials should provide an avenue for suggestions to improve their product. It is important to provide feedback to vendors that the material may not be accessible to a population with a low literacy rate. Specifically, AHA/ASA should consider creating materials at various levels of readability to make the information more accessible.

There are recommendations for personnel who create educational packets. Personnel should involve key stakeholders early in the development process. Personnel should communicate clearly with administrators regarding budget expectations. Personnel should recognize the process of creating educational material requires ongoing evaluation.

Conclusion

A gap between current practice and regulatory guidelines related to the provision and documentation of stroke education was identified. It was thought that the creation of

a stroke education packet would bridge this gap. This clinical project accomplished the goal of creating an evidence-based stroke education packet to assist the nurses with teaching and documenting.

Evidence-based research was used to create an educational packet. The literature search provided information to create a packet that included evidence-based research in the packet's content, readability, and layout. The material gathered from organizations, agencies, and persons was incorporated into the stroke education packet.

A detailed description of the stroke education packet was listed. The content, readability, and layout were carefully described. Scanned images of the stroke education packet were included in the appendices for the reader. The stroke educational packet met regulatory guidelines, reflected evidence-based practice, and represented the ideas of committee members regarding a professional hospital publication.

The clinical project concluded with a stroke education packet that can be a useful tool for the nurses. Nurses using the stroke education packet will provide clear teaching, careful documentation and high quality care to the stroke patient and their family.

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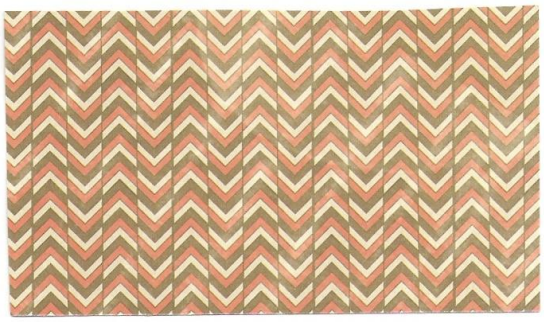
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APPENDICES

APPENDIX A

INTRODUCTORY LETTER





Dear Patient/Client:

Your symptoms and tests confirm that you have a diagnosis called Stroke. This means that your brain had an interruption in blood flow and some brain cells have been damaged. When brain cells are damaged, the parts of the body controlled by these cells do not function as well as before. This can result in difficulty with speech, varying degrees of paralysis, or loss of memory. The degree of disability depends on the size of the stroke and where the stroke occurs in the brain.

There are steps you can take to improve your quality of life and prevent admission/readmission to the hospital. Your doctor, nurse, pharmacist, dietitian, therapist, and social worker are providing you with information and advice so you know how to modify your current lifestyle and track your rehabilitation progress.

The materials in this packet are just a starting point to help manage your condition. More in-depth information and skills will be offered as your symptoms improve and you feel ready. Your doctor and other care givers will also continue to monitor your condition; it is essential that you keep your recommended appointments.

If at any time you have questions. . .

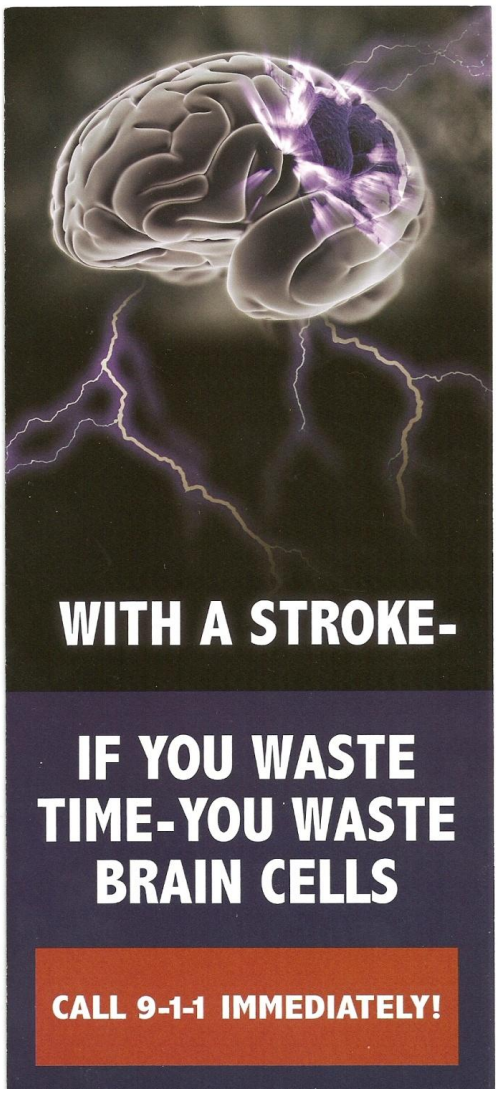
- The information doesn't make sense
- You think you don't have enough information
- You don't have the tools to help yourself (blood pressure cuff)

...be sure and bring it to the attention of one of your caregivers. The caregivers work as a team and want to support you in staying as healthy as possible.

We care about you, Your Healthcare Team

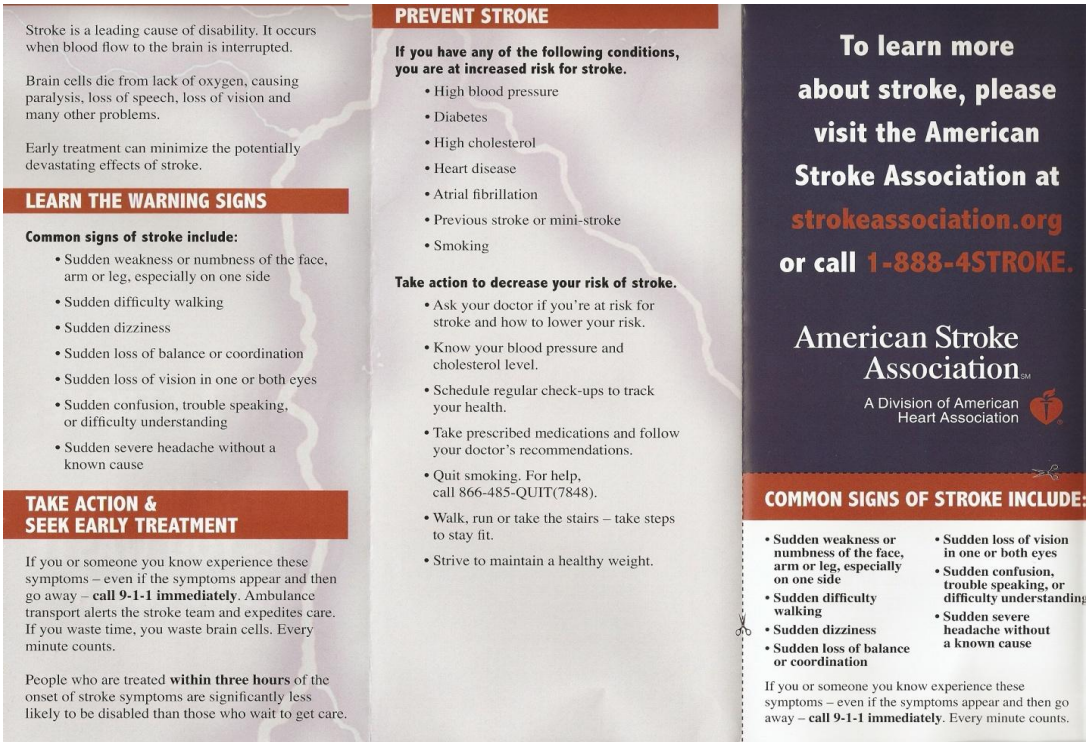
APPENDIX B

STROKE BROCHURE


WITH A STROKE-
IF YOU WASTE TIME-YOU WASTE BRAIN CELLS
CALL 9-1-1 IMMEDIATELY!

APPENDIX B CONTINUED

STROKE BROCHURE



Stroke is a leading cause of disability. It occurs when blood flow to the brain is interrupted.

Brain cells die from lack of oxygen, causing paralysis, loss of speech, loss of vision and many other problems.

Early treatment can minimize the potentially devastating effects of stroke.

LEARN THE WARNING SIGNS

Common signs of stroke include:

- Sudden weakness or numbness of the face, arm or leg, especially on one side
- Sudden difficulty walking
- Sudden dizziness
- Sudden loss of balance or coordination
- Sudden loss of vision in one or both eyes
- Sudden confusion, trouble speaking, or difficulty understanding
- Sudden severe headache without a known cause

TAKE ACTION & SEEK EARLY TREATMENT

If you or someone you know experience these symptoms – even if the symptoms appear and then go away – **call 9-1-1 immediately**. Ambulance transport alerts the stroke team and expedites care. If you waste time, you waste brain cells. Every minute counts.

People who are treated **within three hours** of the onset of stroke symptoms are significantly less likely to be disabled than those who wait to get care.

PREVENT STROKE

If you have any of the following conditions, you are at increased risk for stroke.

- High blood pressure
- Diabetes
- High cholesterol
- Heart disease
- Atrial fibrillation
- Previous stroke or mini-stroke
- Smoking

Take action to decrease your risk of stroke.

- Ask your doctor if you're at risk for stroke and how to lower your risk.
- Know your blood pressure and cholesterol level.
- Schedule regular check-ups to track your health.
- Take prescribed medications and follow your doctor's recommendations.
- Quit smoking. For help, call 866-485-QUIT(7848).
- Walk, run or take the stairs – take steps to stay fit.
- Strive to maintain a healthy weight.

To learn more about stroke, please visit the American Stroke Association at strokeassociation.org or call 1-888-4STROKE.

American Stroke Association℠

A Division of American Heart Association

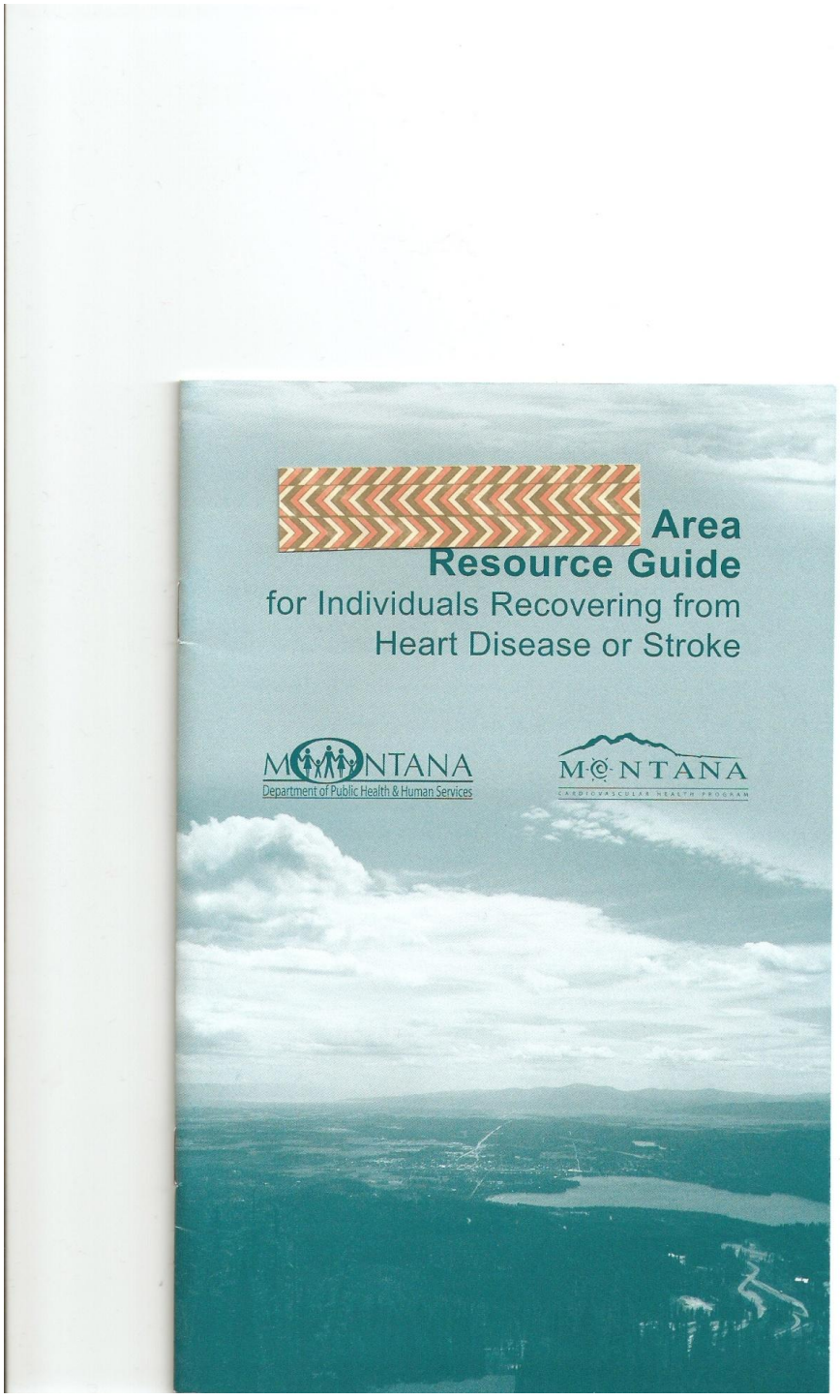
COMMON SIGNS OF STROKE INCLUDE:

- **Sudden weakness or numbness of the face, arm or leg, especially on one side**
- **Sudden difficulty walking**
- **Sudden dizziness**
- **Sudden loss of balance or coordination**
- **Sudden loss of vision in one or both eyes**
- **Sudden confusion, trouble speaking, or difficulty understanding**
- **Sudden severe headache without a known cause**

If you or someone you know experience these symptoms – even if the symptoms appear and then go away – **call 9-1-1 immediately**. Every minute counts.

APPENDIX C

RESOURCE GUIDE


Area
Resource Guide
for Individuals Recovering from
Heart Disease or Stroke
MONTANA
Department of Public Health & Human Services
MONTANA

APPENDIX D

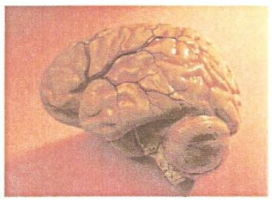
REFRIGERATOR MAGNET


KNOW THE SIGNS OF STROKE
Call 9-1-1 immediately
Sudden numbness or weakness of face, arm or leg
Sudden trouble seeing
Sudden confusion, trouble speaking or understanding
Sudden loss of balance or coordination
Sudden severe headache with no known cause
MONTANA
Department of Public Health & Human Services
strokeassociation.org

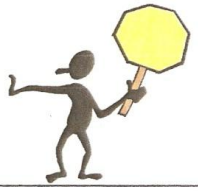
APPENDIX E

STROKE “BRAIN ATTACK”

Stroke "Brain Attack"



Self-Management Program

Call 9-1-1 	**Warning Signs** 	**Personal Risk Factors** • High Blood Pressure • High Cholesterol • Diabetes • Heart Disease • Inactivity • Food Choices 
Medications 	**Smoking Cessation** 	**Follow-up Resources and Rehab** 

APPENDIX F

STROKE INTSTRUCTION SHEET – PATIENT COPY

CALL 9-1-1 WHEN:



You are experiencing the following stroke warning signs
F - Facial weakness. Can the person smile?
A – Arm weakness. Can the person raise both arms?
S – Speech problems. Can the person speak clearly or understand what others are saying?
T – Time to call 911.
Although the symptoms are sometimes subtle and often painless, strokes and TIAs are medical emergencies and require immediate medical attention. If you have a stroke, early treatment can help reduce damage to your brain and loss of physical and mental function.



IF YOU SMOKE. . . QUIT!:

Quit Smoking Packet Given ☐
The [redacted]fers "Smoking Cessation" classes. Call 751-4500 for information.

MEDICATIONS



Please take all your medications as prescribed by your doctor. Consult your doctor/clinic before taking any other medications, including herbal and/ or over the counter medications. It is extremely important that you take your antithrombotic medications as directed. Your doctor may prescribe Aspirin, Plavix, or Warfarin/Coumadin. These drugs effect blood clotting and decrease your risk of further ischemic strokes. Do not skip a dose.
If you have heart disease, take your medications as prescribed. A variety of heart conditions, such as an irregular heartbeat (atrial fibrillation) can cause stroke. Know your cholesterol level. Cholesterol can clog your blood vessels. Your doctor may prescribe a medication called a 'statin' to help lower your cholesterol levels. Never stop a medicines without consulting with your doctor/clinic first, even if you are feeling better. If you have any questions, write them down and bring them to your next doctor visit. Carry a current list of you medication and dosages with you at all times. Avoid recreational and street drugs

PERSONAL RISK FACTORS:



Many factors that increase the risk of stroke can be reduced. If you have high blood pressure, take your medicines as your doctors tell you, even if you feel well. Even mildly high blood pressure increases your chance of having another stroke. Improve your cholesterol by taking prescribed medicine and following a diet full of fruits, vegetables and whole grains. Maintain a healthy weight and limit alcohol consumption. Finally, if you have heart disease and diabetes, they need to be monitored to minimize your personal risk factors.
Follow your physician's advice for managing high blood pressure, diabetes, high cholesterol, heart disease and weight. Eating a healthy diet decreases your risk of high cholesterol, high blood pressure and obesity. Eat foods that are either low in or free from fat, salt and cholesterol. A registered dietician can provide valuable education for your diet.

FOLLOW-UP and RESOURCES:



Close follow-up is important to stroke rehabilitation and recovery. Keep your medical appointments. Some medications require blood tests to check for progress or problems. Keep follow-up appointments for any blood tests ordered by your doctors.
You may need additional rehabilitation services. Whether you need occupational, speech or physical therapy, your health care team will work hard with you for the best outcome.
You may be interested in information regarding classes at the [redacted]t which include but are not limited to Smoking Cessation, Stress Reduction, Healthy Hearts, and Diabetes Management.

APPENDIX G

STROKE INSTRUCTION SHEET – CHART COPY

CALL 9-1-1 WHEN:

You are experiencing the following stroke warning signs:

F - Facial weakness.
Can the person smile?

A - Arm weakness.
Can the person raise both arms?

S - Speech problems.
Can the person speak clearly or understand what others are saying?

T - Time to call 9-1-1.

Although the symptoms are sometimes subtle and often painless, strokes and TIAs are medical emergencies and require immediate medical attention. If you have a stroke, early treatment can help reduce damage to your brain and loss of physical and mental function.

MEDICATIONS:

Do Please take all your medications as prescribed by your doctor. Consult your doctor/clinic before taking any other medications, including herbal and/or over the counter medications. It is extremely important that you take your antithrombotic medications as directed. Your doctor may prescribe Aspirin, Plavix, or Warfarin/Coumadin. These drugs effect blood clotting and decrease your risk of further ischemic strokes. Do not skip a dose.

If you have heart disease, take your medications as prescribed. A variety of heart conditions, such as an irregular heartbeat (atrial fibrillation) can cause stroke.

Know your cholesterol level. Cholesterol can clog your blood vessels. Your doctor may prescribe a medication called a 'statin' to help lower your cholesterol levels.

Never stop a medicines without consulting with your doctor/clinic first, even if you are feeling better. If you have any questions, write them down and bring them to your next doctor visit. Carry a current list of you medication and dosages with you at all times. Avoid recreational and street drugs

PERSONAL RISK FACTORS:

Many factors that increase the risk of stroke can be reduced. If you have high blood pressure, take your medicines as your doctors tell you, even if you feel well. Even mildly high blood pressure increases your chance of having another stroke. Improve your cholesterol by taking prescribed medicine and following a diet full of fruits, vegetables and whole grains. Maintain a healthy weight and limit alcohol consumption. Finally, if you have heart disease and diabetes, they need to be monitored to minimize your personal risk factors.

Follow your physician's advice for managing high blood pressure, diabetes, high cholesterol, heart disease and weight. Eating a healthy diet decreases your risk of high cholesterol, high blood pressure and obesity Eat foods that are either low in or free from fat, salt and cholesterol. A registered dietician can provide valuable education for your diet.

IF YOU SMOKE... QUIT!:

Quit Smoking Packet Given ☐

[redacted] "Smoking Cessation" for information.

FOLLOW-UP and RESOURCES:

Close follow-up is important to stroke rehabilitation and recovery.
Keep your medical appointments.
Some medications require blood tests to check for progress or problems.
Keep follow-up appointments for any blood tests ordered by your doctors.

You may need additional rehabilitation services. Whether you need occupational, speech or physical therapy, your health care team will work hard with you for the best outcome.

You may be interested in information regarding classes at the [redacted] which include but are not limited to Smoking Cessation, Stress Reduction, Healthy Hearts, and Diabetes Management.

Signature / Initials	Signature / Initials
Signature / Initials	Signature / Initials
Signature / Initials	Signature / Initials

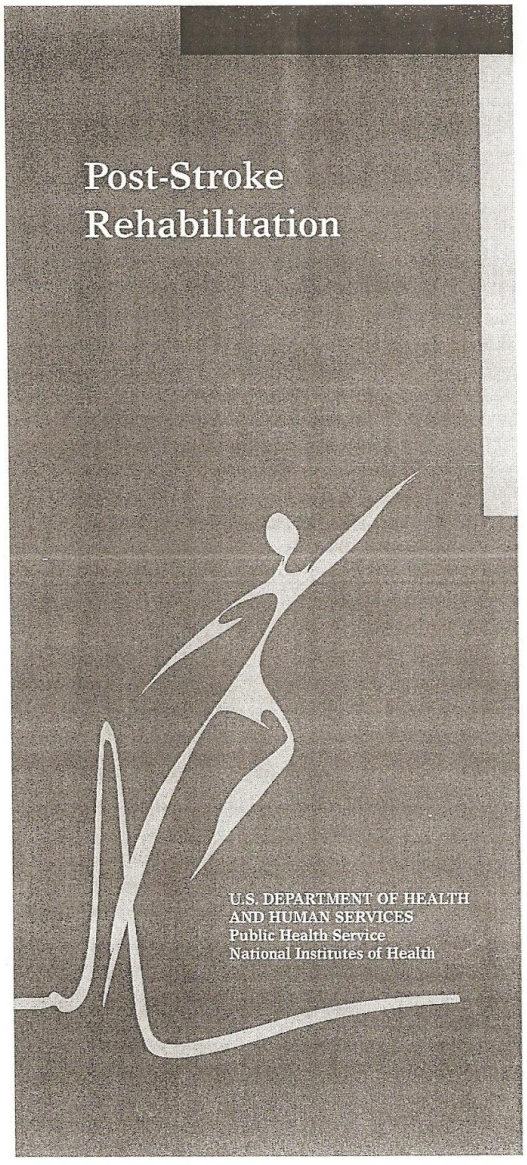
Patient signature Date

Discharge Nurse signature Date

STROKE
INSTRUCTION SHEET
CHART COPY

APPENDIX H

POST-STROKE REHABILIATION


Post-Stroke
Rehabilitation
U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
National Institutes of Health

APPENDIX I

HOW STROKE AFFECTS THE BRAIN AND BODY

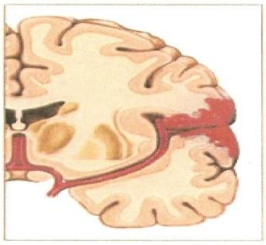
Blocked Artery

Ischemic stroke occurs when an artery that supplies the brain is greatly narrowed or blocked. Narrowing happens as fatty deposits called **plaque** build up in an artery wall. If a piece of plaque or a **clot** (mass of blood cells) moving in the blood gets stuck in a small or narrowed artery, blood stops flowing .

Ruptured Artery

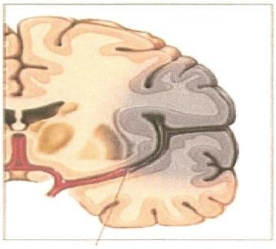
Hemorrhagic stroke occurs if a vessel in the brain breaks and leaks blood. This can damage or kill nearby brain cells. Pooled blood can also increase pressure on the brain. Distant brain tissue may also be harmed because the blood supply never reaches it.

Hemorrhagic Stroke



Hemorrhage/blood leaks into brain tissue

Ischemic Stroke



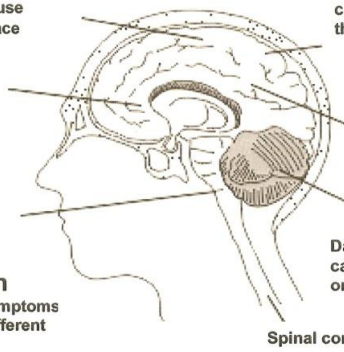
Clot stops blood supply to an area of the brain

How Stroke Affects Brain and Body

Damage to the motor area of the right cerebral hemisphere can cause weakness of the left arm, leg and face

Damage in Broca's area can cause speech problems

Even a small stroke in the brain stem can cause severe problems as many nerves pass through here from the brain to the spinal cord



Damage in the left parietal lobe can cause loss of co-ordination in the right arm and leg

Damage in Wernicke's area can cause difficulty in understanding speech, reading, naming objects

Damage to the cerebellum can cause unsteadiness and poor co-ordination

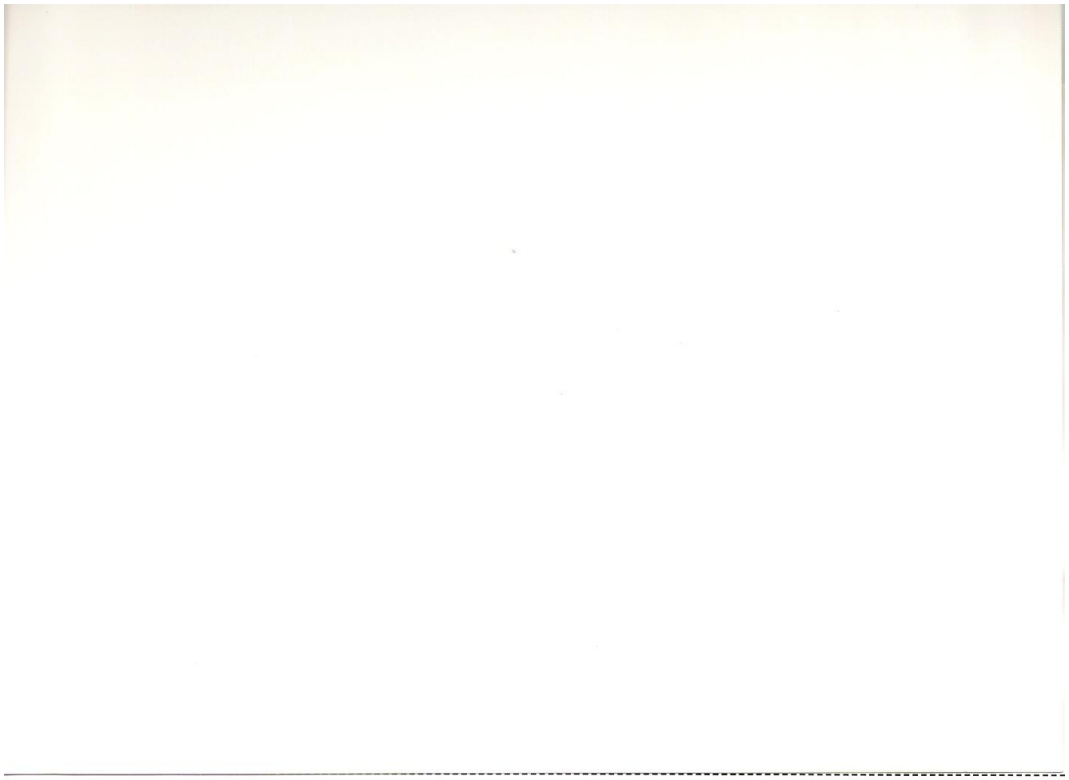
Spinal cord

Cross Section of Brain

giving a few examples of possible symptoms caused by damage from strokes in different areas

APPENDIX J

STROKE: PATIENT EDUCATION PRESCRIPTION



Stroke: Patient Education Prescription

Information You Can Trust

American Heart Association® | American Stroke Association®

Learn and Live™

To help you gain control of your health or better understand life after stroke, read the following fact sheets from the American Stroke Association:

Stroke Prevention

- ❑ Anticoagulants and Antiplatelet Agents
- ❑ Carotid Endarterectomy
- ❑ Children and Stroke
- ❑ Hemorrhagic Strokes and Their Causes
  - ❑ *Los ataques hemorrágicos al cerebro y sus causas*
- ❑ High Blood Pressure and Stroke
- ❑ Ischemic Strokes and Their Causes
  - ❑ *Los ataques isquémicos al cerebro y sus causas*
- ❑ Lifestyle Changes to Prevent Stroke
- ❑ Risk Factors for Stroke
  - ❑ *Los factores de riesgo de un ataque al cerebro*
- ❑ Stroke, TIA and Warning Signs
  - ❑ *Los ataques cerebrales, los TIAs y las señales de aviso*

Life After Stroke

- ❑ Changes Caused by Stroke
  - ❑ *Los cambios causados por los ataques al cerebro*
- ❑ Complications After Stroke
  - ❑ *Las complicaciones después de un ataque al cerebro*
- ❑ Driving After Stroke
- ❑ Emotional Changes After Stroke
- ❑ Feeling Tired After Stroke
- ❑ Living at Home After Stroke
- ❑ Stroke and Aphasia
- ❑ Stroke and Rehabilitation
  - ❑ *Los ataques al cerebro y la rehabilitación*
- ❑ Stroke Diagnosis
  - ❑ *El diagnóstico de un ataque al cerebro*
- ❑ Stroke Family Caregiver

To receive additional information on stroke, visit StrokeAssociation.org or call 1-888-4-STROKE (1-888-478-7653). If you or someone you know has had a stroke, contact the American Stroke Association's "Warmline" at 1-888-4-STROKE. You can speak with other stroke survivors, receive free materials and find out about support groups in your community.

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APPENDIX K

"LET'S TALK ABOUT" STROKE FACT SHEET

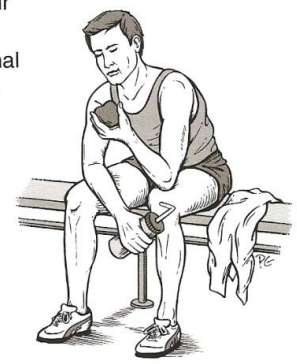
American Heart Association. | American Stroke Association.
Learn and Live.

Let's Talk About Lifestyle Changes To Prevent Stroke

How can I make my lifestyle healthier?

You can do plenty to get your heart and blood vessels in shape, even if you've had a stroke. Healthier lifestyles play a big part in decreasing disability and death from stroke and heart attack. Here are the steps to take:

- Don't smoke.
- Improve your eating habits.
- Exercise regularly.
- Take your medicine as directed.
- Get your blood pressure checked and control it if it's high.
- Maintain a healthy weight.
- Decrease your stress level.
- Seek emotional support when it's needed.
- Have regular medical checkups.



How do I stop smoking?

- Make an agreement with yourself to quit.
- Ask your healthcare professional for information and programs that may help.
- Fight the urge to smoke by going to smoke-free facilities. Avoid staying around people who smoke.
- Keep busy doing things that make it hard to smoke, like working in the yard.
- Remind yourself that smoking causes many diseases, can harm others and is deadly.
- Ask your family and friends to support you.

How do I change my eating habits?

- Ask your doctor, nurse or a licensed nutritionist for help.
- Be aware of your special needs, especially if you have high blood pressure, high cholesterol or diabetes.
- Avoid foods like egg yolks, fatty meats, butter and cream, which are high in fat and cholesterol.
- Eat moderate amounts of food and cut down on saturated fat, sugar and salt.
- Bake, broil, roast and boil (don't fry foods).
- Avoid most "fast food" and read nutrition labels on packaged meals.
- Limit alcohol to one drink a day.
- Eat more fruit, vegetables, cereals, dried peas and beans, pasta, fish, poultry and lean meats.

APPENDIX L

SEXUAL ACTIVITY SHEET

Sexual Activity and Heart Disease or Stroke

AHA Recommendation

Thousands of heart patients and stroke survivors have learned that having heart disease, a stroke or surgery doesn't mean a satisfying sex life must end. After the first phase of recovery is over, patients find that the same forms of lovemaking that they enjoyed before are still rewarding.

Many myths surround sex after heart disease and stroke. The most common one is that resuming sex often causes a heart attack, stroke or sudden death. This just isn't true. There's no reason why heart patients or stroke survivors can't resume usual sexual activity as soon as they feel ready for it. Talk with your doctor if you have any concerns.

Fears about performance and general depression can greatly reduce sexual interest and capacity. After recovery, heart patients and stroke survivors may feel depressed. This depression is normal, and in 85 percent of the cases it goes away within three months. It does tend to magnify any prior sexual problems between partners.

You and your mate or partner can prepare for sex in several ways. First, you can maintain and improve your physical conditions and personal hygiene. Second, you can be more tolerant of your emotions. Temporary mood swings are common.

What are some general guidelines for couples resuming sex?

- Choose a time when you're rested, relaxed and free from the stress brought on by the day's activities.
- Wait one to three hours after eating a full meal to allow time for digestion.
- Select a familiar, peaceful setting that's free from interruptions.
- If prescribed by your doctor, take medicine before sexual relations.

What are some guidelines for stroke survivors resuming sex?

- Be aware that your feelings about your body may have changed since your stroke.
- Try using pillows to help support your affected side during lovemaking.

APPENDIX M

COMMENT CARD

Dear Patient,

[redacted] values your opinions on our services. Each week, a number of our patients are selected at random to receive a survey from Press, Ganey — a nationally recognized survey company. Your answers are used to strengthen our commitment to care.

If you receive a survey following your stay, we encourage you to answer each question as honestly as you can. If you do not receive a survey and have comments to share, please call our Customer Relations Specialist [redacted]. You may also write your question or opinions in the space below.

Thank you for allowing us to provide you with your care.



President/CEO

My visit on _____(date) was to the:

☐ Hospital ☐ Same Day Surgery ☐ Emergency Room
☐ Cafeteria ☐ OB Clinic
☐ Other Outpatient Services (x-ray, lab, etc.)

Name and Phone Number (optional) _____

APPENDIX N

IRB APPROVAL

MONTANA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
For the Protection of Human Subjects
FWA 00000165

960 Technology Blvd. Room 127
c/o Veterinary Molecular Biology
Montana State University
Bozeman, MT 59718
Telephone: 406-994-6783
FAX: 406-994-4303
E-mail: cherylj@montana.edu

Chair: Mark Quinn
406-994-4707
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MEMORANDUM

TO: Heidi Brandt and Charlene Winters

FROM: Mark Quinn, Ph.D. Chair Mark Quinn CJ
Institutional Review Board for the Protection of Human Subjects

DATE: January 19, 2010

SUBJECT: *Stroke Education Packet [HB011910-EX]*

The above research, described in your submission of January 19, 2010, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal Regulations, Part 46, section 101. The specific paragraph which applies to your research is:

___ (b)(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

_X_ (b)(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

___ (b)(3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

___ (b)(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that the subjects cannot be identified, directly or through identifiers linked to the subjects.

___ (b)(5) Research and demonstration projects, which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

___ (b)(6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed, or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA, or approved by the EPA, or the Food Safety and Inspection Service of the USDA.

Although review by the Institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit 3 copies of the usual application form and it will be processed by expedited review.