

**ASSESSMENT AND EVALUATION OF PATIENT
DISCHARGE ADVICE QUALITY AND DEVELOPING THE
SPECIALTY BASED STANDARDIZED DISCHARGE ADVICE**

**Internship Training
at
Fortis Hospital, Bannerghatta, Bangalore**

**By
Harsha Tiwari**

**Under the guidance of
Dr. Susmit Jain**

**MBA Hospital & Health Management
2013–15**


**Institute of Health Management Research
Jaipur
2015**

Internship Training

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Post Graduate Diploma in Hospital and Health Management

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Institute of Health Management Research

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. Harsha Tiwari** student of **MBA Hospital and Health Management (Hospital Management Stream)** from **IIHMR University, Jaipur** has undergone Internship training at **Fortis Hospital, Bannerghatta Road, Bangalore** from **11/3/2015 to 11/5/2015**.

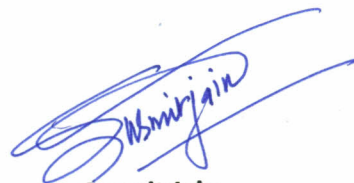
The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
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This certificate is awarded to

Dr. Harsha Tiwari

In recognition of having successfully completed her

Internship in the department of **Quality**

And has successfully completed her Project on

**"Assessment and Evaluation of Patient Discharge Advice Quality and
Developing the Specialty based Standardized Discharge Advice"**

Date: 9th May 2015

Fortis Hospitals, BG Road, Bangalore

She comes across as a committed, sincere & diligent person who has a

Strong drive & zeal for learning

We wish him/her all the best for future endeavors

For Fortis Hospitals Ltd, India

Neesha
Dr. Neesha Nair

Unit Head - Quality

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11/5/2015

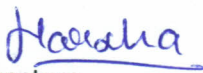




INSTITUTE OF HEALTH MANAGEMENT RESEARCH, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled '**Assessment and Evaluation of Patient Discharge Advice Quality and Developing the Specialty based Standardized Discharge Advice**' and submitted by Dr Harsha Tiwari Enrollment No. IIHMR/PGDHM/2013-15/18-1446 under the supervision of Dr Susmit Jain for award of MBA Hospital and Health Management of the university carried out during the period from 11/3/2015. to 11/5/2015 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.


Signature

Abstract

Discharge advice comprises of set of instructions given by consultant at the time of discharge. The instructions given at the time of discharge should be in simple language and easy to understand as it need to be followed by patient and their relative who may not have proper knowledge and understanding of medical terms. Personal care after discharge from the hospital is vital to reduce readmissions and complications.

The main objective of the study that I have done in Fortis Hospital, BG road, Bangalore is to provide and enhance the knowledge about the compliance level of current discharge advice to the standard desired one. It included both intense review of literature and observation as well as assessment of 400 discharge advice of selected six specialty with the help of audit tool. The ultimate goal was to develop a standardized format for the discharge advice.

ACKNOWLEDGEMENT

‘When a person is helped, guided and co-operated his or her heart is bound to pay gratitude.’

My internship and dissertation experience has been filled with challenges and people that I will appreciate forever, numerous people have contributed in varying capacities which permitted completion of this project.

I take this opportunity to express my profound gratitude and deep regards to Dr.S D Gupta (President, IIHMR University), Dr. Ashok Kaushik (Dean Academic and Student Affairs, IIHMR) I also take this opportunity to owe my thanks and deep regards to my mentor Dr. Susmit Jain (Assistant Professor-IIHMR Jaipur) for his exemplary guidance, monitoring and constant encouragement throughout the internship and dissertation.

I also take this opportunity to express a deep sense of gratitude to Dr. Neesha Nair (Unit Head- Quality Fortis hospital, BG road, Bangalore) and my company mentor Ms. Vandana Choudhary (Quality Officer, Fortis hospital, BG road, Bangalore)for their cordial support, valuable information and guidance, which helped me in completing this task through various stages .I will also like to thank Ms Sujatha Harindranath (Assistant Manager-Quality) and Dr. Aman Nair (Manager-Operations Medical Services) for their continuous support and guidance. The blessing, help and guidance given by them time to time shall carry me a long way in the journey of life on which I am about to embark.

I am obliged to staff members of Fortis hospital, BG road, Bangalore for the valuable information provided by them in their respective fields. I am Grateful for their cooperation during the period of my assignment. Lastly, I thank almighty, my family and friends for their constant encouragement without which this assignment would not be possible.

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List of Symbols and Abbreviations

- PEDI – Parent Education/Discharge Instructions
- RED- Re- Engineered Discharge
- NPSG-National Patient Safety Goals
- CABG- Coronary Artery Bypass grafting
- CVTS- Cardiac Vascular Thoracic Surgery
- MAS-Minimal Access Surgery
- RMO- Resident Medical Officer
- NA-Not Applicable
- * - Multiplication
- / - Division

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- Annexure A- Discharge advice audit tool
- Annexure B- Discharge Advice Template for Surgical Specialty
- Annexure C- Discharge Advice For Non Surgical Specialty

1. Introduction

1.1 Background of the study

Discharge advice comprises of set of instructions given by consultant at the time of discharge. These instructions are for the after discharge care of the patient. At the time of discharge, the patient should be provided with a document that includes language and literacy-appropriate instructions and patient education materials to help in successful transition from the hospital. These documents should be brief, focused on critical information to the patient, and primarily directed at what the patient needs to understand to manage his or her condition after discharge. This is not a substitute for direct medical care. Personal care after discharge from the hospital is vital to reduce readmissions and complications. Variation in discharge advice given by doctor and discharge advice content or missing to mention few instructions in discharge advice results in adverse outcome. It not only leads to the situation full of confusion and incomplete information but this may also results into readmission of patients due to no clarity about medication, side effects of medication, and when and how precautions and care to be taken.

The instructions given at the time of discharge should be in simple language and easy to understand as it need to be followed by patient and their relative who may not have proper knowledge and understanding of medical terms. Comprehension level depends on the level of understanding of these instructions by the patient and their relative.

Improper and incomplete discharge advice may results into readmission of the patient. This apart from physical problems causes financial and mental trouble to the patient but also

prevents hospital from dedicating its resources and time to some other patient requiring the treatment.

Standardization of hospital discharge advice will not only streamline variety of information but will also result in proper follow up and care taken by patient itself. This ultimately will also lead to increase patient satisfaction.

1.2 Aim:-

Aim of this project is -

- To assess and evaluate the Patient discharge advice and improve the hospital discharge advice by developing standard discharge advice template.

1.3 Objectives:-

The basic objectives behind this project were as follows:

Part-1

- To observe and discuss the discharge advice preparation process.
- To do the root cause analysis of problems encountered in patient discharge advice preparation.
- To find the components to be included in patient discharge advice by literature review and discussion with relevant staff.
- To develop a discharge advice evaluation instrument.
- To evaluate the discharge advice of five main specialities of hospital and assess the gap.

Part-2

- To develop the patient discharge advice template.

- To suggest measure to improve the quality of discharge advice.

2. Literature Review

2.1 Definition

Discharge from the hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge involves the medical instructions that the patient will need to fully recover. Discharge planning is a service that considers the patient's needs after the hospital stay, and may involve several different services such as visiting nursing care, physical therapy, and home blood drawing.

2.2 Description ¹

Hospitalization is often a short-term event, so planning for discharge may begin shortly after admission. The physicians, nurses, and case managers involved in a patient's care are part of an assessment team that keeps in mind the patient's pre-admission level of functioning, and whether the patient will be able to return home following the current hospital admission. Information that could affect the discharge plan should be noted in the patient's medical record so that it will be taken into account when discharge is being scheduled. The primary questions include:

- Can this patient return to his or her preadmission situation?
- Has there been a change in the patient's ability to care for him- or herself?
- Is the patient in need of services to be able to care for him- or herself?
- Which services will the patient need?
- Are there mental health needs that must be met?

- Does the patient agree with the discharge plan?

While a person has been in the hospital, physicians other than the primary care physician have been in charge of the patient's care. Good discharge planning involves clear communication between the hospital physician(s) and the primary care physician. This may be done by telephone and/or in writing. The information to be conveyed includes:

- a summary of the hospital stay
- a list of test and surgeries performed, with results
- a list of test results still pending
- a list of tests needed after discharge, such as a repeat chest x ray
- a list of medications the patient is being discharged with, including the dosage and frequency
- a copy of the patient's discharge instructions
- when the patient should see the primary care physician for a follow-up appointment
- the plan for outpatient treatment, such as home intravenous antibiotics or parenteral nutrition to ensure that responsibility for this treatment has been clearly transferred and that the primary care physician accepts the treatment responsibility
- discharge instructions to the patient on activity level, diet, and wound care

Before leaving the hospital, the patient will receive discharge instructions that should include:

- an explanation of the care the patient received in the hospital
- a list of medications the patient will be taking (the dosage, times, and frequency)
- a list of potential side effects of any newly prescribed medications

- a prescription for any newly prescribed medications
- when to see the primary care physician for a follow-up appointment
- home care instructions such as activity level, diet, restrictions on bathing, wound care, as well as when the patient can return to work or school, or resume driving
- signs of infection or worsening condition, such as pain, fever, bleeding, difficulty breathing, or vomiting
- an explanation of any services the patient will now be receiving, such as for a visiting nurse, and to include contact information

The term discharge planning may be used to refer to the service provided to help patients arrange for services such as rehabilitation, physical therapy, occupational therapy, visiting nurses, or nursing home care. This service may be provided by a case manager or by the hospital's social service department. The patient may request this service, or the physician may make the request in the form of a referral to the department. The patient will need to be evaluated to see what services he or she requires, as well as what services he or she qualifies for (such as meals-on-wheels), or what services the patient's insurance will cover. The patient may be discharged home with a visit from a visiting nurse later the same day to assess the patient's need for these services and to make arrangements for him or her in the home. A person may be discharged home only when certain equipment such as a hospital-style bed and oxygen has been delivered to the home. If a patient feels he or she is being discharged before he or she is ready, the patient can file a complaint with the hospital's ombudsman.

A follow-up from the hospital staff, either physician, nurse, or case manager, should take place within two weeks of discharge to review the results of any tests that were done in the

hospital that came in after the patient was discharged, to remind the patient of the follow-up appointment with the physician, to see if the patient has any questions about any new medications that were added in the hospital, and to be sure that no problems arose after discharge that have not been addressed. Such follow-up calls help to ensure a successful recovery.

A patient may experience a complication or an adverse effect as a result of care received in the hospital. The complication may be due to medication that was given, or from a test or surgery performed. In the February 2003 issue of *The Annals of Internal Medicine*, researchers reported how often these adverse effects arose, and how severe they were. Patients were interviewed by telephone a few weeks after discharge². About 20% had experienced an adverse effect such as a new or worsening symptom, medication-related problems, the need for an unexpected visit to the doctor, or death. Of the 20%, about one third had preventable adverse effects, and another third had problems that would have been less severe if they had received proper medical care. Three percent developed permanent disability.

2.3 Reasons for Discharge Advice Quality Improvement

Discharge from the hospital is a vulnerable time for patients. Nearly 1 in 5 patients experiences an adverse event during this transition, with a third of these being likely preventable.^{3,4} Comprehensive discharge instructions are necessary to ensure a smooth transition from hospital to home, as the responsibility for care shifts from providers to the patient and caregivers. Unfortunately, patients often go home without understanding critical information about their hospital stay, such as their discharge diagnosis or medication changes,^{5, 6} leaving them both dissatisfied with their discharge instructions⁷ and at risk for

hospital readmission. Efforts to improve discharge education have focused on increasing communication between care provider and patient. The use of designated discharge coordinators,^{8, 9} implementation of “teach-back” techniques to assess and confirm understanding,¹⁰ and adoption of patient-centered educational materials all offer tools to improve communication with patients. However, guidelines for communication between providers and their shared role patient discharge education, particularly between nurses and physicians, are scarce. Daily interdisciplinary rounds¹¹ and shared electronic health records are potential ways to foster such communication, but the methods and frequency with which providers communicate about discharge instructions with each other is poorly understood. Similarly sometimes instructions written in Discharge advice are not even explained to the patient and are also not checked by the primary consultant.

Discharge out of the hospital is a time of heightened vulnerability for our patients. The combination of shorter lengths of stay and increased clinical acuity results in increased complexity of discharge instructions and higher expectations for patients to perform challenging self-care activities. Yet, the amount of time and resources available for patient and family caregiver preparation prior to discharge has not significantly changed commensurate with these new demands. Inadequate health literacy and unrecognized cognitive impairment are two important contributing factors. The business case for enhancing patients' comprehension of their discharge instructions is strengthening. This case largely builds upon the association between patients' lack of understanding of their instructions and the risk for hospital readmission. Med PAC recommended to Congress in its June 2007 report that hospitals publicly disclose their own risk adjusted rehospitalization rates and "after a year or two, public disclosure could be complemented by a change in

payment rates, so that hospitals with high risk adjusted rates of readmission receive lower average per case payments." In July 2008, the National Quality Forum adopted two hospital performance measures based on rate of rehospitalization and the Centers for Medicare and Medicaid Services (CMS) indicated an interest in making rehospitalization rate a measure for value-based hospital payment.¹²

When it has been determined that a patient is medically ready for discharge, the health care team must determine the most appropriate setting for ongoing care. Determinants of the appropriate site of care involve medical, functional, and social aspects of the patient's illness. The patient's acute and chronic medical conditions, potential for rehabilitation and decision-making capacity must be taken into account¹³

Input is needed from multiple sources to determine the most suitable discharge plan. Involved parties often will include the patient, family, case manager, nurse, physician, physical and occupational therapist, social worker, and insurer.

In order for the patient to be deemed safe and ready for discharge to home or to a non-acute environment (rehabilitative, transitional, or chronic care), a provider must take into account a number of factors beyond the medical determinants. These factors include:

- Patient cognitive status
- Patient activity level and functional status
- The nature of the patient's current home and suitability for the patient's conditions (eg, presence of stairways, cleanliness)
- Availability of family or companion support
- Ability to obtain medications and services

- Availability of transportation from hospital to home and for follow-up visits
- Availability of services in the community to assist the patient with ongoing care

Discharge home - Approximately three-quarters of hospitalized patients are able to return to their home environment following discharge .¹⁴For discharge home, patients, with help from family or other caregivers if available, should be able to:

- Obtain and self-administer medications
- Perform self-care activities
- Eat an appropriate diet or otherwise manage nutritional needs
- Follow-up with designated providers

The discharge of patients from hospitals is a process that is well known to be associated with a variety of problems.¹⁹ Research has shown:

- One in five patients is readmitted within 30 days.
- One in five patients experiences an adverse event after discharge, with one-third of them being preventable.

According to one study, at discharge only 42 percent of patients could accurately state their diagnosis, 28 percent could list the names of their medications, 37 percent could state the purpose of their medications, and 14 percent could list common side effects of their medications.^a The After Hospital Care Plan that the patient receives at discharge contains a wealth of information, in plain language, including the diagnosis, telephone numbers to call with questions, a detailed medication list and schedule, and a list of follow up appointments that are plotted on a 30-day calendar. Before the patient leaves the hospital, the DA walks the patient through the document, asks the patient questions to ensure he or she knows

where to find information, and provides any additional patient education material that may be useful. "Overall, patients really love it when you give them an After Hospital Care Plan that they can understand," Dr. Jack said. "They feel more ready and more prepared to go home." Having all the information in one document also helps family members participate in the patient's care. Additionally, patients are encouraged to bring the plan to all follow-up appointments so it can serve as a companion to the discharge summary the patient's community physicians are supposed to receive.²⁰

In November 2011, a group of medical professionals from three counties located in the Portland metropolitan area came together to apply for a federal grant that would lay the groundwork for a CCO serving the region's Medicaid patients. The participants were Care Oregon, Providence Health and Services-Oregon, Clackamas County, the Coalition of Community Health Clinics, Kaiser Permanente Northwest, Legacy Health, Multnomah County, Oregon Health and Science University (OHSU), and Washington County. This joint effort, known as the Tri-County Health Commons Project ("The Commons"), set the following goals:

- Reduce admissions by 17%
- Decrease ED visits by 20%
- Reduce overall cost growth per Medicaid patient
- Improve Medicaid patient outcomes

Of the factors identified by The Commons as contributing to readmission rates, two were the hospital-discharge summary and patient follow-up workflow.²¹

2.4 Projects on Discharge instructions

1. Working with a diverse group of stakeholders– including volunteer nurses and physicians from Lucile Packard Children's Hospital at Stanford, University of Minnesota Amplatz Children's Hospital, Birmingham (U.K.) Children's Hospital and Minneapolis Community and Technical College, volunteer graphic designers, parents of children with heart disease and partner site representatives, Children's Heart Link launched the Parent Education/Discharge Instructions (PEDI) project.

The objective of the PEDI project is to help parents and caregivers provide better care to children who have undergone heart operations by providing them with discharge instructions on medication, wound care, physical activity, diet, etc. Use of the discharge instructions should lead to better follow-up with patients and improved quality of care provided by hospitals. Studies indicate that delivery of postoperative patient education through individualized content, use of combined media for delivery, provision of education on a one-on-one basis, and in multiple sessions are associated with improvement in educational/health outcomes.¹⁴

As of mid-2014, PEDI has been implemented in nine Children's HeartLink partner hospitals in five countries (India, China, Malaysia, Vietnam and Brazil). At least 540 health care professionals have received PEDI training and have in turn educated nearly 10,000 patients and their families using the PEDI materials. The PEDI training module is available in five languages, and the PEDI booklets are available in 12 languages. There have been hundreds of visits to the PEDI webpage. A PEDI Project poster was presented at the Institute for Patient and Family Centered Care Summit in Vancouver, Canada in 2014. Next steps for PEDI include the introduction of the materials by a team of trained medical volunteers to

the remaining Children's HeartLink partner sites for training on how to use the discharge instructions and how to tailor the materials to their own needs.¹⁶

2. *Taking Care of Myself: A Guide for When I Leave the Hospital*¹⁷ is adapted from the Project RED (Re-Engineered Discharge), which was funded by the Agency for Healthcare Research and Quality and the National Heart, Lung, and Blood Institute and operated by the Boston University Medical Center. Project RED¹⁷ showed that preparing patients to care for themselves when they leave the hospital can improve patient safety and reduce re-hospitalization rates. Giving patients an easy-to-understand discharge plan is 1 of 11 elements in the RED process. More detailed tools for implementing RED, and revisions of existing tools to ensure that diverse populations- especially patients with limited English proficiency, are now being developed. The tools will be completed by late 2012 and posted on the AHRQ Web site and the Boston University Medical Center's Project RED Web site.

2.5 Guidelines¹²

Joint Commission National

Patient Safety Goals

Requirement NPSG.02.05.01

The [organization] implements a standardized approach to hand-off communications, including an opportunity to ask and respond to questions.

Elements of Performance for NPSG.02.05.01

1. The hospital's process for effective hand-off communication includes the following: Interactive communication that allows for the opportunity for questioning between the giver and receiver of patient information.
2. The hospital's process for effective hand-off communication includes the following: Up-to-date information regarding the patient's condition, care, treatment, medications, services, and any recent or anticipated changes.
3. The hospital's process for effective hand-off communication includes the following: A method to verify the received information, including repeat back or read-back techniques.

Requirement NPSC.o8.o3.o1

When a [patient] leaves the [organization]'s care, a complete and reconciled list of the [patient's] medications is provided directly to the [patient] and, as needed, the family, and the list is explained to the [patient] and/or family.

Centers for Medicare Medicaid Services, Hospital Conditions of Participation

Sec. 482.43 Condition of participation:

Discharge planning.

The hospital must have in effect a discharge planning process that applies to all patients.

The hospital's policies and procedures must be specified in writing.

(a) Standard: Identification of patients in need of discharge planning. The hospital must identify at an early stage of hospitalization all patients who are likely to suffer adverse health consequences upon discharge if there is no adequate discharge planning.

(b) Standard: Discharge planning evaluation.

The hospital must provide a discharge planning evaluation to the patients identified in paragraph (a) of this section, and to other patients upon the patient's request, the request of a person acting on the patient's behalf, or the request of the physician. A registered nurse, social worker, or other appropriately qualified personnel must develop, or supervise the development of, the evaluation.

Discharge Planning Requirements of the Medicare Statute (2005)

(Acute care hospital setting)

Discussion of Post-hospital Needs— Before leaving the hospital, it is important to make sure that the hospital has discussed with the beneficiary and his or her family member(s) all post-hospital care needs and that a post-hospital plan of care and services has been developed before discharge. Particular vigilance is necessary to ascertain whether the patient's discharge plan identifies the services that are needed and how those services will be provided. Beneficiaries should also request assistance in assuring that necessary services are put in place prior to discharge.

2.6 Medical Specialties

2.6.1 Cardiovascular thoracic heart surgery

Definition- Pertaining to the heart and chest. Cardiothoracic surgery is surgery in the area of the heart and chest or both. A cardiothoracic surgeon is qualified to operate on the heart, areas of the chest and in some cases, the lungs.²²

*Conditions-*Following are some conditions leading to cardiovascular thoracic heart surgery:

- Coronary artery disease (artery blockage)

- Valvular insufficiency (leaking or regurgitation)
- Valvular stenosis (blocked or narrowed valves)
- Congestive heart failure (ineffective heart muscle)
- Myocardial infarction (heart attack)
- Left ventricular aneurysm (stretched heart muscle)
- Thoracic aortic aneurysm (stretched aorta in chest)
- Aorta transaction (a rupture through nearly all aorta layers from trauma, collisions or falls)
- Atrial fibrillation
- Lung cancer
- Mediastinal tumors
- Tracheobronchial cancer
- Tracheal stenosis
- Esophageal cancer and benign conditions of the esophagus
- Aortic dissection (bleeding in the aorta walls)

Treatment -

- Coronary artery bypass grafting (CABG)-In this procedure, arteries or veins from elsewhere in the body are grafted to the coronary arteries to relieve angina and reduce the risk of death from coronary artery disease. The grafts bypass narrowed or blocked passages of the arteries to improve blood supply to the heart muscle. This procedure can be lifesaving in patients who are not good candidates for percutaneous catheter techniques (angioplasty and coronary stenting) or continued medical therapy. Our cardiothoracic surgeons may also perform minimally invasive

and “off pump” (no heart-lung bypass machine) procedures. We adhere to the principles published in the “Appropriateness Criteria for Revascularization” by the American College of Cardiology and the American Heart Association.

- Mitral and aortic valve repair and replacement-UC Irvine Health cardiothoracic surgeons are highly skilled at repairing blocked or leaking heart valves. Our first choice is always to preserve native valve, but when a patient’s heart valve is too badly damaged, we use mechanical or tissue prostheses (including the implantation of human donor tissue). Our surgeons are skilled at minimally invasive valve repair techniques that involve two- to three-inch incisions rather than a major chest incision. For patients, such minimally invasive approaches offer reduced risk of infection, faster recovery times and less blood loss. Nationally, studies have shown that only 50 percent of potentially repairable mitral valves are repaired instead of replaced. At UC Irvine Health, we achieve successful mitral valve repairs in close to 100% of patients who are appropriate candidates.
- Left ventricle restoration-Our cardiothoracic surgeons can treat heart attacks, congestive heart failure and certain types of aneurysms by reshaping the left ventricle in a procedure named for its creator, Dr. Vincent Dor. It involves removing scarred, dead tissue in this chamber of the heart muscle, improving its ability to pump blood out to the body. This is often done in conjunction with coronary bypass surgery and/or valve repair.

- Surgical treatment of aortic aneurysms and dissections-The walls of the aorta, the body's largest blood vessel, can weaken and develop an aneurysm (a dilatation or pouching), which can rupture or lead to a separation—also called a dissection—of the vessel walls. Either can be a life-threatening emergency. When an aneurysm or dissection is detected in a chest X-ray, an echocardiogram or computed tomography (CT) and magnetic resonance imaging (MRI) scans, surgeons repair the damaged section with a graft (also called a stent) of special woven material. At UC Irvine Health, many of these procedures can be performed using endovascular techniques without surgical incisions.
- Cardiac Support Devices-Our surgeons sometimes install external devices that can help maintain blood circulation either before or after surgery. The Tandem Heart implantable pump also can be used in patients undergoing high-risk percutaneous coronary interventions (angioplasty or coronary stent). This small, semi-portable device can be placed in an artery through the groin or at the time of open heart surgery. Such implantable devices are in various stages of development and trials, but they are shown to offer temporary support of heart function and are often life-saving.
- Lung and esophageal resection-Both the esophagus and lungs can be affected by either benign or malignant diseases, necessitating surgical removal of the damaged tissue. Many of these procedures can be performed with small incisions that are less painful and can speed recovery time.

- Radiofrequency ablation for atrial fibrillation-Atrial fibrillation is a common but abnormal heart rhythm that can lead to rapid, irregular heartbeats. These heartbeats can cause discomfort, dizziness and shortness of breath. Left untreated, patients are at greatly increased risk for stroke. While some patients can be treated with medications or catheter procedures, others are resistant to these interventions. UC Irvine Health cardiothoracic surgeons perform minimally invasive surgery with small incisions to direct radiofrequency waves (modified electrical energy) on the surface of the heart, creating precise scar lines to block the erratic electrical impulses causing the irregular heartbeat.
- Evaluation and treatment of Mediastinal tumors-Mediastinal tumors are abnormal tissue growths in the chest cavity between the lungs. These tumors can be benign or malignant (cancer) and they occur across all age groups. Surgical treatment may include thoracotomy, a procedure performed through an incision in the chest, as well as with minimally invasive approaches, including thoracoscopy and mediastinoscopy.

2.6.2 Cardiology

Definition-The study of the heart and its functions in health and disease.²⁴

*Conditions*²⁵-Following conditions treated under the cardiology-

- Arrhythmia
- Stroke
- Diabetes
- Cardiac Arrest.

- Heart Attack
- Heart Failure.
- Cardiac Rehab.
- Heart Valve Problems and Disease
- Cardiomyopathy in Adults
- High Blood Pressure
- Cardiovascular Conditions of Childhood.
- Metabolic Syndrome
- Cholesterol.
- Peripheral Artery Disease (PAD)
- Congenital Heart Defects

Treatment-

- Ablation
- Angioplasty & Stenting
- Cardiac Rehabilitation
- Coronary Artery Bypass Grafting
- Heart Transplant
- Heart Valve Repair
- Heart Valve Replacement
- Implantable Defibrillator
- Pacemakers
- Patent Foramen Ovale Repair
- Ventricular Assist Device

2.6.3 Orthopaedics

Definition- The branch of medicine that deals with the prevention or correction of injuries or disorders of the skeletal system and associated muscles, joints, and ligaments.

*Conditions*²⁶- Following conditions are treated under orthopedics-

- Achilles Tendinitis
- ACL Injuries
- Arthritis of the Foot & Ankle
- Arthritis of the Hand
- Arthritis of the Hip
- Arthritis of the Knee
- Bunions
- Bursitis/Rotator Cuff Tendinitis
- Carpal Tunnel Syndrome
- Cartilage Injuries – Meniscal Tear
- Chronic Shoulder pain
- Dupuytren's Contracture and Injection Treatment
- Ganglion Cysts
- Hammer Toes
- Hip Bursitis
- Hip Fracture
- Hip Impingement
- Hip Replacement Surgery
- Knee Replacement Surgery
- Labral Tear of the Shoulder
- MCL Injuries
- Morton's Neuroma
- Osteonecrosis
- Osteoporosis
- PCL Injuries
- Plantar Fasciitis
- Posterior Impingement of

Treatment²⁷

- Arthroscopy
- Articular Cartilage Restoration
- Bone and Tissue Transplantation
- Bone Sarcoma in the Upper Extremity: Treatment Options Using Limb Salvage or Amputation
- Elbow Arthroscopy
- Shoulder Arthroscopy
- Shoulder Surgery
- Replantation
- Wrist Arthroscopy
- Hip Arthroscopy
- Knee Arthroscopy
- Meniscal Transplant Surgery
- Osteotomy of the Knee
- Viscosupplementation Treatment for Arthritis
- Bunion Surgery
- Orthotics
- Anterior Lumbar Interbody Fusion
- Artificial Disk Replacement in the Lumbar Spine
- Bone Grafts in Spine Surgery
- Cervical Radiculopathy
- Cervical Spondylotic Myelopathy

- Lateral Lumbar Interbody Fusion
- Minimally Invasive Spine Surgery

2.6.4 Neurosurgery

Definition -Neurosurgery (or neurological surgery) is the medical specialty concerned with the prevention, diagnosis, treatment, and rehabilitation of disorders which affect any portion of the nervous system including the brain, spinal cord, peripheral nerves, and extra-cranial cerebrovascular system.²⁸

Condition- Following are the conditions treated under Neurosurgery-

- Meningitis and other central nervous system infections including abscesses
- Spinal disc herniation
- Cervical spinal stenosis and Lumbar spinal stenosis
- Hydrocephalus
- Head trauma (brain hemorrhages, skull fractures, etc.)
- Spinal cord trauma
- Traumatic injuries of peripheral nerves
- Tumors of the spine, spinal cord and peripheral nerves
- Intracerebral hemorrhage, such as subarachnoid hemorrhage, interdepartmental, and intracellular hemorrhages
- Some forms of drug-resistant epilepsy
- Some forms of movement disorders (advanced Parkinson's disease, chorea) – this involves the use of specially developed minimally invasive stereotactic techniques

(functional, stereotactic neurosurgery) such as ablative surgery and deep brain stimulation surgery

- Intractable pain of cancer or trauma patients and cranial/peripheral nerve pain
- Some forms of intractable psychiatric disorders
- Vascular malformations (i.e., arteriovenous malformations, venous angiomas, cavernous angiomas, capillary telangectasias) of the brain and spinal cord
- Moyamoya disease

*Treatment*²⁹

For a satisfactory neurosurgery outcome a reasonable pre-operative diagnosis is essential. Neuroradiology plays a key role not only in diagnosis but also in the operative phase of neurosurgery.

Neuroradiology methods are used in modern neurosurgery diagnosis and treatment. They include computer assisted imaging computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET), magnetron cephalography (MEG), and the stereotactic radiosurgery. Some neurosurgery procedures involve the use of intra-operative MRI and functional MRI.

In *conventional open surgery* the neurosurgeon opens the skull, uses a large opening to access the brain. Technique of using smaller openings and using microscopes and endoscopes were developed later. With this smaller openings and high clarity microscopic visualization of neural tissue excellent results can be obtained. But, the open methods are still used in trauma or emergency situations^[10] *Principles of Neurosurgery-Rengachari, Ellenbogen*,^[11]

Neurotrauma and Critical Care of the Brain-Jallo, Loftus ,

Microsurgery is utilized in many aspects of neurological surgery. Microvascular techniques are used in EC-IC by-pass surgery and in restoration carotid endarterectomy. The clipping of an aneurysm is performed under microscopic vision. Minimally invasive spine surgery utilizes microscopes or endoscopes. Procedures such as microdiscectomy, laminectomy, and artificial disc replacement rely on microsurgery.^[5]

Using *Stereotaxy* neurosurgeons can approach a minute target in the brain through a minimal opening. This is used in functional neurosurgery where electrodes are implanted or gene therapy is instituted with high level of accuracy as in the case of Parkinson's disease or Alzheimer's disease. Then in the combination method of open and stereotactic surgery intraventricular hemorrhages could be evacuated successfully.^[6]

Minimally invasive *endoscopic surgery* is utilized by neurosurgeons. Techniques such as endoscopic endonasal surgery are used in pituitary tumors, craniopharyngiomas, chordomas, and the repair of cerebrospinal fluid leaks. Ventricular endoscopy is used in the treatment of intraventricular bleeds, hydrocephalus, colloid cysts and neurocysticercosis. Endonasal endoscopy at times is carried out with neurosurgeons and ENT surgeons as a team.

Repair of craniofacial disorders and disturbance of cerebrospinal fluid circulation is done by neurosurgeons, and at times teaming up with maxillofacial and plastic surgeons. Cranioplasty for craniosynostosis is performed by pediatric neurosurgeons with or without plastic surgeons.

Neurosurgeons are involved in *Stereotactic Radiosurgery* along with Radiation Oncologists in tumor and AVM treatment^[13] *Intracranial Stereotactic Radiosurgery-Lunsford, Sheehan*, ^[14] *Spine Radiosurgery-*

Gerszten, Ryu . Radiosurgical methods such as Gamma knife, Cyberknife and Novalis Shaped Beam Surgery are used.^[7]

Endovascular Neurosurgery utilizes endovascular image guided procedures for the treatment of aneurysms, AVMs, carotid stenosis, strokes, and spinal malformations, and vasospasms. Techniques such as angioplasty, stenting, clot retrieval, embolization, and diagnostic angiography are endovascular procedures.^[8]

A common procedure performed in neurosurgery is the placement of Ventriculo-Peritoneal Shunt (VP Shunt). In pediatric practice this is for congenital hydrocephalus. The commonest indication in adults is Normal Pressure Hydrocephalus (NPH).

Neurosurgery of the spine covers cervical, thoracic and lumbar spine. Some indications for spine surgery are spinal cord compression from trauma, arthritis or spondylosis. In cervical cord compression patients may have gait difficulty, balance issues, numbness and tingling in hands or feet. Spondylosis is spinal disc degeneration and arthritis that compresses the spinal canal resulting in bone spurring and disc herniation. Power drills and special instruments are used to correct any compression to the spinal canal. Disk herniation of spinal vertebral disks is removed by Kerrison pituitary rongeurs. This is called a discectomy. Laminectomy is removing *Lamina* portion of the vertebra of the spine to make room for the compressed nerve tissue. Minimally invasive, radiology assisted spine surgery include vertebroplasty and kyphoplasty where some kinds of spinal fractures are managed

[12] *Essentials of Spinal Cord Injury-Fehlings, Vaccaro, Boakye et al* .

Pain surgery handled by the neurosurgeons include implantation of deep brain stimulators, spinal cord stimulators and pain pumps^[9] *Functional Neurosurgery-Starr, Barbaro, Larson*. Surgery of the

peripheral nervous system includes carpal tunnel decompression and peripheral nerve transposition.

2.6.5 Vascular surgery

Definition -Vascular surgery is the treatment of surgery on diagnosed patients with diseases of the arterial, venous, and lymphatic systems (excluding the intracranial and coronary arteries).³⁰

*Conditions*³¹- Following are conditions treated under Vascular surgery

- Abdominal Aneurysm
- Aortoiliac Disease
- Arm Artery Disease
- Carotid Artery Disease, Stroke, Transient Ischemic Attacks (TIAs)
- Claudication
- Deep Vein Thrombosis
- Diabetic Problems
- Hyperlipidemia
- Lymphedema
- Mesenteric Ischemia
- Peripheral Aneurysm
- Peripheral Arterial Disease
- Pulmonary Embolism
- Renovascular Conditions
- Thoracic Aortic Aneurysm

- Thoracic Outlet Syndrome
- Varicose Veins
- Venous Insufficiency

*Treatment*³¹

- Amputation
- Angioplasty Stenting
- Carotid Endarterectomy
- Carotid Stenting
- Dialysis Access
- Endarterectomy
- Endovascular Stent Graft
- Exercise
- Foot Care
- Surgical Aneurysm Repair
- Surgical Bypass
- Thrombolytic Therapy
- Venous Access

2.6.6 Minimal Access surgery

*Definition*³²- Minimal access surgery (minimally invasive surgery) a surgical procedure done in a manner that causes little or no trauma or injury to the patient, such as through a cannula using lasers, endoscopes, or laparoscopes; compared with other procedures, those

in this category involve less bleeding, smaller amounts of anesthesia, less pain, and minimal scarring.

Advantages

There are a number of advantages to the patient with laparoscopic surgery versus an open procedure. These include:^[citation needed]

- Reduced hemorrhaging, which reduces the chance of needing a blood transfusion.
- Smaller incision, which reduces pain and shortens recovery time, as well as resulting in less post-operative scarring.
- Less pain, leading to less pain medication needed.
- Although procedure times are usually slightly longer, hospital stay is less, and often with a same day discharge which leads to a faster return to everyday living.
- Reduced exposure of internal organs to possible external contaminants thereby reduced risk of acquiring infections.

Although laparoscopy in adult age group is widely accepted, their advantage in pediatric age group is questioned. A Benefit of laparoscopy appears to recede with younger age. Efficacy of laparoscopy is inferior to open surgery in certain conditions such as pyloromyotomy for infantile hypertrophic pyloric stenosis. Although laparoscopic appendectomy has lesser wound problems than open surgery, the former is associated with more intra-abdominal abscesses.³³

Disadvantages

While laparoscopic surgery is clearly advantageous in terms of patient outcomes, the procedure is more difficult from the surgeon's perspective when compared to traditional, open surgery:

- The surgeon has limited range of motion at the surgical site resulting in a loss of dexterity.
- Poor depth perception.
- Surgeons must use tools to interact with tissue rather than manipulate it directly with their hands. This results in an inability to accurately judge how much force is being applied to tissue as well as a risk of damaging tissue by applying more force than necessary. This limitation also reduces tactile sensation, making it more difficult for the surgeon to feel tissue (sometimes an important diagnostic tool, such as when palpating for tumors) and making delicate operations such as tying sutures more difficult.³⁴
- The tool endpoints move in the opposite direction to the surgeon's hands due to the pivot point, making laparoscopic surgery a non-intuitive motor skill that is difficult to learn. This is called the Fulcrum effect³⁵
- Some surgeries (carpal tunnel for instance) generally turn out better for the patient when the area can be opened up, allowing the surgeon to see "the whole picture" surrounding physiology, to better address the issue at hand. In this regard, keyhole surgery can be a disadvantage.³

3. Methodology

3.1 Research questions:-

This project was conducted to obtain answers of the following questions-

1. What is the process of discharge advice preparation?
2. What are problems encountered during discharge advice preparation?
3. What are the main components required in discharge advice based on specialty?
4. What is the gap between the current levels of discharge advice with what is required?

3.2 Study design

Study design selected for this project keeping the aims and objectives of the project in mind is as following

- **Type of Study-** Descriptive cross sectional analytical research on the basis of observation, discussions, document research and Primary data collected through auditing, secondary data collected through secondary source.
- **Location of Study-** The project was conducted in Fortis Hospital Bannerghatta, Bangalore

3.3 Sample and Sampling-

- **Study Sample-** The sample for this project will be discharge advice from the patient medical record for the month of March and April.
- **Sampling technique-** Sample was conducted on the basis of Non probability purposive sampling technique.

3.4 Sample Size –

The total sample size for the project was 400 divided among specific specialty as following-

1. For Cardiac vascular thoracic surgery (CVTS) sample size was calculated as 68
2. For Cardiology sample size was calculated as 116
3. For Orthopaedics sample size was calculated as 76
4. For Neurosurgery sample size was calculated as 64
5. For Minimal access surgery (MAS) sample size was calculated as 61
6. For Vascular surgery sample size calculated was as 15

Table 3.1- Sample size

S.No	Specialty	Sample Size
1	CVTS	68
2	Cardiology	116
3	Orthopaedics	76
4	Neurosurgery	64
5	MAS	61
6	Vascular surgery	15

- Sample size was calculated on the basis of total number of speciality wise discharges of selected six specialities in the month of February at 95% confidence level and 5% confidence interval using the sample size calculator.

3.5 Types of Data & Collection Methods-

- ***Time frame for data collection-*** The data was collected from 1st April to 5th May 2015
- ***Type of data*** – Both Quantitative & Qualitative type of data was collected.
- ***Data to be collected-*** Data of Compliance and Non Compliance level in patient discharge advice in the medical records of month of March and April.
- ***Methods of data collection-***
 - ✓ Observations of Discharge advice preparation process
 - ✓ Discussions with RMO, ward secretaries, nurses and patients
 - ✓ Literature review related to the discharge advice
 - ✓ Retrospective Audit of discharge summary from the medical records of month of March and April

3.6 Instruments and Tool Used

- ***Data collection tools-*** Discharge Summary Evaluation Instrument (audit tool) was developed to collect data. The Collected data was then recorded in pre-designed tabulated excel sheet.

- **Scoring Criteria-** Scoring was done out of 10. Whenever the compliance was complete i.e. all the desirable elements of the component is present 10 scores was allotted .But if the compliance is partial 5 was allotted and whenever the component was not applicable NA was written. Even if in advice, component was mentioned but none of the element was written 0 score was allotted e.g. if in advice ‘ wound care as advised’ was written 0 score was given as it doesn’t provides any information how the wound care should be taken.

3.7 Data Analysis-

- Data analysis was done by using Microsoft office- excels. Statistical measures like average and percentage was calculated. Quality tools like process flow chart and root cause analysis was also used
- Average of Percentage of level of compliance and Non Compliance was collected for each specialty. Calculated b y using the formula

$$\text{Total score obtained by a specialty} / \text{Maximum score can be obtained} * 100$$
- Percentage of compliance and non compliance was calculated for each component of audit tool.
- Percentage of compliance was calculated by using following formula-

$$\text{Total Score obtained in a component} / \text{Maximum score can be obtained} * 100$$
- Bar graph was drawn against the percentage of compliance and non compliance and Type of specialty for proper, clear and comparative depiction of compliance level among different specialty for different components of discharge advice.

4. Result

PART-1

4.1 The discharge advice preparation process:-

Based on observation, discussion and document research the discharge advice preparation process is as follow

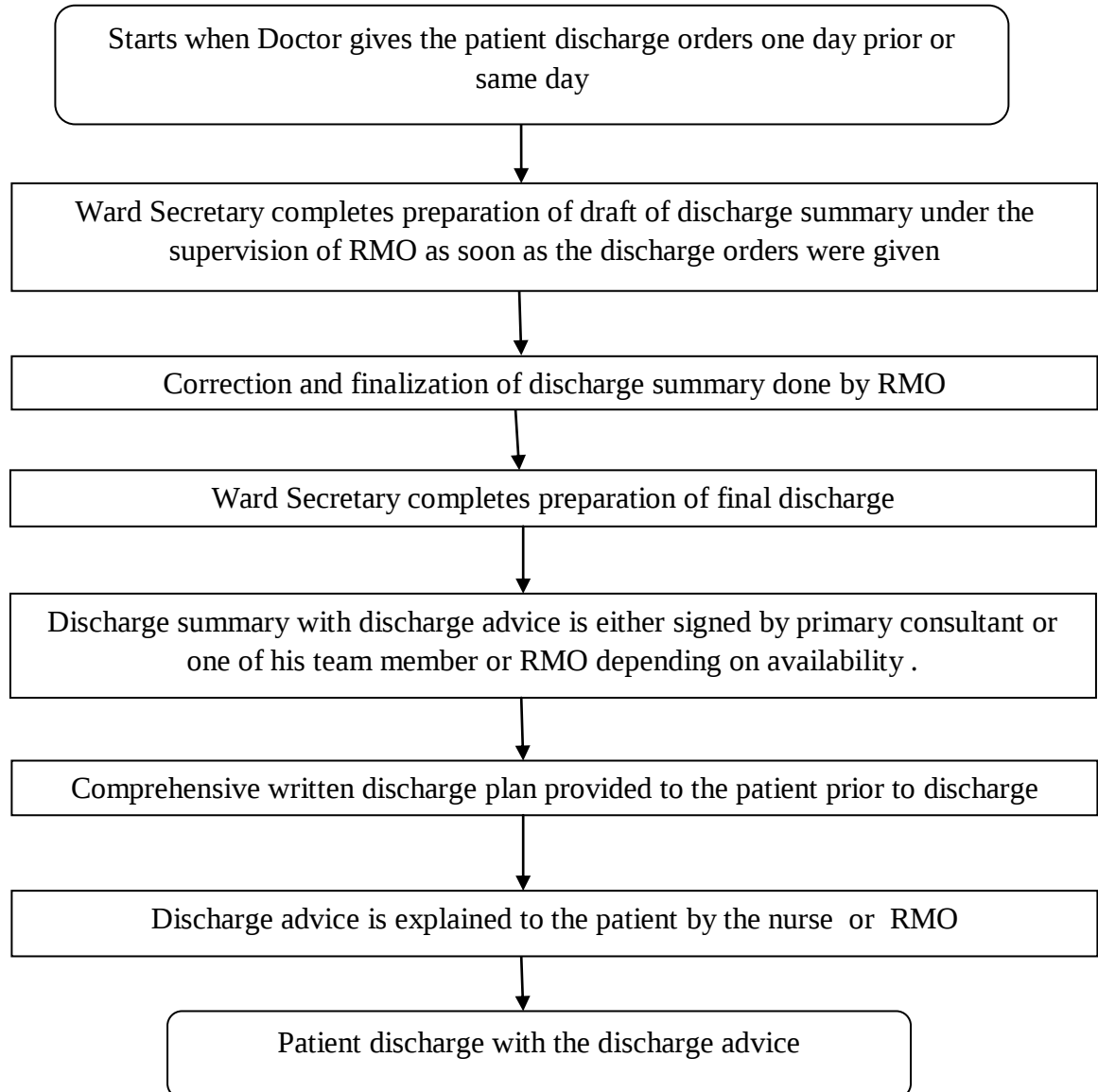


Figure 4.1 Process flow for discharge advice preparation

4.2 Root cause analysis of problems associated with patient discharge advice:-

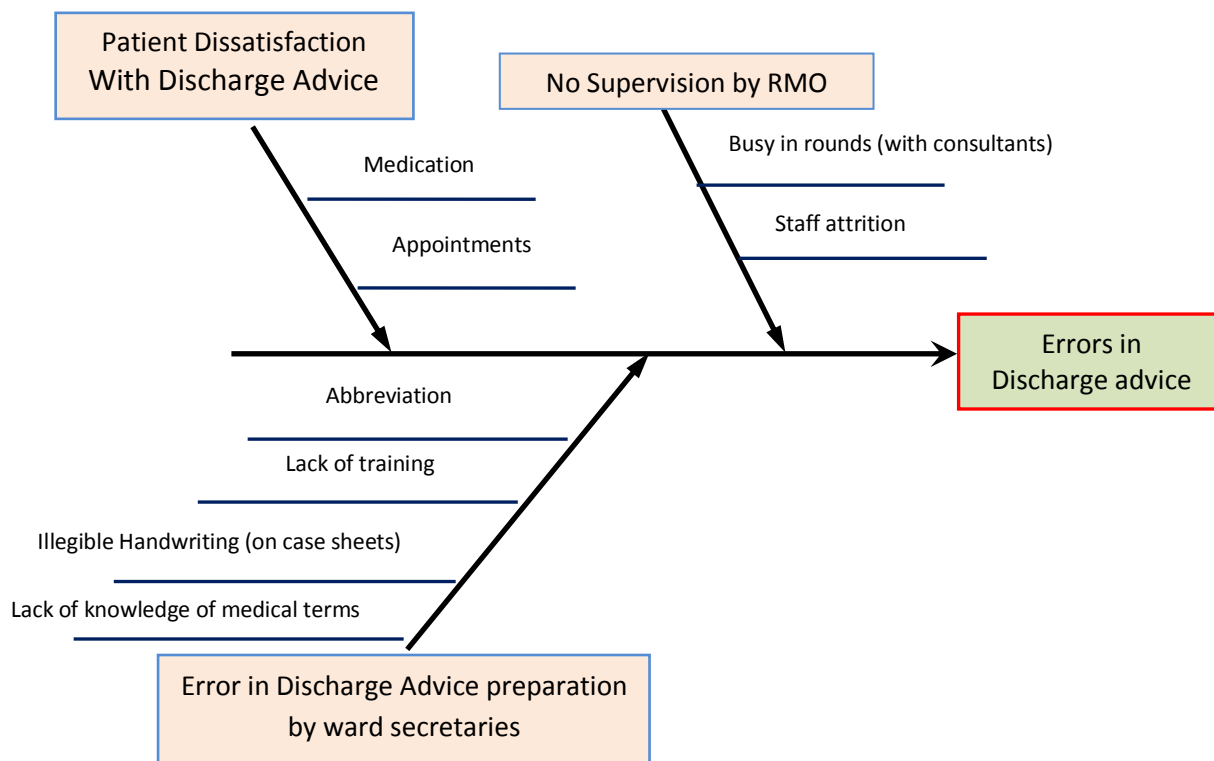


Figure 4.2- Root Cause Analysis for errors in discharge advice

There are reasons responsible for errors or problems encountered in Discharge advice preparation are as following-

1. Sometimes patient do not agree with the medicines advised. The Patient might be on some medication prior to the admission in the hospital and wants to continue the same medicines, instead for the new ones advised or patient is not willing to take some new medicines prescribed. Medications are advised without any discussions and counseling with patients and this ultimately results in patient dissatisfaction or confusion.

2. Follow up appointments advised without any consultations with patient about his convenience and availability.

3. Errors in Discharge advice preparation by ward secretaries because of following reasons-

- They lack in knowledge and training in familiarity with medical term resulting into typing errors or missing some important instructions.
- Use of abbreviations in medical record disrupts clarity of instruction advised and may also lead to situation of ambiguity.
- Illegible notes and medication order in running writing also creates lots of confusions.
- Many a times no separate discharge notes are written about instructions and medications advised which may result into missing some advised medicines and addition of medicines which may not be prescribed at the time of discharge.

4. Due to busy schedule Duty Doctors or RMO sometimes don't supervise the process of discharge advice preparation. They may be busy with consultant on rounds or work load do not permit them to perform supervision and checking of discharge advised given to the patient . It was also observed that sometimes RMO themselves were not aware about patient condition properly.

4.3 Components to be included in patient discharge advice:

After discussions with concerned staff, observation and literature review important components of patient discharge advice as understood are as following-

- A list of medications the patient is being discharged with, including the dosage, frequency, duration and how to take the medicines.
- A list of test results still pending and date of report collection.
- A list of tests needed after discharge, such as a repeat chest x ray and the duration after which they need to be done.
- Patient's discharge instructions - such as activity level, diet, restrictions on bathing, wound care, as well as when the patient can return to work or school, or resume driving
- Patient's discharge instructions on diet to be followed.
- Follow-up appointment information including date, time, site information, Doctor's name specialty and reason for appointment.
- The plan for outpatient treatment, such as home intravenous antibiotics or parenteral nutrition.
- When urgent care is required i.e. signs of infection or worsening condition, such as pain, fever, bleeding, difficulty breathing, or vomiting with number to be contacted and place to be visited for treatment and advice.
- All the above mentioned information should be in simple and easy language in accordance to the literacy level of the patient

4.4 Audit tool

An audit tool was developed for discharge advice evaluation. It was developed based on the literature review and discussion with quality head of the unit. It consists of 13 components.(refer to Annexure A)

4.5 Evaluation and compliance level assessment of the discharge advice

4.5.1 Specialty wise compliance level is as follow-

Table 4.1- Average compliance level for specialty

	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	51%	62%	67%	63%	60%	57%
Non Compliance	49%	38%	33%	37%	40%	43%

The CVTS is the specialty with lowest compliance with 51% of compliance level where as Orthopaedics compliance level is the highest with 67% among all the six selected specialty for the study.

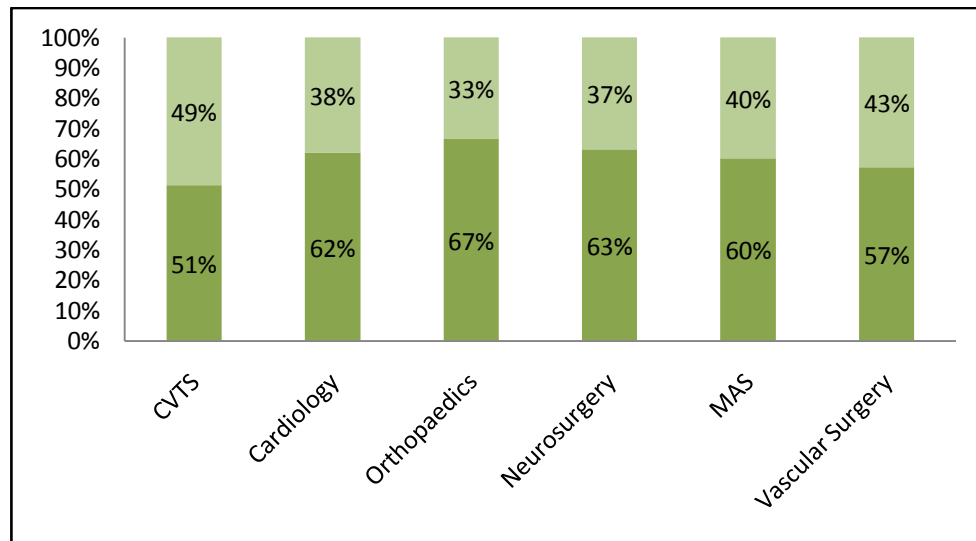


Figure 4.3-Specialty wise percentage of level of compliance and noncompliance for
Discharge Advice

4.5.2 Elements of Non-Compliance:-

Few commonly missing elements and errors were identified in discharge advice components in the entire six specialties which are as following. Their frequency of non compliance was different for different specialty.

Table 4.2- Element of Non Compliance

Component	Element of Non Compliance
Emergency instructions	Emergency contact Number, Site Information, Emergency Conditions, Use Of Medical Term
Follow up appointments	Time, Date, Site information
Prescribed Medication	Medication Missed, Referral Dr Medication Missed, Inclusion of few non prescribed drugs
Medication dosage and time	Missed-Dosage ,Frequency, Duration or Typing error in Dosage ,Frequency, Duration

4.5.3 Discharge advice component wise compliance level is as following:-

1. Specialty wise percentage of compliance level for emergency instructions

Table 4.3- Compliance level for emergency instructions

Instructions for when and how emergency or urgent care to be obtained are documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	48%	81%	49%	48%	48%	47%
No Compliance	52%	19%	51%	52%	52%	53%

The Vascular surgery is the specialty with lowest compliance with 47% of compliance level where as Cardiology compliance level is the highest with 81% among all the six selected specialty for Emergency instruction .

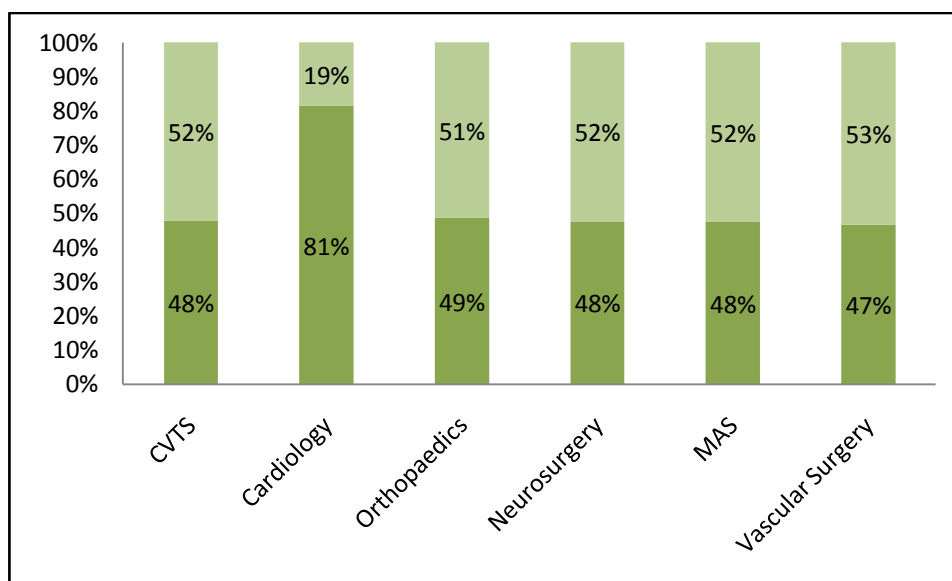


Figure 4.4- Specialty wise percentage of level of compliance and noncompliance for emergency instructions

2. Specialty wise percentage of compliance level for wound care

Table 4.4- Compliance level for wound care

Instruction regarding wound care is documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	2%	-	91%	77%	7%	23%
Non Compliance	98%	-	9%	23%	93%	77%

The CVTS is the specialty with lowest compliance with 2% of compliance level where as Orthopaedics compliance level is the highest with 91% among all the six selected specialty for Wound care instruction .

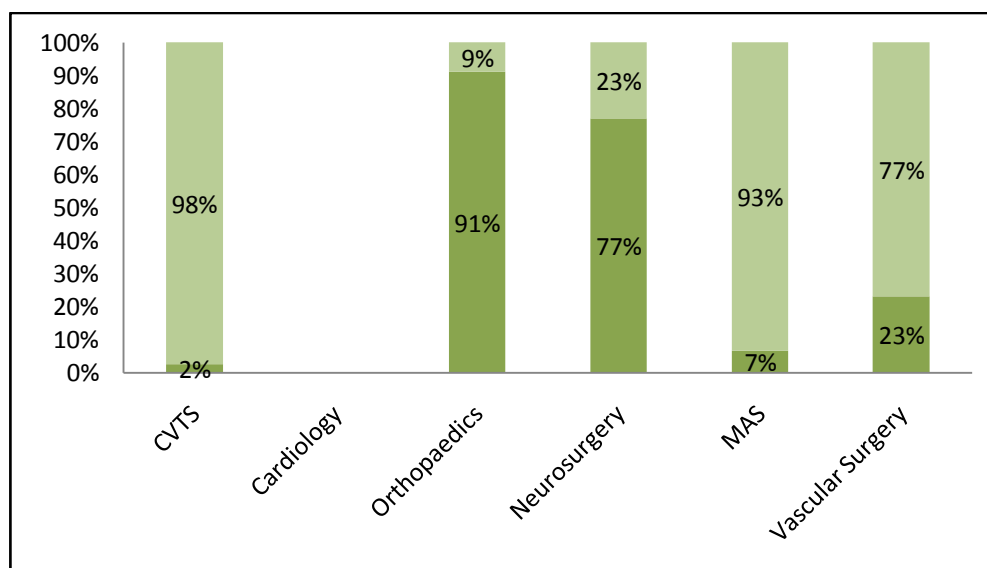


Figure 4.5- Specialty wise percentage of level of compliance and non compliance for wound care

3. Specialty wise percentage of compliance level for appointment information

Table 4.5- Compliance level for appointment information

Follow up appointments information is documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	54%	57%	90%	65%	66%	53%
Non Compliance	46%	43%	10%	35%	34%	47%

The Vascular surgery is the specialty with lowest compliance with 53% of compliance level where as Orthopaedics compliance level is the highest with 90% among all the six selected specialty for Appointment information instruction .

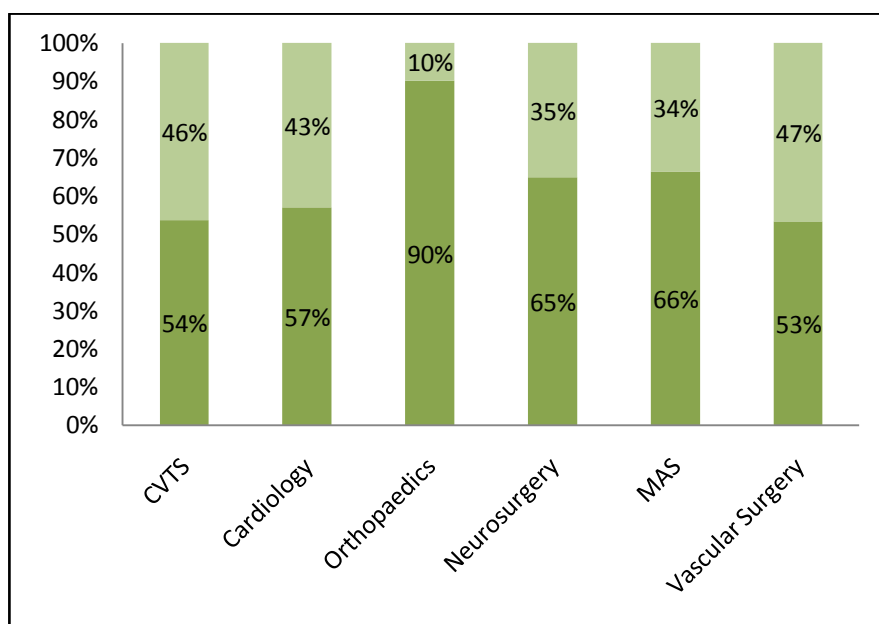


Figure 4.6- Specialty wise percentage of level of compliance and non compliance for appointment information

4. Specialty wise percentage of compliance level for medication advice

Table 4.6- Compliance level for medication advice

Medication prescribed by Doctors are clearly documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	94%	97%	98%	98%	94%	100%
Non Compliance	6%	3%	2%	2%	6%	0%

The MAS and CVTS is the specialty with lowest compliance with 94% of compliance level where as Vascular surgery compliance level is the highest with 100 % among all the six selected specialty for Medication advice.

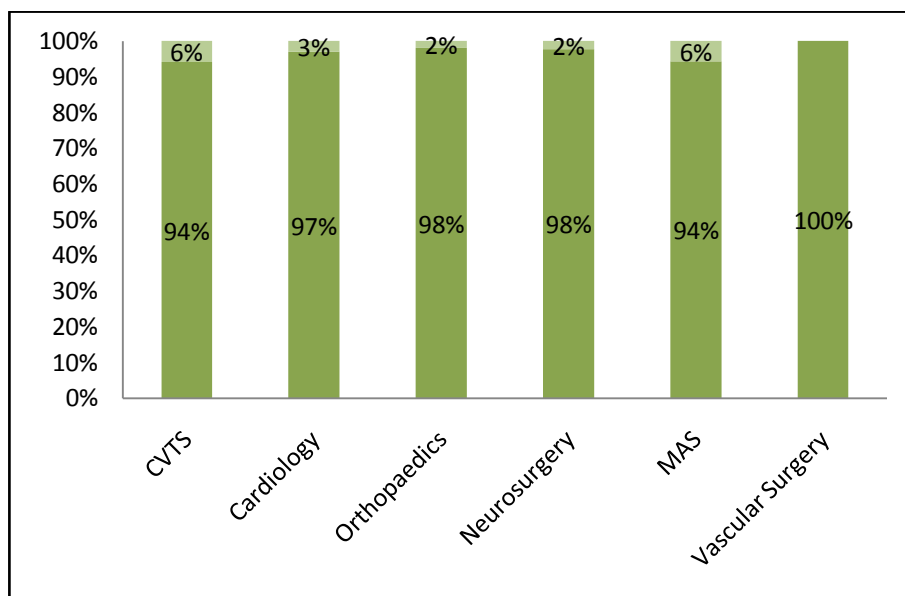


Figure 4.7- Specialty wise percentage of level of compliance and non compliance for medication advice

5. Specialty wise percentage of level of compliance for medication dose and time

Table 4.7- Compliance level for medication dose and time

Proper dose and time for medicines provided	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	60%	62%	55%	71%	65%	87%
Non Compliance	40%	38%	45%	29%	35%	13%

The Orthopaedics is the specialty with lowest compliance with 55% of compliance level where as Vascular surgery compliance level is the highest with 87% among all the six selected specialty for Medication dose and time instruction.

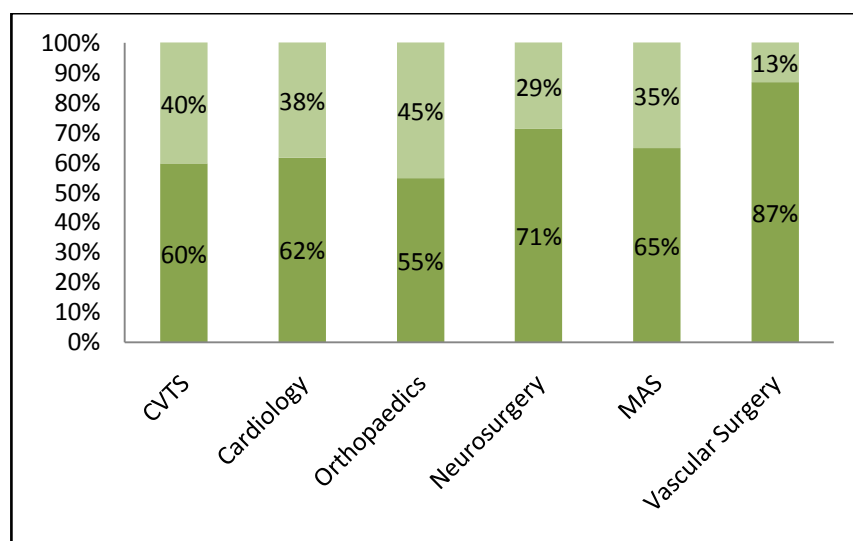


Figure 4.8. Specialty wise percentage of level of compliance and non compliance for medication dose and time

6. Specialty wise percentage of level of compliance of special for medication instructions (related food)

Table 4.8- Compliance level of special for medication instructions (related food)

Special Instructions on before and after food drugs are provided	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	84%	73%	91%	93%	95%	83%
Non Compliance	16%	27%	9%	7%	5%	17%

The Cardiology is the specialty with lowest compliance with 73% of compliance level where as MAS compliance level is the highest with 95% among all the six selected specialty for Medication advice (related food) instructions.

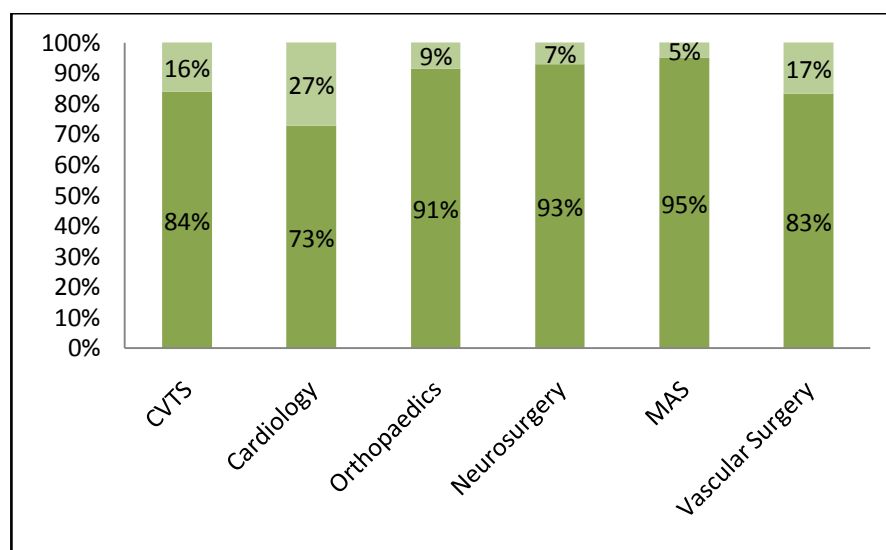


Figure 4.9 Specialty percentage of wise level of compliance and non compliance for special medication instructions (related food)

7. Specialty wise percentage of level of compliance for follow up physiotherapy advice

Table 4.9- Compliance level for follow up physiotherapy advice

Follow up physiotherapy advice is documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	0%	-	8%	0%	50%	-
Non Compliance	100%	-	92%	100%	50%	-

The CVTS and Neurosurgery are the specialty with lowest compliance with 0% of compliance level where as MAS compliance level is the highest with 50% among all the six selected specialty for follow up physiotherapy advice instructions.

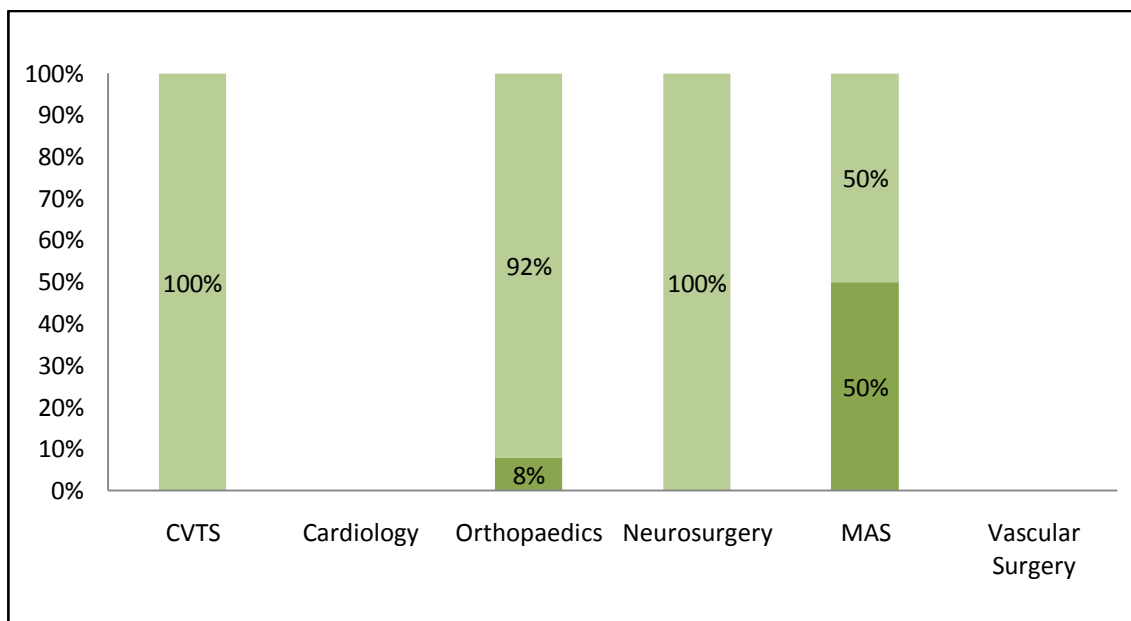


Figure 4.10. Specialty wise percentage of level of compliance and non compliance for follow up physiotherapy advice

8. Specialty wise percentage of level of compliance for follow up test

Table 4.10- Compliance level for follow up test

Proper instructions on follow up tests (wherever required) are clearly mentioned in the discharge advice	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	100%	83%	100%	85%	100%	100%
Non Compliance	0%	17%	0%	15%	0%	0%

The CVTS , Orthopaedics, MAS, Vascular Surgery are the specialty with full compliance with 100% of compliance level where as Cardiology compliance level is the lowest with 83% among all the six selected specialty for follow up test instructions.

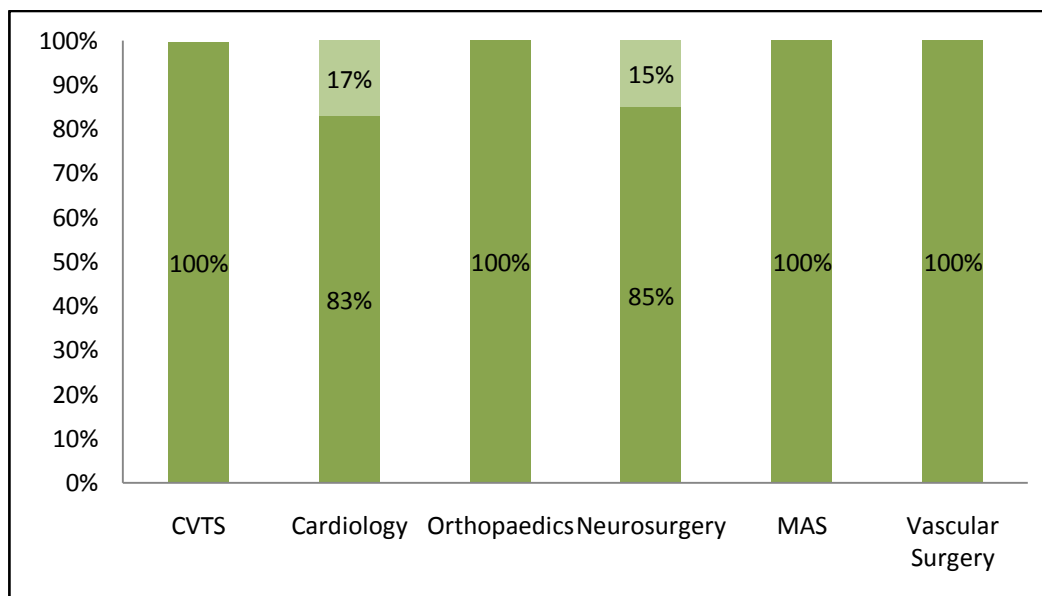


Figure 4.11- Specialty percentage of wise level of compliance and non compliance for follow up test

9. Specialty wise percentage of level of compliance for diet instructions

Table 4.11- Compliance level for diet instructions

Instructions regarding diet to be followed are clearly mentioned.	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance.	30%	8%	18%	29%	37%	0%
Non Compliance	70%	92%	82%	71%	63%	100%

The Vascular surgery is the specialty with lowest compliance with 0% of compliance level where as MAS compliance level is the highest with 37% among all the six selected specialty for diet instructions.

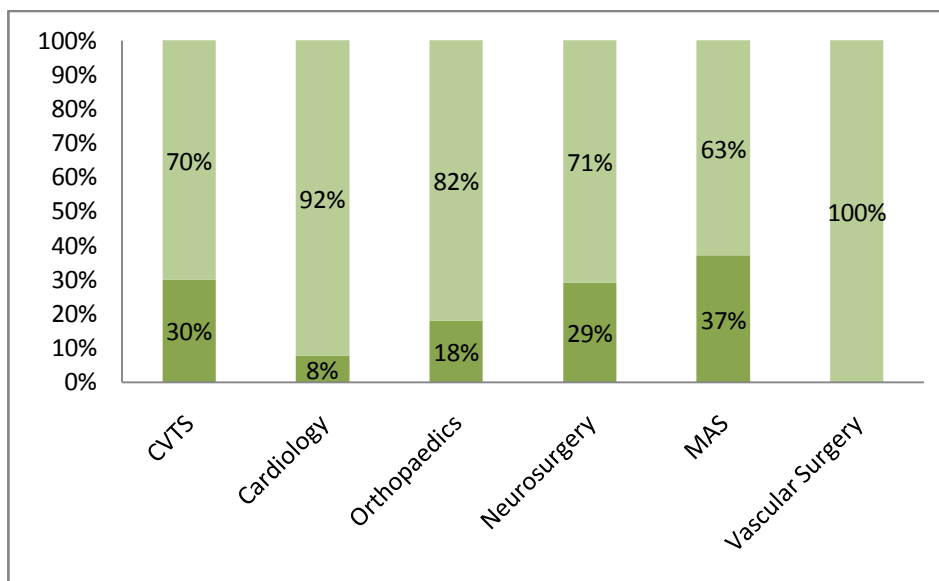


Figure 4.12. Specialty percentage of wise level of compliance and non compliance for diet instructions

10. Specialty wise percentage of level of compliance for no use of abbreviation

Table 4.12- Compliance level for no use of abbreviation

Discharge advice do not contain any abbreviations	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	94%	97%	97%	94%	97%	47%
Non Compliance	6%	3%	3%	6%	3%	53%

The Vascular surgery is the specialty with lowest compliance with 47% of compliance level where as MAS, Cardiology and Orthopaedics compliance level is the highest with 97% among all the six selected specialty for no use of abbreviation.

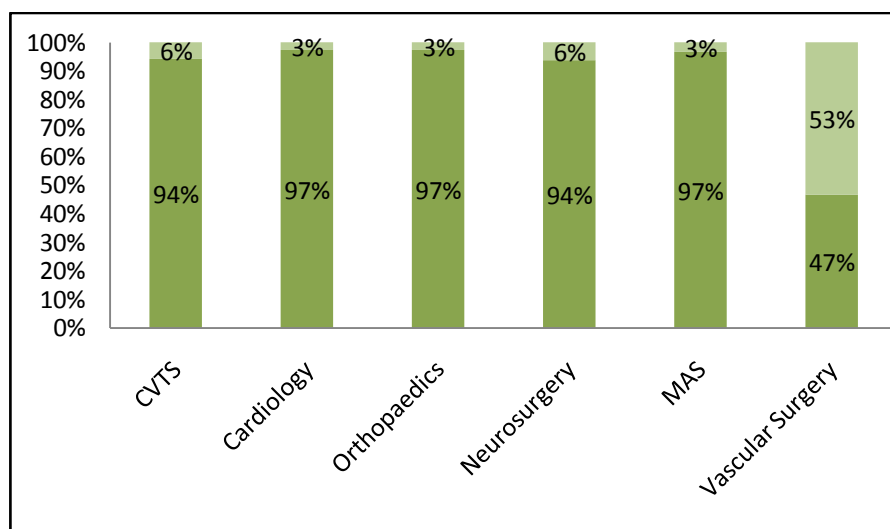


Figure 4.13- Specialty wise percentage of level of compliance and non compliance for no use of abbreviation

11. Specialty wise percentage of level of compliance for care at home

Table 4.13- Compliance level for care at home

Special Instructions on care at home is documented	<i>CVTS</i>	<i>Cardiology</i>	<i>Orthopaedics</i>	<i>Neurosurgery</i>	<i>MAS</i>	<i>Vascular Surgery</i>
Compliance	13%	6%	54%	59%	16%	20%
Non Compliance	87%	94%	46%	41%	84%	80%

The Cardiology is the specialty with lowest compliance with 6% of compliance level where as Neurosurgery compliance level is the highest with 59% among all the six selected specialty for no use of abbreviation.

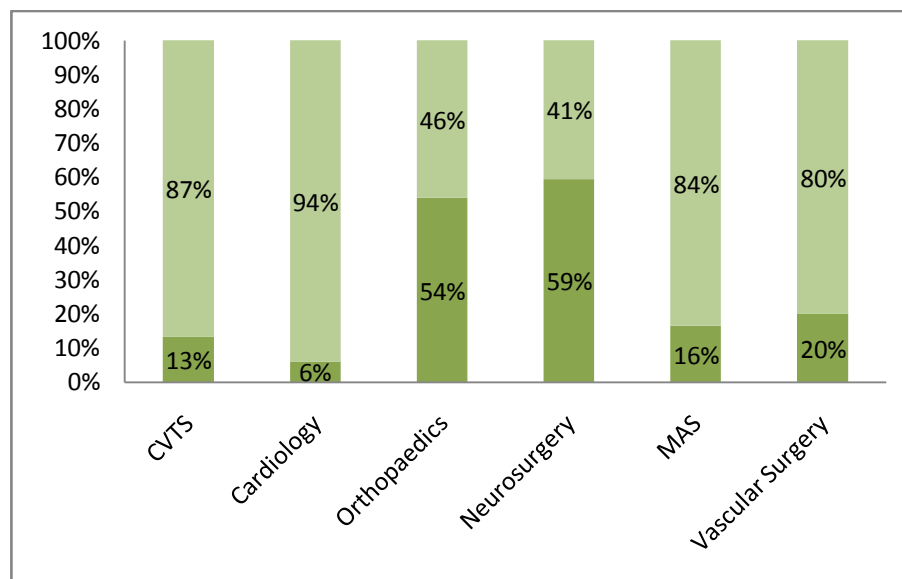


Figure 4.14- Specialty percentage of wise level of compliance and non compliance for care at home

12. Specialty wise percentage of level of compliance for primary consultant signature on discharge summary

Table 4.14- Compliance level for primary consultant signature on discharge summary

Discharge summary is duly signed by Primary consultant	CVTS	Cardiology	Orthopedics	Neurosurgery	MAS	Vascular Surgery
Compliance	3%	32%	22%	17%	23%	27%
Non Compliance	97%	68%	78%	83%	77%	73%

The CVTS is the specialty with lowest compliance with 3% of compliance level where as Cardiology compliance level is the highest with 32% among all the six selected specialty for primary consultant signature on discharge summary

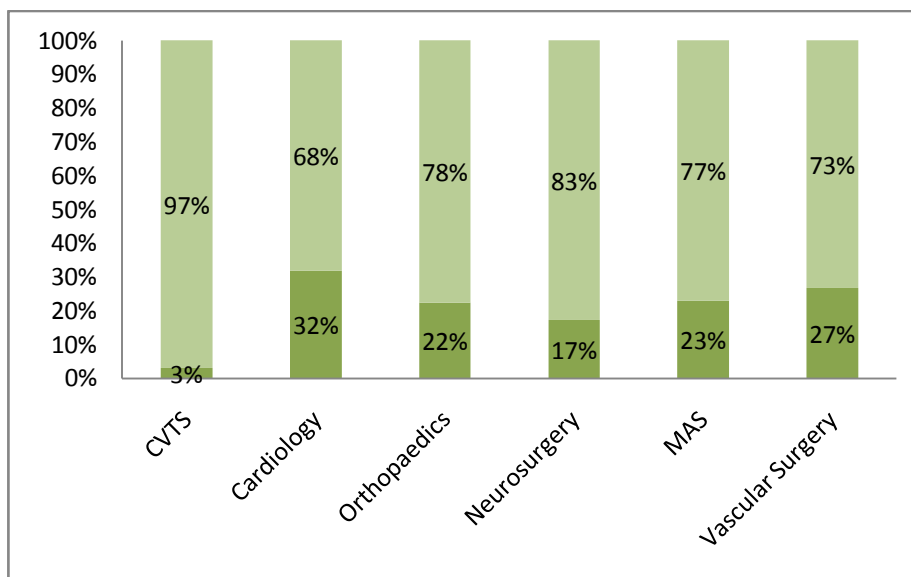


Figure 4.15- Specialty percentage of wise level of compliance and non compliance for primary consultant signature on discharge summary

13. Specialty wise percentage of level of compliance for discharge summary acknowledgement by patient/patient relative

Table 4.15- Compliance level for discharge summary acknowledgement by patient/patient relative

Acknowledgement of discharge summary by patient/patient representative	CVTS	Cardiology	Orthopedics	Neurosurgery	MAS	Vascular Surgery
Compliance	84%	85%	92%	84%	85%	100%
Non Compliance	16%	15%	8%	16%	15%	0%

The CVTS and Neurosurgery is the specialty with lowest compliance with 84% of compliance level where as Vascular surgery compliance level is full with 100% among all the six selected specialty for discharge summary acknowledgement by patient/patient relative

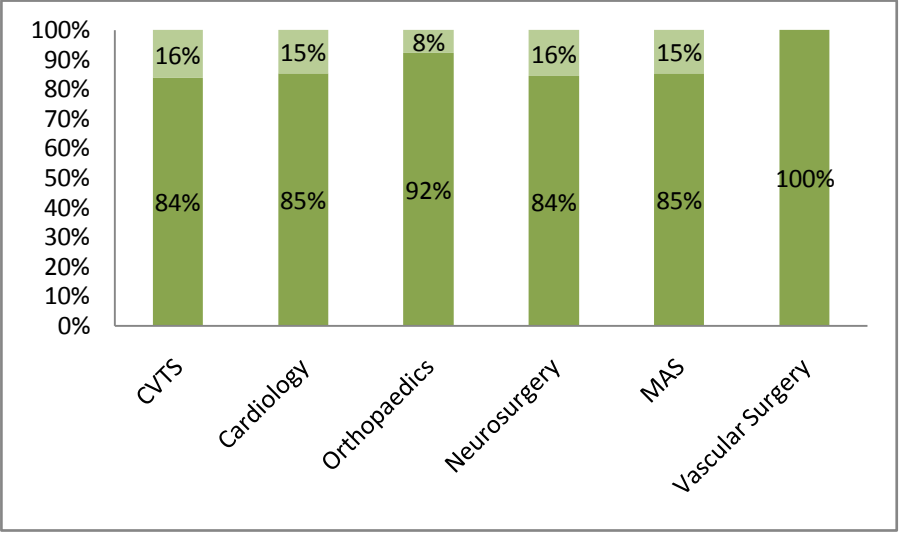


Figure 4.16-Specialty percentage of wise level of compliance and non compliance for discharge summary acknowledgement by patient/patient relative

4.5.4- Discharge advice Component wise Percentage of Compliance level of Specialty

1 .CVTS

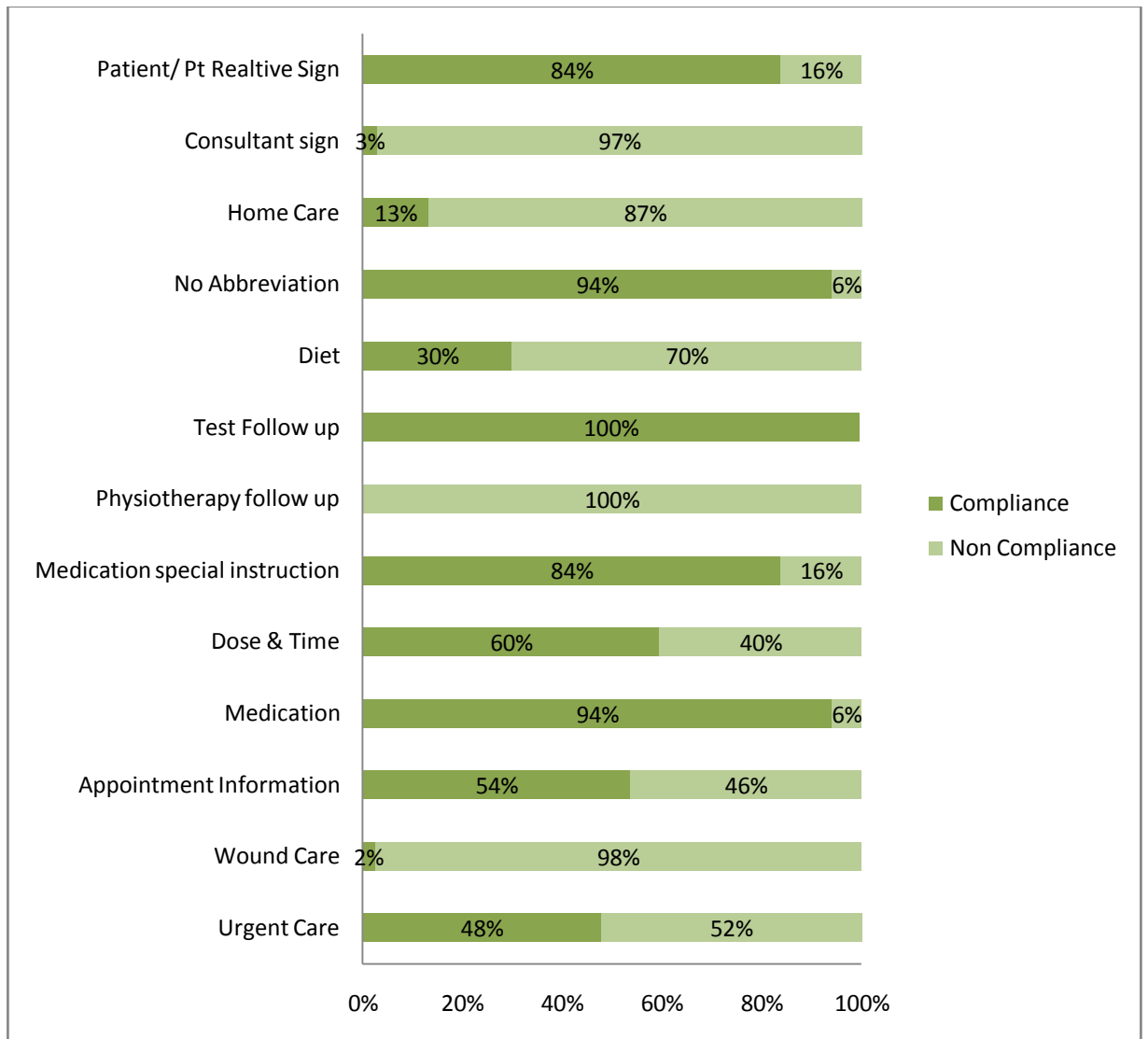


Figure 4.17- Component wise percentage of compliance and non compliance level for
CVTS

2. Cardiology

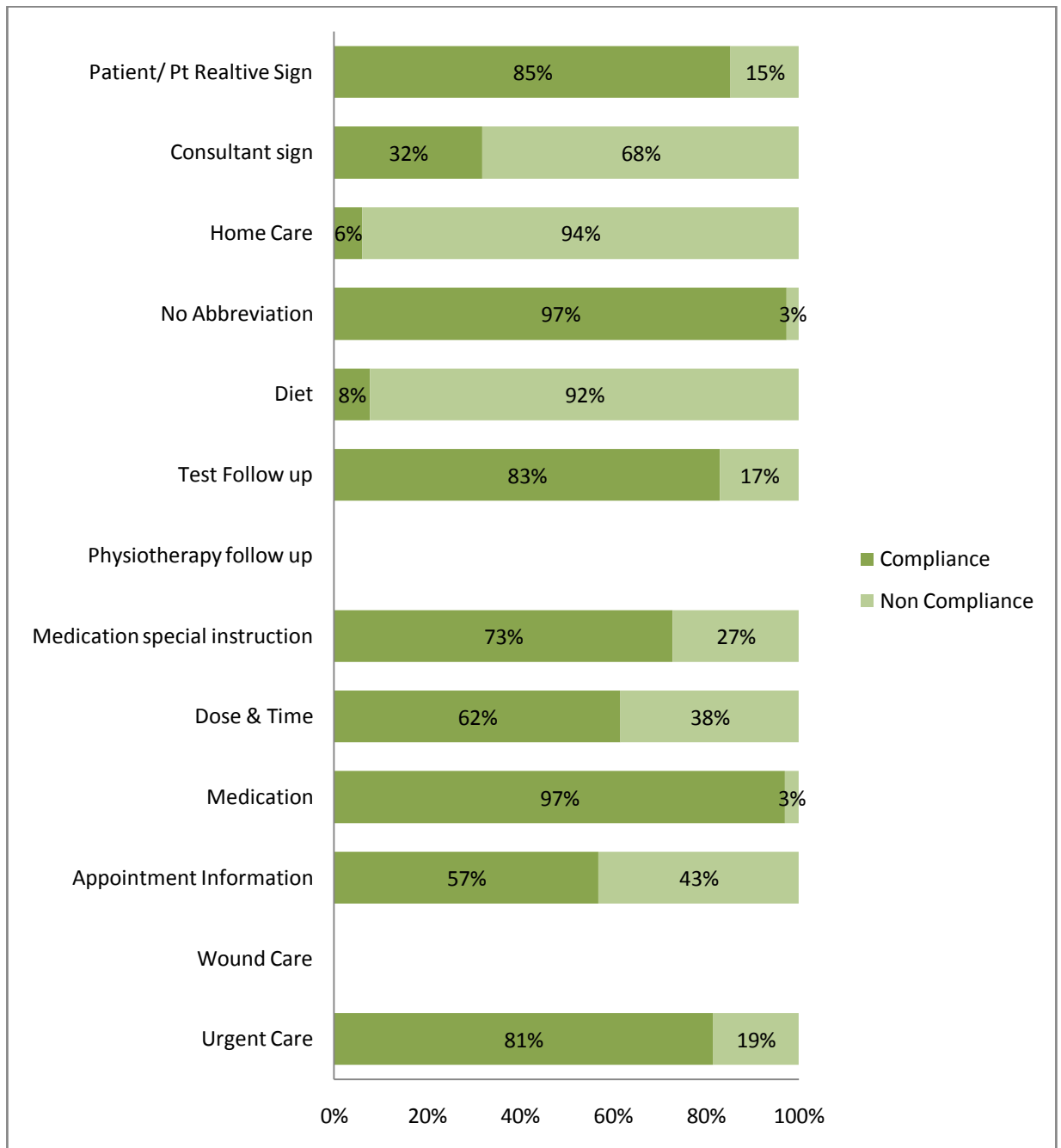


Figure 4.18- Component wise percentage of compliance and non compliance level for
Cardiology

3 .Orthopaedics

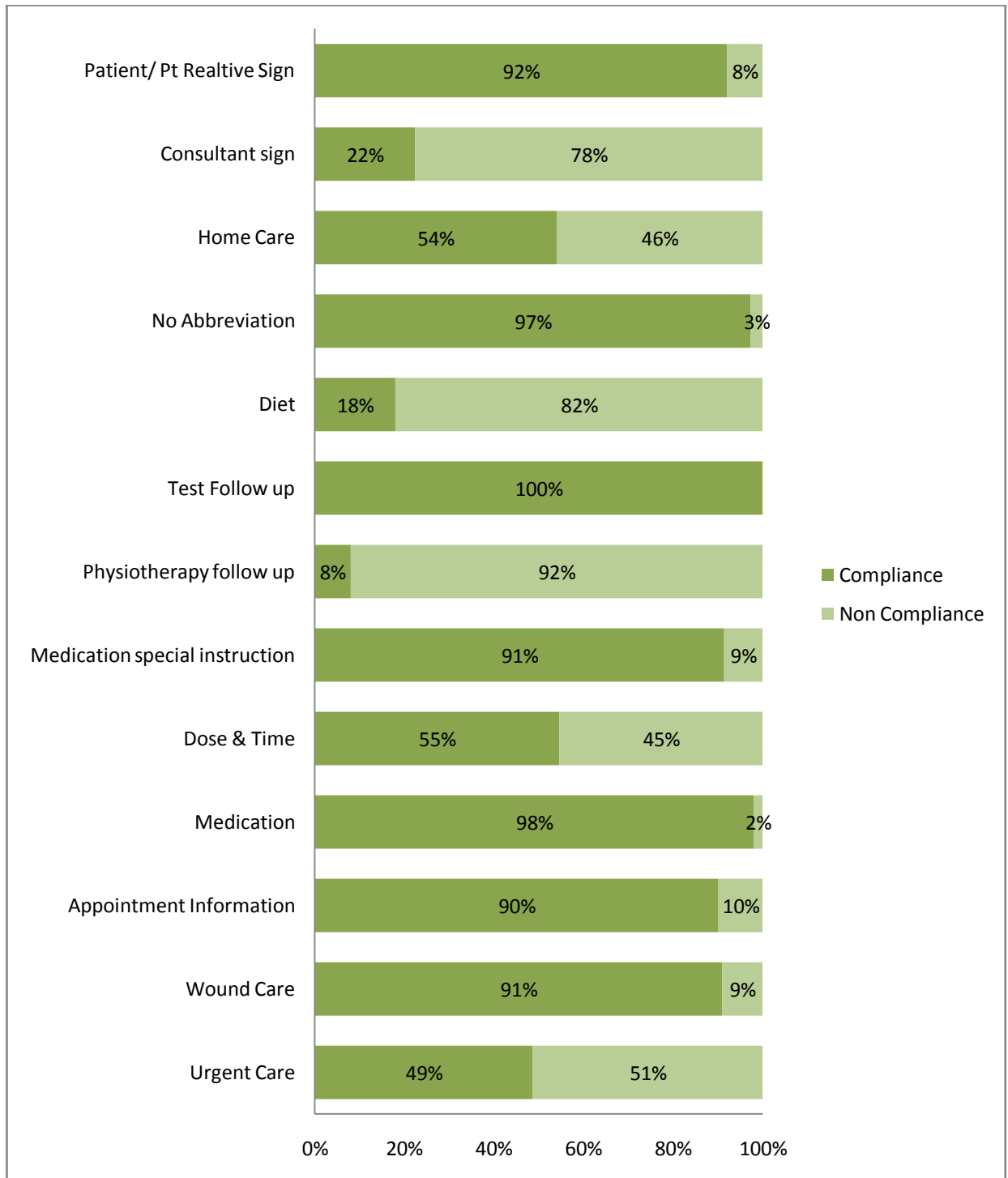


Figure 4.19- Component wise percentage of compliance and non compliance level for Orthopedic

4.Neurosurgery

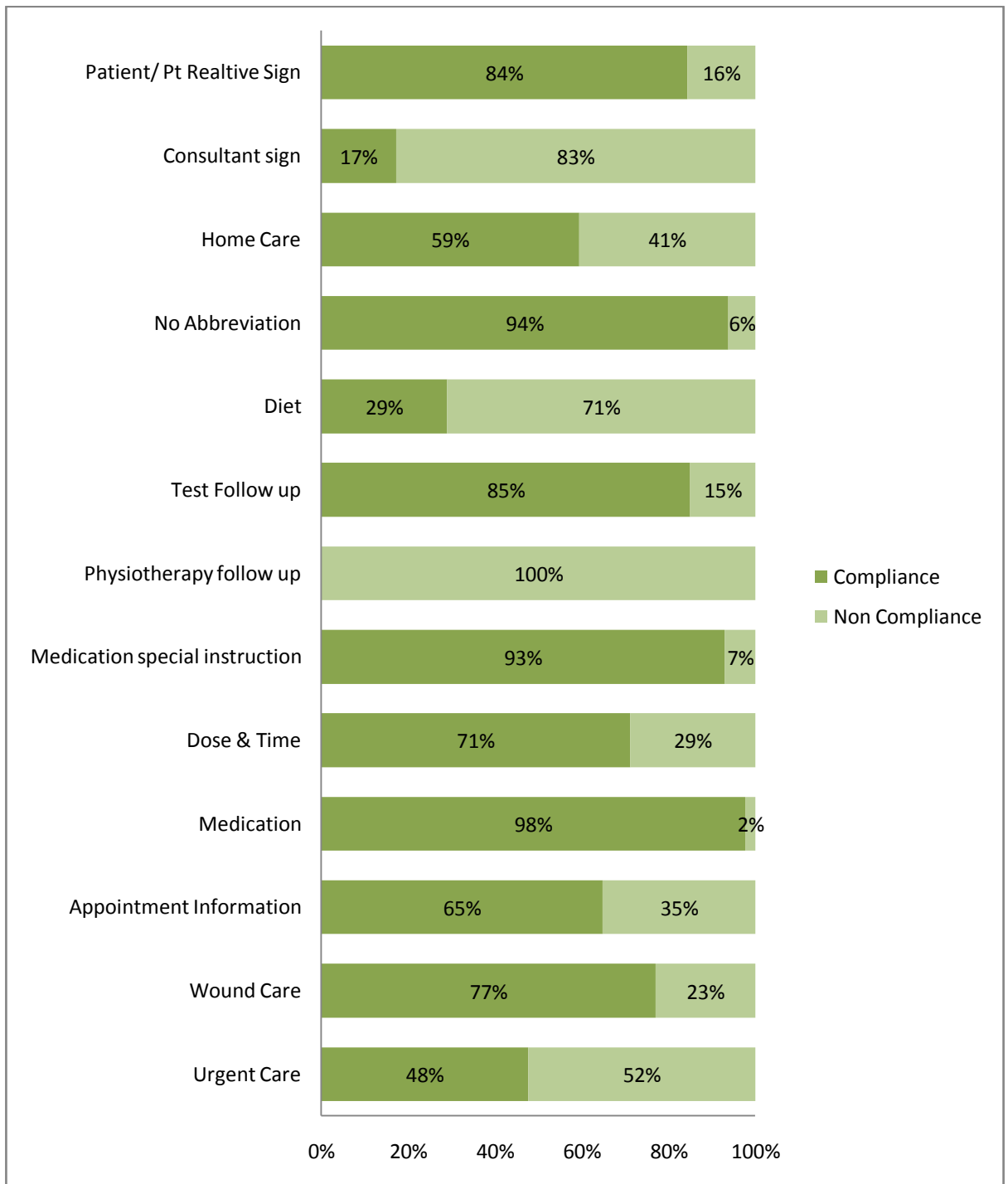


Figure 4.20- Component wise percentage of compliance and non compliance level for
Neurosurgery

5. MAS

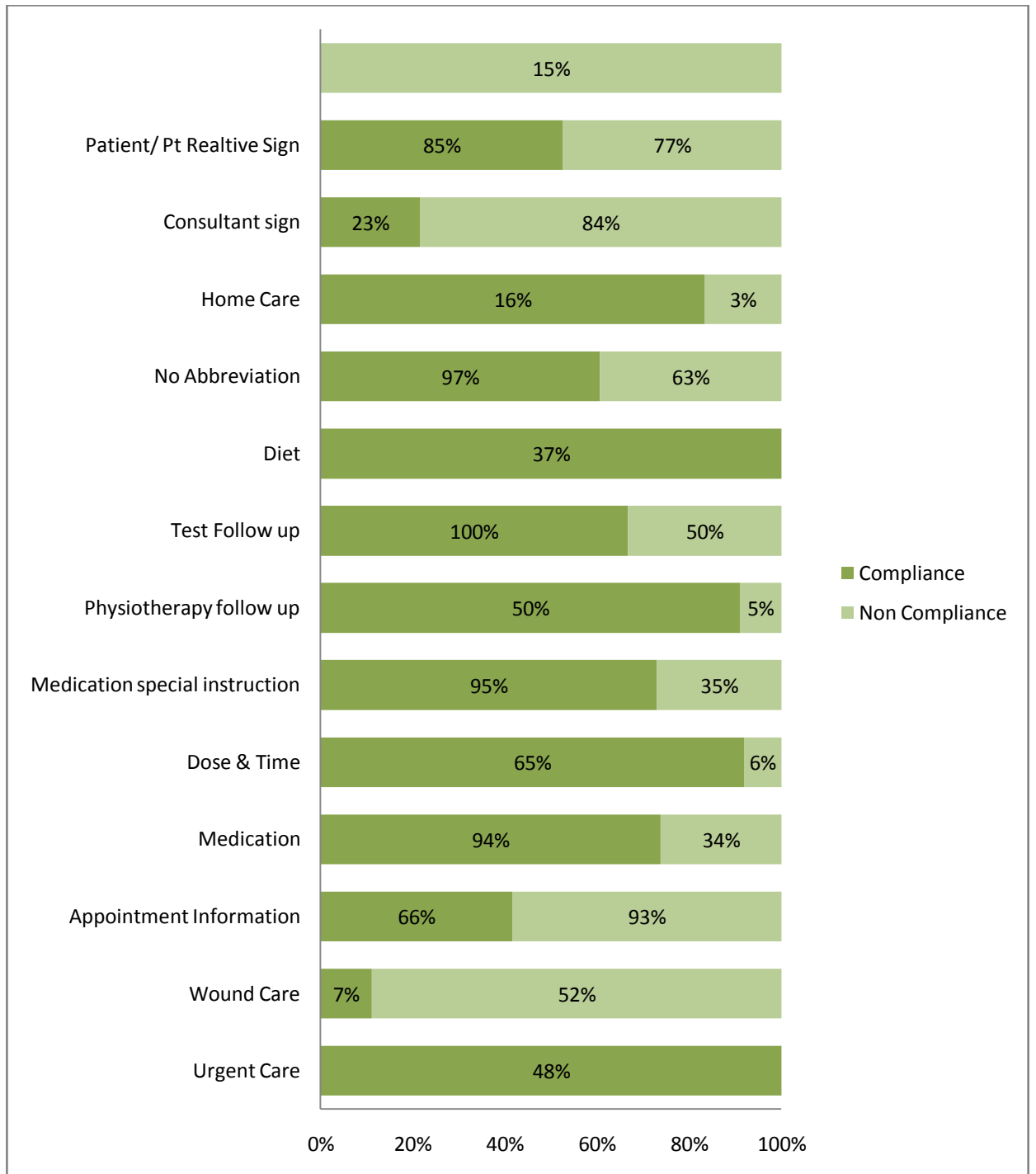


Figure 4.21- Component wise percentage of compliance and non compliance level for
MAS

6 .Vascular surgery

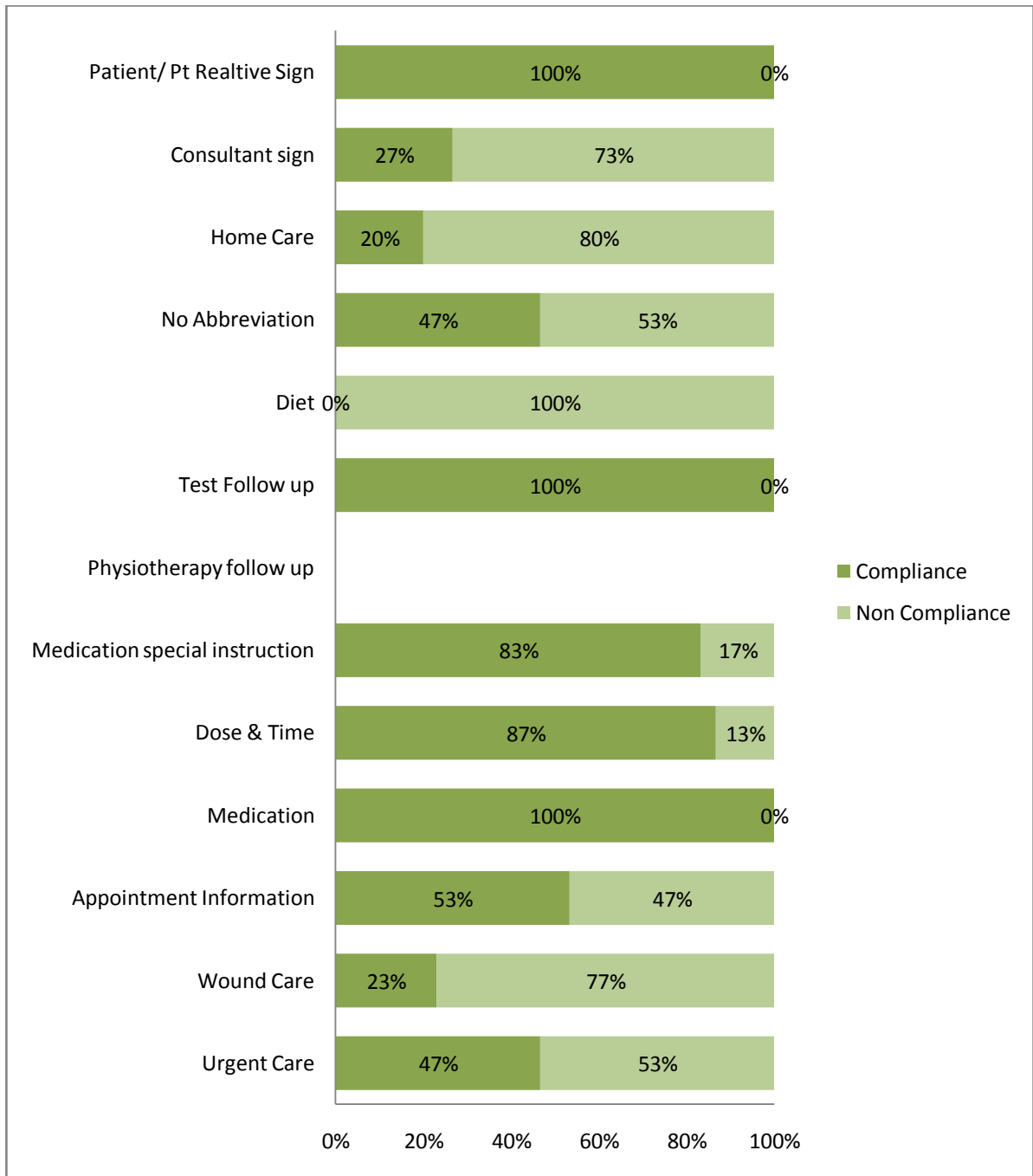


Figure 4.22- Component wise percentage of compliance and non compliance level for
Vascular surgery

PART-2

4.6 Patient discharge advice template:

Based on the findings from observation, discussions, literature review and result of data analysis two discharge advice template were developed according to specialty

- Discharge advice template for surgical specialty (refer to Annexure B)
- Discharge advice template for Non surgical specialty (refer to Annexure C)

4.7 Recommendation

1. Manual use of template developed for discharge advice is suggested to enter all required data.
2. Template developed can be given to IT department and can be integrated with the discharge planning software or with the existing system.
3. Use of IT in Hospital Processes should be encouraged .Proper training and orientation towards all the modules present should be given to the concerned staff.
4. Training module should be developed for the ward secretaries to make them aware about the mandatory components and common medical terms used in the discharge summary and advice.
5. Training and orientation of the Doctors to encourage them to write medication orders in capitals with all the components e.g. dosage, frequency, durations etc

6. Doctors should be encouraged to write Discharge instructions separately under the heading 'advice on discharge' to avoid any confusion and to decrease probability of missing any instructions
7. I would also recommend a separate section to be included in Progress Notes related to advice on discharge where consultant doctors as well as referral doctors all should recommend their advice on discharge . This will remove the confusion as well as apart from doctors, it will be easy to find and understand all the instructions related to discharge for other staff
8. Audit tool developed for this project can also be used as a checklist to make sure discharge advice is complete.
9. Primary consultant should be encouraged to participate in the discharge summary and advice preparation process.
10. Appointments and medications should be properly discussed with the patient prior to the finalization and should be decided on the basis of patient acceptance and comfortable level.

5. Conclusion

Discharge advice is a guide for patient care outside the hospital setting. Involvement of patient and use of IT not only will ease the process but will also prevent creation of any confusion and dissatisfaction. Post discharge medication errors and readmission will be prevented leading to patient early recovery from ailment and also will benefit the hospital increasing the quality of whole system.

Discharge advice preparation is a process which involves the participation of all concerned parties . Discharge advice if given in a planned and systematic way will surely enhance the quality of treatment given to the patient and will result in early as well as without any adverse event recovery from the ailment.

ANNEXUR- A

Discharge advice audit tool

Discharge advice audit tool



		Patient Sticker	Remarks
	Specialty		
	Final Diagnosis		
1	Instructions for when and how emergency or urgent care to be obtained are documented		
2	Instruction regarding wound care is documented		
3	Follow up appointments information is documented		
4	Medication prescribed by Doctors are clearly documented		
5	Proper dose and time for medicines provided		
6	Special Instructions on before and after food drugs are provided		
7	Follow up physiotherapy advice is documented		
8	Proper instructions on follow up tests(wherever required) are clearly mentioned in the discharge advice		
9	Instructions regarding diet to be followed are clearly mentioned.		
10	Discharge advice do not contain any abbreviations		
11	Special Instructions on care at home is documented		
12	Discharge summary is duly signed by Primary consultant		
13	Acknowledgement of discharge summary by patient/patient representative		

ANNEXURE-B

Discharge advice template for surgical specialty

For Surgical Specialty

Advice on Discharge

* **Bring this plan to all your medical appointments.**

- No Abbreviations should be used while filling this advice on discharge.
- This advice on discharge should be properly explained to the patient /patient relative at the time of discharge.
- Should be duly signed by Primary Consultant as well as patient / patient relatives.

Patient name:

Discharge Date:

Your Medical Problem is:

You are allergic to:

If you have questions or problems, you should call:

- Name of the person
- Contact Number

If you have a serious health problem, you should call:

- Name of the person
- Contact Number

Medicines to be taken:

S. No	Name of the medicine or injection	Amount to be taken(in mg etc)	Quantity to be taken						Duration For which it should be taken	Way medicine to be taken (after food , empty stomach with milk etc)	Reasons for this medicine
			M	A N	E	N	S	U			

- * M-Morning, AN-AfterNoon, E-Evening, N-Night, S- Sleep (At Bed Time), U-Urgency(SOS or only when you need it for)

Wound Care:

(Dressing and suture removal instruction. Care of dressing, bath etc)

Instructions to follow after surgery:

(Activity to follow, Activity to avoid, Precautions to be taken etc)

Diet Instructions :(If applicable)

- Food to be taken
- Food to be avoided

Physiotherapy Instructions: (If applicable)

(Exercises, physiotherapy consultations advice etc)

Tests and Test Reports:

- You Need To Get done a
 1. (Test Name) on or after (days)
 - 2.
 - 3.
 - 4
- Pending test result need to be collected of (Test) from (Site) on (date)

Your Next Appointment:

S.No	Date	Day	Time	Doctors name	Specialty	Site Information	Reason for appointment	Contact Number

Any Other Instructions or information to be given:

Urgent/Emergency care to be taken:

In the below mention condition you need to visit *Emergency* or call at *080-66214444*
(Conditions)

Primary Consultant Name:

Primary Consultant signature:

Patient/Patient relative signature

- ❖ I have understood the medication dosage and post discharge care explained to me.
Patient/Patient relative signature

ANNEXURE-C

Discharge advice template for nonsurgical specialty

For Nonsurgical Specialty

Advice on Discharge

* **Bring this plan to all your medical appointments.**

- No Abbreviations should be used while filling this advice on discharge.
- This advice on discharge should be properly explained to the patient /patient relative at the time of discharge.
- Should be duly signed by Primary Consultant as well as patient / patient relatives.
- The point which is not of use, please mention not applicable in front of it.

Patient name:

Discharge Date:

Your Medical Problem is:

You are allergic to:

If you have questions or problems, you should call:

- Name of the person
- Contact Number

If you have a serious health problem, you should call:

- Name of the person
- Contact Number

S. No	Name of the medicine or injection	Amount to be taken(in mg etc)	Quantity to be taken						Duration For which it should be taken	Way medicine to be taken (after food empty stomach with milk etc)	Reasons for this medicine
			M	A N	E	N	S	U			

Medicines to be taken:

- * M-Morning, AN-AfterNoon, E-Evening, N-Night, S- Sleep (At Bed Time), U-Urgency(SOS or only when you need it for)

Instructions to follow at home:

(Activity to follow, Activity to avoid, Precautions to be taken etc)

Diet Instructions: (If applicable)

- Food to be taken
- Food to be avoided

Tests and Test Reports:

- You Need To Get done a
 1. (Test Name) on or after (days)
 - 2.
 - 3.
 - 4
- Pending test result need to be collected of (Test) from (Site) on (date)

Your Next Appointment:

S.No	Date	Day	Time	Doctors name	Specialty	Site Information	Reason for appointment	Contact Number

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Any Other Instructions or information to be given:

Urgent/Emergency care to be taken:

In the below mention condition you need to visit *Emergency* or call at 080-66214444

(Conditions)

Primary Consultant Name:

Primary Consultant signature:

Patient/Patient relative signature

- ❖ I have understood the medication dosage and post discharge care explained to me.
Patient/Patient relative signature

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