

Referral Tracking Process 1  
Running head: REFERRAL-CONSULTATIVE PROCESS AT MONCRIEF ARMY  
COMMUNITY HOSPITAL

Graduate Management Project

Improving the Referral Tracking Process  
At Moncrief Army Community Hospital

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## Abstract

Moncrief Army Community Hospital (MACH) at Fort Jackson, South Carolina perceives it has a problem with the efficiency and effectiveness of its current referral tracking process. By improving the process, the MACH leadership hopes to optimize its services and patient outcomes, effectively implement the DoD program "Primary Care Manager by Name," meet and exceed continuum of care requirements as outlined by accreditation standards and regulatory guidance, and improve its financial status while managing the cost of referrals. In order to recommend improvements to the process, the researcher reviewed current literature for optimal elements of referral tracking systems, and conducted a systems analysis of the current system. Next the researcher outlined the systems analysis results through data flow diagrams and verbal descriptions and compared these results with those elements of optimal systems found in literature. Finally, using these sources along with personal interviews, the researcher provides recommendations for improvement of the current system. Some of these recommendations include tracking referrals on an individual basis, consolidating the processing of all referrals to a central office, and improving the effectiveness of the databases used in tracking referrals.

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Improving the Referral Tracking Process at Moncrief Army  
Community Hospital

### Introduction

For the last 60 years, the cost of healthcare provided in the United States has continued to rise at alarming rates (Getzen, 1997). In fact in 1996 healthcare represented one of the largest U.S. industries second only to real estate (Gapenski, 1996). As a result, the industry has consumed more than 14% of the United States' 1999 Gross Domestic Product (GDP). Some of the reasons frequently cited for this large consumption of healthcare goods and services include (Gapenski, 1996):

1. Rapid advances in the use of high technology along with the high cost of this new technology;
2. An expanding elderly population;
3. The U.S. society's belief in the value of life and that good health is worth any cost;
4. The high costs of malpractice insurance;
5. Operational inefficiencies such as duplication of services;
6. The willingness of the federal government to fund healthcare expenditures through Medicare and Medicaid programs;
7. The high cost of physician education;
8. The high cost of new facilities and equipment;

9. A third party payment system that removes the economic responsibility from the consumers of health care resulting in overutilization.

In particular, third party payment systems made funds available to allow the health care system to grow rapidly and absorb an ever increasing share of the total health care economic output (Getzen, 1997). Third party payment systems emerged in the 1920s and 1930s when the advances and costs in medicine and hospital care along the Great Depression eroded the public's ability to pay for health care (Gapenski, 1996). Hospitals and their associations encouraged the development of these insurance plans, which rapidly grew following World War II. Additionally, the government became the nation's largest third party payer in the 1960s when it enacted Medicare and Medicaid to provide coverage to the elderly and the poor.

The dominant philosophy during this period was when it came to healthcare no cost was too great. In response, health insurance companies financed fee-for-service (FFS) reimbursement systems to support this view (Schultz and Young, 1997). FFS payments included a specified amount paid to providers for each visit or procedure a patient received (Getzen, 1997). This system often allowed beneficiaries to visit their chosen healthcare provider that generated a retrospective FFS payment by insurance companies to physicians and hospitals without regard to the patient's true need.

Since a third party paid for the majority of this care, patients were removed from the economic impact of this care and continued to consume more and more care without regard to cost. Physicians in particular also enjoyed these bountiful reimbursement methods. As a result, during the 1970s and 1980s the costs of healthcare continued to rise at extremely fast rates (Getzen, 1996). In addition, this FFS system of payments, determined based upon the previous year's costs or retrospectively, created no incentive for providers or hospitals to implement cost containment measures (Shultz and Young, 1997). According to Shultz and Young, it soon became evident to the government and insurance companies, that they were paying for unnecessary and in some cases even dangerous patient care (1997).

To solve these challenges, in 1983 the federal government initiated a prospective payment system (PPS). The system, referred to as diagnosis-related groups (DRGs), was designed to provide a financial incentive for the discharge of patients as soon as possible and to prevent unnecessary procedures and tests (Shultz and Young, 1997). As a result, providers were paid a set amount according to the diagnosis of the patient. These payments were determined in advance and set according to the average cost required to treat patients with similar conditions. Therefore, if patients required less care the provider made money while more care caused the provider to lose money. This

new system quickly created changes in hospital and physician behavior resulting in a more conservative approach to ordering tests and procedures with marginal value (Getzen, 1997).

Unfortunately, although there were some reductions in healthcare costs, overall the DRG program did not create long-run reductions in the total costs of healthcare (Getzen, 1997). Costs only shifted from hospital inpatient services to hospital outpatient services and total healthcare expenditures continued to rise at historically high rates (Getzen, 1997).

The dominant current response to the perceived failure of these healthcare-financing systems in the United States has been the implementation of managed care (Fox, 1997). Managed care attempts to link the delivery of care with the financing of the care. According to Shultz and Young (1997), "the concept of managed care embodies a direct relationship and interdependence between the provision of and payment for healthcare." In addition, central to understanding managed care is the understanding of managed care's population orientation and the organization of provider networks that take responsibility for this population (Shultz and Young, 1997).

Managed care plans attempt to provide some relief from the rising costs of healthcare, while providing quality accessible medically necessary care. The fundamental function of managed care, however, is to control the utilization of healthcare services (Kongstvedt, 1997). Rather than financing all care,

managed care methods attempt to restrict care to those with medical needs in order to lower costs for those who finance the care. Whether or not managed care has solved the cost escalation of health care is still under debate, but some studies indicate that health care managed and financed through managed care costs 10 to 20 percent less than under indemnity insurance (Getzen, 1997).

The managed care model designed to provide the strictest cost and resource control is often termed a Health Maintenance Organization or HMO. HMOs attempt to combine health insurance functions with the healthcare delivery system in an attempt to provide care at the most appropriate and least expensive setting (Wagner, 1997). To do this, HMOs use a primary care manager (PCM) who is usually a general medical physician, physician's assistant, or nurse practitioner to manage the care of individual patients. These PCMs serve as the initial entry point into the healthcare system to provide intervention through diagnostic or therapeutic maneuvers or instead to authorize referral to the most appropriate specialist. By managing the resource utilization of patients and in particular by tracking and preventing medically unnecessary specialist referrals or diagnostic procedures, HMOs attempt to increase patient favorable outcomes, satisfaction and access while reducing the costs for those financing the care.

As a large healthcare benefit provider, the Department of

Defense (DoD) has experienced many of the same challenges effecting the civilian healthcare industry. Uncontrollable costs, as well as access and quality issues have plagued the DoD healthcare system. In response, much like the civilian health care environment, the DoD has currently adopted its own managed care program termed TRICARE.

TRICARE is a managed care program created to serve DoD military members and their dependents, as well as military retirees and their family members (Assistant Secretary of Defense (Health Affairs), 1995). The program is used to manage the care of active duty members and offers non-active duty beneficiaries three options or methods in which to receive care: Standard, Extra, and Prime. TRICARE Standard, an indemnity type plan, offers beneficiaries the ability to independently choose access to almost any civilian physician, but requires participants to pay larger cost shares, co-payments, and deductibles. TRICARE Extra, a Preferred Provider Organization type plan, also offers the patient their own independent choice of access to a network of providers but at discounted cost shares, co-payments, and deductibles. Finally, TRICARE Prime, an HMO type plan, requires beneficiaries to enroll with a primary care manager (PCM) at either a local Military Treatment Facility (MTF) or with a participating civilian PCM who manages their care. The PCM of TRICARE Prime patients becomes responsible for the initial treatment and all referral

authorization of prime patients. Since Prime patients subordinate most of their care decisions to the PCM, TRICARE Prime is the only plan that requires beneficiaries to enroll in the program. Prime patients may also access providers outside of the guidance of their PCM but must pay an additional Point of Service (POS) fee.

All care for active duty members is provided or arranged by military medical treatment facilities (MTFs) under the current Military Health System (MHS). Therefore, active duty members are automatically enrolled in TRICARE Prime and do not have the option of choosing specialist providers without approval of their PCM.

The entire TRICARE program is administered by the TRICARE Management Agency (TMA) which is a tri-service agency (i.e. serving all branches of the military). Key to the operation of the program is the designation of 12 Regional Lead Agents at designated MTFs. The Lead Agents are commanders of the selected military hospitals who insure operational enhancements to the Military Health System. The Lead Agents also monitor the managed care support contracts for the provision of health care services within the region that augment the MHS or Direct Care System. These managed care support contracts then augment the MHS facilities for services not provided or for those that have exceeded capacity.

MTFs provide the majority of the care to the military

beneficiary population within their surrounding catchment area.

This catchment area is roughly defined as the area within a 40-mile radius of an MTF. A local managed care support contractor, established by the TMA and monitored by the Regional Lead Agent, provides any care that MTFs do not or can not provide to their patients. As a result, MTFs have a responsibility and are accountable to TMA, the Lead Agent, and the MHS for insuring the proper administration of the TRICARE program to their catchment area population.

The TRICARE Prime program (i.e. the HMO option) allows non-active duty beneficiaries to choose a primary care manager from a DoD organization or from a list of civilian PCMs who have agreed to provide care under the TRICARE program. Active duty members, however, choose only from MTF employed PCMs. These PCMs then become responsible for all initial treatment of Prime beneficiaries. As an option for treatment, however, both DoD and civilian PCMs can refer their TRICARE Prime patients to specialists for further intervention or consultation. As with civilian managed care plans, tracking of the referrals and consultations generated by these PCMs represents an important issue for the MHS in resource utilization, patient access, and quality of care.

#### Conditions which prompted this Study

As a Medical Treatment Facility (MTF) located on the Fort Jackson Military Reservation in Columbia, South Carolina,

Moncrief Army Community Hospital (MACH) has been the largest DoD TRICARE Prime provider for its catchment area of over 57,000 beneficiaries since 1996. As a subordinate of the Southeast Regional Lead Agent at Dwight D. Eisenhower Medical Center, Fort Gordon, Georgia, MACH serves as a 60-bed hospital and as both a primary care and specialty care facility with numerous capabilities (See Table 1. below).

Table 1.

Moncrief Army Community Hospital Capabilities

|                     |                      |
|---------------------|----------------------|
| Anesthesiology      | Occupational Health  |
| Audiology           | Occupational Therapy |
| Chiropractic        | Oncology             |
| Family Practice     | Optometry            |
| General Surgery     | Oral Surgery         |
| GI Clinic           | Orthopedics          |
| Gynecology          | Pathology            |
| Internal Medicine   | Pediatrics           |
| Nuclear Medicine    | Pharmacology         |
| Nutrition Care      | Radiology            |
| Physical Therapy    | Respiratory Therapy  |
| Podiatry            | Social Work          |
| Preventive Medicine | Speech Pathology     |
| Psychiatry          | Urology              |
| Psychology          |                      |

In Fiscal Year (FY) 1999, MACH saw over 370,000 outpatient

visits, had an average daily census of 19 patients, provided over 1,100 immunizations a day, issued over 1,800 prescriptions a day, and saw more than 1,400 clinic visits per day (Moncrief Army Community Hospital, 2000).

Although the TRICARE program has had much success at MACH, the leadership and executive management perceives it has a problem with its referral tracking process. According to the Hospital's Deputy Commander for Administration or Executive Administrator, Lieutenant Colonel Dennis Coker, the leadership believes the current referral tracking process is reflective of past incentives and business processes and is not an effective mechanism for current or future success (D. Coker, personal communication, 15 September 1999).

These concerns seemed to come to focus during the September 1999 Utilization Management Meeting. At that meeting, the Chief, Managed Care Division discussed the need and a requirement for a systematic review and improvement of the referral tracking process (Moncrief Army Community Hospital, 1999). According to her, the current system lacks an efficient tracking system of referrals from PCMs to MACH and civilian specialist providers. She also stated that there is no way to track whether or not patients even make it to their appointments.

Although there have been few serious patient care concerns, reductions in quality, or significant losses of funds directly

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resulting from an inefficient referral tracking system, the MACH leadership feels it can gain significant strategic advantages by improving the process. In particular by improving the process, the leadership hopes to optimize services and patient outcomes, implement the DoD program "PCM by name," meet and exceed continuum of care requirements as outlined by accreditation standards and regulatory guidance, and improve its healthcare financial status while managing the costs of referrals.

#### Optimize Services and Patient Outcomes

Using a continually improving organization strategy, the MACH leadership hopes to improve patient outcomes and the services it provides through improved referral tracking. Further, improved referral tracking supports current initiatives and trends such as outcome measurement, evidenced-based medicine, and effective utilization of resources.

In addition, by improving its referral tracking, MACH will support the current DoD initiative of Military Health Services (MHS) Optimization in which the entire MHS is striving for continually improvement towards a high performance military health system. One of the primary goals of the MHS Optimization Plan is the establishment of the "Most Effective Organization." The actual goal itself reads: "Determine the requirements of a "most effective" health services delivery system using best business practices and analyze how to best fill the gap to maximize resource efficiency. Employ our scarce Service

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resources in the most effective manner, using 'best clinical and business practices' gleaned from the most successful civilian benchmark organizations" (Assistant Secretary of Defense (Health Affairs), 2000a).

By improving the referral tracking system, MACH hopes to optimize its services by using its specialist providers to their fullest capacity. This will prevent MACH from using civilian specialists for care that its own providers can provide at less cost and potentially better.

#### PCM by Name

Other initiatives requiring improved referral tracking includes a recent directive by the Assistant Secretary of Defense (Health Affairs), Dr. Sue Bailey, on "PCM by Name" or "individual provider impanelment" (2000). As a traditional business practice within much of the DoD, patients were assigned or impaneled to a clinic, such as Family Practice or Internal Medicine and not to any one provider. The new directive by Health Affairs requires patients to have their care managed directly by a designated PCM.

Under traditional clinic impanelment, PCMs did not have formal accountability for individual patients, so they may not have tracked all aspects of a patient's episode. In fact, patients may have been subject to what has been called the "collusion of anonymity" (Rakel, 1995). This collusion of anonymity occurs when patient responsibility is lost between the

referring provider and the consultant resulting in inappropriate decisions and even duplicate tests or procedures. The problem can further amplify when a PCM refers to numerous consultants without any one taking full responsibility for the patient (Rakel, 1995). Situations such as these create patient frustration or worse compromise patient care. Therefore, as PCMs become the true individual "patient care manager," they may experience an increased frustration with the current referral tracking system and perceive the need for a more efficient one.

#### Regulatory and Accreditation Concerns

Having an effective referral tracking process may also aid the organization in its accreditation maintenance and in its ability to comply with corporate guidance. DoD policies, Army policy, TRICARE standards, and Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards all represent agencies that require an efficient continuum of care as evidence of sound quality patient care. Failing to provide or meet these standards could create situations that may hurt patients and/or result in the loss of hospital accreditation.

The JCAHO standards regarding the Continuum of Care provide the most detailed explanations of their expectations on referrals. According to the Comprehensive Accreditation Manual for Hospitals (CAMH): The Official Handbook (CAMH) Refreshed Core, May 2000, the Coordination of Care or Services is "the process of coordinating care or services provided by a health

care organization, including referral to appropriate community resources and liaison with others (such as the individual's physician, other health care organizations, or community services involved in care or services) to meet the ongoing identified needs of individuals, to ensure implementation of the plan of care, and to avoid unnecessary duplication of services."

JCAHO defines the goal of the continuum of care function as the sequence, activities and processes during admission, inpatient care, and disposition of patients. They discuss a systematic approach to the continuum of care and the referral process without outlining specific ways of carrying out these functions. Rather, the standards encourage the organization to define its individual role in the continuum of health care services available. The JCAHO Standards that directly describe the need for a smooth referral process are listed in Table 2.

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Table 2.

JCAHO Standards Related to Referral Tracking

| <b>Standard</b> | <b>Description</b>                                                                                                          |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>CC.4</b>     | The hospital ensures continuity over time among the phases of service to a patient                                          |
| <b>CC.5</b>     | The hospital ensures the coordination among the health professionals and services or settings involved in a patient's care. |

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Table 2. continued.

- |             |                                                                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CC.6</b> | The hospital provides for referral, transfer, or discharge of the patient to another level or care, health professional, or setting, based on the patient's assessed needs and the hospital's capacity to provide the care. |
| <b>CC.7</b> | The hospital ensures that appropriate patient care and clinical information is exchanged when patients are admitted, referred, transferred, or discharged.                                                                  |
- 

By improving the referral tracking, MACH will insure it not only meets these standards but also exceeds them by providing improved patient services through referral tracking.

#### Financial Concerns

As the TRICARE Program matures, its leaders are attempting to use financial incentives to prevent the mismanagement of resources and to create business process changes. As a result, contrary to previous DoD healthcare programs, if quality care is not provided to patients, dissatisfied non-active duty patients can make choices that will have direct effects on the financial bottom line of the hospital.

Before the TRICARE program began, if patients were not satisfied with the care they received at DoD facilities, they were free to use the CHAMPUS program (Civilian Health and Medical Program for the Uniformed Services). Under CHAMPUS, nonactive duty patients could access care from any participating provider using a cost sharing type plan. Since, MTFs were funded based upon their previous year's costs this plan had little financial impact on DoD facilities. However, in 1995 CHAMPUS was replaced by TRICARE (Summary of TRICARE Final Rule, 1995), which changed these resource methodologies. Under TRICARE, DoD facilities receive capitated payments for TRICARE Prime enrolled patients and lose these payments when patients disenroll to receive their care from civilian providers under TRICARE Extra or TRICARE Standard. Therefore, if MACH patients choose civilian providers for care, the hospital's financial bottom line suffers.

Soon other factors may also effect the financial bottom line at MACH. As TRICARE and DoD funding methods evolve, accurate tracking of referrals will support the financial viability of MACH while inaccurate tracking can cost the facility money. Under the current versions of TRICARE resource funding, termed the Bid Price Adjustment (BPA), accurate accounting of referrals does little to help the hospital's financial bottom line.

This BPA is a resource methodology for payment by the

government to the managed care support contract for referrals and includes a number of steps (P. English, personal communication, 15 September 1999). First, the government pays the managed care support contractor for care it anticipates it will provide determined upon the costs of a previous year termed the data collection period. Then throughout the year, both parties track the TRICARE patient visits to the civilian providers in aggregate by specialist type, such as OB/GYN, EENT, etc. At the end of each year, the MTF and the contractor then review the aggregate data on how much care was rendered at the MTF as compared to what was forecasted in the data collection period. If the MTF rendered more care than in the data collection period, the contractor returns a portion of its set fee to the government. However, if the MTF rendered less care, the contractor will receive additional funds from the government to offset its fees and profits. Any money paid to the contractor or returned to the government is paid or received by the TRICARE Management Activity (TMA). Excess funds that TMA receives due to the efficiency of the MTF are eventually distributed back to the MTF or to other competing entities.

Typically the delay between the actual delivery of care and receipt of payment to or from the contractor is at least a year after the transactions. Since MACH operates on an annual budget, the delay of this feedback negates any ability or incentive to create a change in business processes (D. Coker,

personal communication, 15 February 2000). Under new methods of DoD resourcing such as Revised Financing and the TRICARE version 3.0, however, the timeframe between bill and payment shifts from more than a year delay to a monthly reconciliation. Even more significant to the MACH leadership, after this reconciliation, money will flow between the contractor and the MTF instead of from the contractor to the TMA. Therefore, rather than tracking aggregate figures, the MTF must become aware of the individual referrals it makes to the TRICARE contractor or risk giving the contractor money for services that were not even rendered.

#### Statement of the Problem

The current referral tracking process for TRICARE Prime beneficiaries at Moncrief Army Community Hospital has perceived inefficiencies potentially resulting in inefficient tracking of referrals, provider and patient frustration, potential poor and inefficient care, potential noncompliance with regulatory agencies, and mismanagement of resources.

#### Literature Review

According to The Managed Health Care Dictionary, referrals and consultations are requests for additional care or medical information by a provider on behalf of a patient (Rognehaugh, 1998). Every physician, regardless of specialty, turns to another physician for advice at one time or another (Rankel, 1995). This useful practice of referral and consultation became formalized as physicians specialized their training and limited

their practice to a particular type of medicine.

Referrals are defined as a temporary or permanent transfer of responsibility for a patient's care from one physician to another (Curry, Crandall, & Coggins, 1980). Consultations, however, are defined as a physician's request for advice from another physician about a patient (Curry et al., 1980). The lines between these two requests are often blurred; however, referrals can be differentiated from consultations by the transfer of responsibility (Bourguet, Gilchrist, & McCord, 1998). For this project, the referral process includes both practices of referral and consultation but implies no transfer of patient responsibility from the PCM. Furthermore, it also includes all administrative support needed to ensure the efficiency and effectiveness of the process.

#### The Referral Process

The referral process between the provider and patient has five steps: (1) the referring provider and patient determine the need for consultation, (2) the referring provider communicates the reason and appropriate clinical information regarding the patient to the specialist provider, (3) the specialist evaluates the patient, (4) the specialist communicates all findings and recommendations to the referring physician, and (5) the patient, referring provider, and specialist determine further treatment (McPhee et al, 1984).

According to Rankel (1995), less than 5% of all primary care

results in referral. However, one study found that the average referral generated about \$3,000 in hospital charges and professional fees (Glenn, Lawler, and Hoerl, 1987).

Furthermore, a wide amount of variation exists among referral rates from generalists (Donohoe et al, 1999). Therefore, the decision to refer is a complex issue and not easy to explain (Lawler, 1987). It can be assumed that many factors influence the decision and as Rankel (1995) stated, "the appropriate use of the consultation process is an art that contributes to improved patient care."

Donohoe et al (1999) set out to study this practice and try to determine what medical and non-medical factors influenced outpatient referrals from generalists to specialists. Their five month prospective survey found that of the referrals made 76% were influenced by both medical and non-medical reasons, by only medical reasons in 20%, and by only non-medical reasons in 3% (Donohoe et al, 1999). Some of the top medical reasons cited in the study included to get advice about a therapy, to obtain assistance with making a diagnosis, to confirm a diagnosis, to perform a diagnostic or therapeutic procedure, and to learn more about treatment options. Non-medical reasons included to meet the community standard of care, to accede to the patient's request for referral, to learn how to deal with similar cases in the future, to obtain assistance with patient education, and to reassure the patient or the patient's family that a serious

disease is not present (Donohoe et al., 1999).

Historically, the decision to refer a patient was based upon quality of care concerns or patient preferences and providers paid little attention to cost effectiveness (D'Amaro and Thomas, 1989). With the current dominance of managed care programs, however, cost containment has become an important concern for this process. Provider referrals, therefore, have become an important focus of managed care organization utilization management controls (Grembowski, Cook, Patrick, Roussel, 1998).

#### The Effectiveness and Efficiency of Referrals

The high cost associated with referrals along with the wide variation of referral rates and reasons for referral set the stage for numerous studies on reducing the total number of referrals from providers. In one study, Cho et al. (1993) performed a prospective review of non-urgent consultation requests and reduced the rate of referral from 4.3% to 3.2%. Another performed by Forest et al. (1999) found that among pediatric patients in their study 50 conditions represented 84.3% of all referrals. They suggested educators ensure that these conditions were emphasized in primary care training curricula in order to reduce most referrals. Donohoe et al. (1999), surveyed generalists and specialists over a five month period and found that about one third of all referrals were possibly inappropriate. The physicians in the study also

identified factors that could have avoided referrals including more training in specific procedures, consultation with a trusted colleague, telephone consults with a specialist, the presence of a health educator, availability of clinical practice guidelines, longer visit lengths, computerized medical expert systems, MEDLINE search capabilities, and subspecialty texts (Donohoe et al., 1999).

Although these studies imply that the physicians making these inappropriate referrals may require additional training, or additional support to avoid referrals, not all researchers agree. The authors Fertig et al. (1993), found that high variation in referral rates were not explained by inappropriate referrals. Therefore, they concluded application of referral guidelines would not be useful in reducing referrals to hospitals (Fertig, Roland, King, Moore et al., 1993). Reynolds et al. (1991) had similar findings. Their study found that a high rate of referrals does not necessarily imply a high level of inappropriate referral and that in some cases "good doctors refer more patients" (Reynolds, Chitnis, and Roland, 1991).

In addition to studies conducted to reduce total referrals, researchers have looked into the efficiency of the process. Some of these studies cite communication between the referring provider and the consultant as the main inefficiency of the referral process (Kunkle, 1964; Bourguet, Gilcrist, & McCord, 1998; Geyman, 1994; Miller, R. & Miranda, F., 1991; McPhee, Lo,

Saika, & Meltzer, 1984). Two of these studies urge the referring physician to provide more information for coordination of care for the consultant to perform his or her job properly through more detailed written information or through a phone call (McPhee et al, 1984; Geyman, 1994). Curry et al (1990) even found that the use of a return mailer increased the percentage of consultant feedback from 39 to 60 percent. Finally, Kinnersley, Rapport, Owen, and Scott found that in-house referrals to other primary care managers (PCMs) often avoided some questionable referrals and satisfied patients (1999). Their study found that 38% of 177 specialist referrals were avoided through consultation with other PCMs.

Other methods used to improve the efficiency of the referral process involve using more recent technological advances. Technologies such as optical memory cards (Sakashita et al., 1996), telecommunications equipment (Perednia et al, 1998) and interactive voice response (Barhoumy and Bitter, 1999) have been used to improve the efficiency of the referral process. Each of these innovative approaches uses the technology that best fits each organization's individual situation.

Other studies suggest that some of these inefficiencies are a result of the patient's actions or inaction. Many authors suggest that patients never actually make their referred appointments (Cartland and Yudkowsky, 1992; Jones, Sisson, Kurbasic, Thomas, & Badgett, 1997). According to Jones et al,

less than half of all patients visiting a general pediatric office within a four-month interval, actually made it to their referral appointment. In order to address this issue, Wilson (1987) found his rate of "lost patients" improved when he provided a single specialist for consultation rather than a list of names.

### Managing Referrals

With so many concerns about the efficiency of the referral process, the management of the referrals and consultations from PCMs is an often-scrutinized part of managed care. According to Kongstvedt, the costs associated with non-primary care services in the majority of managed care plans can be 1.5 to 2.0 times greater than primary care services (1997). With such a large amount of resources following each referral, physician referrals and the referral process are important targets of managed care organizations tracking and utilization controls (Grembowski et al, 1998).

The targeting of these referrals requires the managed care organization to be able to capture utilization and cost data in an accurate and timely manner (Kongstvedt, 1997). According to Kongstvedt, without this ability, any efforts to control utilization will be severely hampered (1997). Using the captured utilization and cost data, organizations can determine their referral rates per 1,000 members per year. Commercial HMOs average 1.2 encounters per member per year (PMPY), with a range

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of 0.8 to 1.3 encounters PMPY. Once organizations capture their cost data, they can benchmark themselves and implement process control measures appropriately. In order to achieve control of the utilization of these referrals, managed care organizations can use the basic methods of referral control and the methods for tight referral control offered by Kongstvedt (1997).

The most basic methods of referral control are a PCM authorization system and selecting providers on a demonstrated pattern of practice basis. Kongstvedt contends that an authorization system is an essential element in managing referrals and consultant costs (1998). Without a PCM authorization system, managers have a markedly diminished chance of effectively controlling referral utilization. One of the most effective ways to impact referral expenses is to select providers on a demonstrated pattern of practice basis. This applies to both PCMs and specialists since often large differences in efficiency between providers exist (Kongstvedt, 1997).

Kongstvedt in his book the Essentials of Managed Care, also outlines some of the most popular methods to achieve tight control of the referral process (1997). These methods include authorizations for single visits only, prohibition of secondary referrals and authorizations, reviewing reasons for referral, limiting self referral, standards for referral forms, and using large case managers.

"Single visit authorizations only" (with few exceptions)

give managed care organizations optimal control of referrals (Kongstvedt, 1997). Once the PCM makes the referral, he or she provides a unique authorization for that referral. The authorization is then good for one visit and will be used for one claim. This method, however, is often difficult to enforce and must not penalize patients or consultants because of PCM errors. Further, factors important to this method are up front disclosure, member education, and periodic reeducation. Exceptions to the single visit rule could include chemotherapy, obstetrics, mental health to name a few but ultimately should be decided by the plan (Kongstvedt, 1997).

A second method for achieving tight control involves the prohibition of secondary referrals and authorizations. This prevents consultants from authorizing additional referrals for members. If a consultant wishes to refer the patient to another provider, he/she must provide that information back to the PCM, who is the authorization authority. This method aims to prevent unnecessary or even duplicate referrals (Kongstvedt, 1997).

Reviewing reasons for referral represents another method for tight control of referrals. This method involves the medical director in the review of the reasons for referral from PCMs. Tight systems have the director review prospectively, while most systems use a retrospective review. Preferably the director reviews the referral form that provides the reason for referral

or, if electronic referrals are used, then a chart review similar to a Quality Assurance audit should be used (Kongstvedt, 1997).

In reviewing the reasons for referral, the medical director or his/her representative should look for certain standards on referral forms. The referring PCM should indicate why the patient is being referred what the PCM thinks the diagnosis is or what he or she is concerned about, what has already been done and what exactly the PCM wants the consultant to do. Further, the PCM should indicate the results of their own work-up or significant findings on the patient's history and physical examination thus making the consultants' job easier and more efficient (Kongstvedt, 1997).

Another method for increasing the efficiency of the referral process is using large case managers. Large case managers attempt to manage the provision of health care to members with high-cost medical conditions who receive care across practice settings (Kongstvedt, 1997). By involving a specialist as a large case manager, patients who have chronic and/or high-cost problems outside of the knowledge and expertise of the PCM, can be more efficiently and effectively managed.

Finally, to achieve tight control, managed care plans should limit members from referring themselves to consultants. Some managed care plans that offer a Point of Service option allow self-referral, typically at higher costs. In either case

however, patient education is key in order to prevent uninformed self-referral.

### Referral Tracking

The review of published literature produced very little research directly related to referral-tracking systems. One unpublished study by Edwards, however, looked at the consult management process at a DoD medical center (Edwards, 1998). Apparently, the medical center in Edwards' study was perceived as a "black-hole" for referrals. Providers from local DoD hospitals felt once referrals were sent to the Medical Center very little was ever seen in the form of a return consult. Edwards' study differed from this study in that the Medical Center was concerned about losing requests for consultation rather than losing track of referred patients from PCMs. Edwards' investigated the issue by performing an analysis of the referral process, conducting literature reviews, interviewing the staff of the facility, and working with a team of functional area experts to develop a workable process. From the results of his study, Edwards recommended increased education to PCMs, use of computer technology to improve consult returns to other DoD providers, implementation of a Utilization Management program, and reorganization of the consult management office (Edwards, 1998).

### Systems Analysis

Often complex systems require a detailed analysis of the

overall process as well as a detailed description of component parts. Systems analysis techniques allow a complete analysis of a current process in a systematic and well-organized process. A completed systems analysis outlines the operation's processes, participants, and data systems used as well as describes the interactions between these elements. To do this, the information gathered regarding the studied process is displayed in a series of data flow diagrams coupled with verbal descriptions of the entire process.

In 1992, the Coker used a system's analysis to describe improvements to the managed care programs at a Military Medical Treatment Facility. In addition, Edward's (1998) review of the consultation process also used a form of systems analysis to describe the referral process at a Medical Center. Therefore, given the problem of inefficiencies in the MACH Referral Tracking Process and the need for an accurate description of the process and related elements, a systems analysis appears as the most appropriate method of problem identification and resolution.

#### Purpose

The purpose of this study is identify inefficiencies and propose improvements to the current referral tracking process of all PCMs and specialists participating in TRICARE at Moncrief Army Community Hospital and its catchment area.

The methods and procedures used in this study included a review of current literature for optimal referral tracking elements, a systems analysis of the current referral tracking system at MACH, and a design of a recommended improvements to the referral tracking system.

First, a review of referral tracking and referral management current literature was conducted in an attempt to identify some of the key elements or best practices of referral tracking systems. Next, a systems analysis of the current referral tracking process was conducted. Through this analysis, the researcher attempted to identify a comprehensive description of the system. A systems analysis method enables one to break complex problems into component parts for examination. Once these components are identified and compared to best practices and/or common sense, the researcher can then provide recommendations for improvement of the referral tracking system into a more efficient process.

In order to perform the systems analysis, the researcher met with those individuals who worked with referral management and referral tracking on a daily basis at MACH. The individuals primarily included the MACH Health Care Finders (MHCF), who coordinate many administrative aspects of referrals; MACH PCMs and specialists; the Fort Jackson TRICARE Service Center director; and the MACH leadership.

Data flow diagrams were then created to describe the current referral tracking system. These diagrams identified the processes, entities involved, and the flows of data between entities. By using the data flow diagrams, the researcher could outline the process, break it down into its components, and identify those areas requiring improvement. The results of the initial systems analysis were then provided to the individuals consulted to verify the current process.

Once these diagrams were constructed and validated by participants, the researcher then examined the results and compared them with those key elements or best practices of referral tracking systems identified earlier. Finally, these recommendations were then used to provide recommendations for overall improvement and to construct an improved system.

The researcher considered the study results valid and reliable after they were reviewed by at least two sources. These considerations are also based upon the assumption that the individuals interviewed were forthright and complete in the interviews. Some individual answer biases are to be expected but should not affect the overall study methods. Thus, the methods should address the problem and purpose of the study while allowing for its duplication.

## Results

### Literature Review Results

A literature review was conducted throughout the study in

order to identify the elements of the key elements or best practices of referral tracking systems. Very few articles discuss tracking referrals directly while many describe referral controls such as prospective reviews or PCM authorization systems. Therefore, one can gain information on how to increase the efficiency and control of the referral process, which can then become the basis for a referral tracking system (See Table 3. below).

Table 3

Literature Elements of Referral Tracking Systems

|                                                                     |
|---------------------------------------------------------------------|
| Authorization of Single Visit Only                                  |
| Prohibition of Secondary Referrals without PCM Approval             |
| Prospective Review of Referrals                                     |
| Limited Self-Referrals                                              |
| Referral Form Standards                                             |
| Large Case Managers                                                 |
| Capture of Utilization                                              |
| Capture of Cost Data                                                |
| PCM Authorization System                                            |
| Choose Based on Demonstrated Practice Patterns Referred Specialists |
| Provide Single Specialist for Consultation                          |
| Utilize Technology to Improve Referral Tracking                     |
| Educate on Most Common Referrals from PCMs                          |
| Consult with Other PCM on Questionable Referrals                    |

Systems Analysis Results (Before Recommendations).

In order to outline and describe the current referral tracking at MACH, the researcher used a systems analysis approach. The data flow diagram format used in this study consists of five symbols representing the system elements and their interactions. The symbols include a square representing a process or activity, a thick arrow representing process flow, a thin arrow representing data flow or exchange, a rectangle for participants, and an open ended box for data files whether paper or electronic.

The systems analysis of the Referral Tracking performed at Moncrief Army Community Hospital (MACH) found that there are eight tasks (See Appendix A). The Main Task provides an overview of the entire process. Then each of these tasks is further broken into subtasks providing the most detail on the system.

Main Task: Track Referrals.

The tasks associated with the Main Task: Track Referrals are initiate routine referral, initiate urgent referral, refer to specialist from civilian PCM, receive emergency or urgent treatment, review MACH referral for medical appropriateness, maximize referrals to DoD specialists from MACH PCMs, refer to civilian specialist from MACH PCM, and feedback to PCM (See Appendix A).

These tasks represent the systems analysis results overview of the referral tracking process at MACH. First, patients and providers initiate either a routine, urgent, or emergency referral. The referral may then be reviewed based upon certain criteria that will be discussed within Tasks 1.3: Refer to Civilian Specialist from MACH PCM, Task 2: Review MACH Referral for Medical Appropriateness, and Task 1.4: Refer to Specialist from Civilian PCM. Then attempts are made to maximize the use of DoD specialists. If these attempts are exhausted, the referral is then sent to the installation TRICARE Service Center (TSC) for selection of the appropriate civilian specialist. Civilian PCMs send their referrals to the TSC for selection of the appropriate specialist. Finally, the tracking is complete when the PCM receives feedback from the specialist in the form of a consultation.

Each of the tasks is further broken down into subtasks to provide detail on the present tracking and flow of referrals.

#### Task 1.1: Initiate ROUTINE Referral

The subtasks associated with this task are determine the need for routine referral, prepare referral request, and provide guidance to the patient (See Appendix A).

Initiating a routine referral begins with a patient's visit to his or her PCM. During the course of the visit, the patient and PCM may recognize the need for further assistance from a specialist provider. This assistance may be required to

diagnose a condition, confirm a diagnosis, perform a procedure, or any other reason they determine necessary. The PCM formally approves the referral by generating the referral request by preparing a handwritten Standard Form 513 Consultation Sheet (SF 513), DD FORM 2161 Request for Civilian Medical Care (DD 2161) or by entering the request electronically into Machos consolidated information system named the Composite Health Care System (CHCS). The referral request generally includes the reason for the request and any other information the PCM decides is necessary. The task is completed with the PCM providing guidance to the patient on what he or she should do following the visit to the specialist. Typically, MACH PCMs request patients to initiate a follow-up visit or phone call with the PCM to discuss the specialist's results (L. Cote, K. Phelps, personal communication, March 15, 2000).

#### Task 1.2: Initiate Urgent Referral

The subtasks associated with this task are determine the need for urgent referral, contact specialist, prepare urgent referral, and guidance to patient (See Appendix A).

If during the course of a patient-PCM visit, the PCM determines that the patient requires specialty care within 72 hours, then the PCM initiates an urgent referral. The PCM first identifies the type of specialist required and attempts to use one of the specialists on staff at Moncrief or at the Regional Medical Center. If the PCM can not secure an urgent appointment

with one of these specialists, they then attempt to contact a network-participating provider. If they are still are unsuccessful, they finally contact a non-network participating provider. The PCM then enters the referral request into CHCS as an electronic referral and calls the MACH Health Care Finder (MHCF) to inform them of the urgent referral. The MHCF immediately prints the referral, faxes it to the TRICARE Service Center (TSC) for urgent authorization, and posts the request to their MHCF database. Once the TSC receives the referral, they confirm that it meets Milliman and Robertson criteria, Humana policies, and OCHAMPUS policies for referral, posts the request to their TRICARE Health Care Finder (THCF) database, and then builds the authorization into their medical claims database termed the CHAMPUS Regional Information System (CRIS) database. Finally, in order to complete the referral process, the PCM instructs the patient to initiate a follow-up visit or phone call to discuss the results of the specialist visit.

#### Task 1.3: Refer to Specialist from Civilian PCM

The subtasks associated with this task include receive referral request, track referral request, verify referral criteria met, determine if specialty is available at MACH, book appointment, determine if specialty is available at VA facility, determine if specialty is available in network, determine if specialty is available at non-network participating provider, and determine if specialty is available at non-network non-

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participating provider (See Appendix A).

If a TRICARE Prime patient receives his or her primary care from a civilian PCM, the PCM forwards all referrals for the patient to the TSC for authorization. Once the TSC receives the referral, the THCF posts the request to the THCF database and then reviews the request according to the Milliman and Robertson criteria, Humana policies, and OCHAMPUS policies. If additional information or further action is necessary as a result of this review, the THCF returns the request to the provider. However, if the criteria for referral are met, the THCF uses a limited CHCS template to determine if MACH has the referred specialty available within the time frame specified by the PCM or by TRICARE 30 day standards if no time frame is specified. If the specialty is available at MACH, the THCF books the appointment for the patient and notifies the patient.

If the specialty is not available at MACH, the THCF looks to the local VA facility for availability. If the VA is unavailable, then the THCF attempts to use a network specialist. Having exhausted the list of network specialists, the THCF looks for a non-network participating provider and, as a last resort, a non-network, non-participating provider is used.

Once the THCF finds an available specialist, they authorize the visit in the CRIS database and notify all participants including the PCM, patient, and specialist of the authorization.

Task 1.4: Receive Emergency or Urgent Treatment

The subtasks associated with receive emergency or urgent treatment include determine the need for visit, provide care, receive post-approval request, send to TSC for post-authorization, and authorize the emergency visit (See Appendix A).

First when a patient determines that they need urgent or emergency treatment, they either call 911, 751-CARE, or proceed to the nearest emergency room (ER).

If the patient receives emergency treatment at a civilian facility, they are then obligated to phone 751-CARE within 24 hours of their visit and request post-approval and authorization. A member of the MACH appointment center will receive their request and prepare a handwritten 2161 or 513 reflecting the patient's situation. The appointment's individual then hand carries the 2161 to the individuals PCM or to the Chief of the Department of Family Health for approval. Then the form is hand carried to the MACH HCF office and sent to the TSC for post-authorization. At the TSC, the HCF posts the receipt of the emergency visit into their database and builds an authorization in the CRIS database.

If the patient feels they need urgent or emergency care and calls 751-CARE during normal duty hours, the patient will talk with a MACH appointment cell individual who will schedule an urgent visit with one of the MACH providers from its urgent care

clinic termed Treatment Referral Area (TRA). The patient will then receive care at MACH and the results of the referral will be placed into the patient's healthcare record.

If a patient believes they need urgent care and they call after normal business hours, they will either speak directly with a member of the Health Care Information Line (HCIL) or a member of the TRA staff.

If the individual discusses their situation with a HCIL representative, the HCIL representative will provide advice to the patient as to the proper level of care required. The HCIL representative will then generate a record of the transaction along with the recommendations they gave and will forward it to the MACH managed care office.

If the individual speaks with a member of the TRA staff, the staff can also provide guidance and even arrange an appointment for urgent care at the TRA. If the patient then receives care from a TRA specialist, a TRA staff member will place information regarding the visit in the patients HCR. However, if the TRA provider believes the patient requires an emergency room visit, the provider will direct the patient to the nearest emergency room. Further, that TRA provider may initiate a referral approval by completing a 513/2161 based upon the information received from the phone call.

This approval request will then be picked up the following morning by a MACH managed care health benefits advisor (HBA).

This HBA then completes any missing elements of the form and faxes it to the TSC. The TSC posts receipt of the referral into their database and builds the authorization into the CRIS database.

#### Task 2: Review MACH Referral for Medical Appropriateness

The subtasks associated with this task are perform quality assurance, print electronic referrals, receive written referral, and review medical appropriateness (See Appendix A).

After referrals are entered into CHCS by PCMs, a quality assurance check is supposed to be completed within two days after the referral generation. However, at this time, no quality assurance check is being done, but the two-day delay is still present. The morning of the third day after the referral was posted to CHCS, the MACH Health Care Finder (MHCF) prints a consolidated list of all referral requests and then prints each referral individually. All hand written referral requests are also gathered by the MHCF at this time. The MHCF then reviews the requests for referral from non-PCM providers and forwards them through office distribution to the patients PCM for approval. Once signed, the PCM support staff returns the request back to the MHCF.

Referrals for select medical specialties are then separated for medical appropriateness review. These include any referrals to the MACH clinics of Orthopedics, Urology, and Physical Therapy. Providers from these clinics daily go to the MHCFS

office to review all referrals generated for their specialty.

If the referral does not contain enough information or does not require specialist intervention, the clinic specialist will return the referral to the PCM for additional information or action.

### Task 3: Maximize Referrals to DoD Specialists from MACH

#### PCMs

The subtasks associated with this task are determine patient category, determine if specialty is available at MACH, determine if specialty is available at other DoD facility, book appointment, authorize supplemental care for active duty patients, transfer prime patients to TSC, and disengage non-prime patients (See Appendix A).

Once referrals are screened for medical appropriateness, they are again consolidated by the MHCF. The MHCF then determines the patient's category by viewing the patient's information in CHCS. The referrals are then divided into the patient categories of active duty, non-active duty TRICARE Prime (Prime), and non-TRICARE Prime (non-Prime).

The MHCF then reviews each referral and attempts to maximize the use of specialists within MACH and provide limited space available care to non-TRICARE Prime patients. Using CHCS, the MHCF reviews the available MACH provider templates for appointment availability within the time frame specified by the PCM.

For Prime patients, the MHCF attempts to find a specialist at MACH available within the PCMs specific time frame or the MHCF uses the TRICARE standard of 30 days from the date of referral.

Appointments for Non-TRICARE Prime patients' are allocated if the specialty exists and if any appointments are available within five working days of the MHCF review. By using this five-day rule of thumb, the MHCF attempts to fill any short-notice appointments that may go unbooked while leaving the majority of appointments available for active duty and TRICARE Prime patients.

If the specialty exists at MACH and an open appointment is available, the MHCF contacts the patient and books the appointment in CHCS. Then the MHCF copies the CHCS referral request form, sends the original to the specialist, and sends the copy to the patient.

If the specialty does not exist within MACH or access standards cannot be met, the MHCF attempts to utilize other DoD facilities for specialist care. The MHCF attempts to send the patient to the Regional Medical Center Dwight D. Eisenhower Army Medical Center (DDEAMC) at Ft. Gordon, GA. The use of this Medical Center is limited since it falls outside of a one hour driving distance standard set by the TRICARE program for Prime patients. Therefore, TRICARE Prime patients are not obligated to use the facility. Active duty patients, however, are not

limited by this standard.

If the specialty required for non-Prime patients exists at DDEAMC and the Medical Center is willing to treat the patient, the MHCF books an appointment for the patient. Since DDEAMC is a teaching facility, the medical staff is often willing to treat non-Prime patients in order to maintain or increase competencies.

To complete all referrals to the medical center, the MHCF faxes the referral to the Eisenhower HCF who returns the fax with the referral date. Then the MHCF enters the referral into their MHCF Database, keeps a copy of the referral, and sends the original to the patient.

The MHCF will repeat the process followed above for other DoD facilities such as Walter Reed Army Medical Center, but normally the query is limited to those facilities that the PCM or MACH medical staff recommends. Active duty patients generally will be sent to access the DoD facilities while Prime patients can refuse to use these services since the facility is out of the TRICARE one hour driving standard.

If no DoD facility is available for the specialty care required by an active duty soldier, the MHCF begins the supplemental care approval process. In order to prevent liability issues and to conserve funds, it is more advantageous for the DoD to have active duty service members treated by military providers. Therefore, the supplemental approval process

exists to prevent unnecessary referral of active duty service members to civilian providers.

The first step in this subtask involves the MHCF forwarding the PCMs referral request to the MACH Deputy Commander for Clinical Services (DCCS) for approval. The DCCS then reviews the request and if necessary seeks additional information directly from the PCM. If the DCCS disapproves the request, he or she returns the referral to the PCM for further action. However, if the DCCS does approve the referral, the MHCF books an appointment with a TRICARE network provider or, if none are available, a non-network provider. Finally, the MHCF records the supplemental care transaction in the MHCF database and faxes all of the referral information to the Region TRICARE supplemental care program office at Ft. Gordon, GA, and mails copies to the patient as well as the specialist.

The next subtask involves transferring the remaining Prime patients to the TSC. However, before the referrals are sent, the MHCF posts the records to their database. Then a TSC representative daily picks up a copy of a consolidated list of referrals for civilian care.

The final subtask involves disengaging non-prime patients. If care is not available within the DoD system, the MHCF disengages non-Prime patients from the DoD system so that they may utilize civilian providers. To disengage the patients, the MHCF sends a copy of the referral along with a memo outlining

how the patient can receive help from the TSC in locating a specialist for their referral.

Task 4: Refer to Civilian Specialist from MACH PCM

The subtasks associated with this task are receive referral request, track referral request, verify insurance criteria met, determine if specialty is available at VA facility, determine if specialty is available in network, determine if specialty is available at non-network participating provider, determine if specialty is available at non-network non-participating provider (See Appendix A).

Daily, a TRICARE Service Center Health Care Finder (THCF) picks up a list of referrals for civilian specialty care from the MHCF office. The THCF then hand-carries the list to the TSC and posts these requests to the THCF database. Next, the THCF reviews the requests according to the Milliman and Robertson criteria for outpatient visits, Humana policies, and OCHAMPUS policies. If the criteria are not met the THCF returns the referral to the MHCF who passes it to the requesting PCM. Additionally, the THCF also reviews the requests for the number of visits authorized for the patient. If the PCM did not indicate the number of visits, the THCF returns the referral for the PCM's guidance.

If the criteria for referral are met and the number of visits are indicated, the THCF then determines if the required specialty exists at the local VA medical center. If the

specialty is available, the THCF then determines if an appointment is available within either the PCM's requested time frame or without specific PCM guidance within the 30 day TRICARE standard. If the VA hospital does not have the specialty or an available appointment, then the THCF attempts to find a specialist and an appropriate appointment time within the TRICARE network. If none are available within the network, then the THCF attempts to use a non-network participating provider or as a last resort, a non-network non-participating provider.

The THCF then finds builds an authorization for the appointment by entering the appropriate information into the CRIS database. Then the THCF notifies the patient, and the specialist via mail or fax of the visit and the visit procedures. These procedures include information for filing the claim, the number of follow-up visits, and the requirement for a returned consultation.

#### Task 5: Feedback to PCMs

The subtasks associated with this task are patient specialist encounter, complete consultation, receive consultation, initiate follow-up visit, patient-PCM follow-up visit, and PCM education (See Appendix A).

Having received approval and authorization for a visit to any specialist whether DoD or civilian, the patient and specialist meet for the specified amount of encounters. Upon completion of these visits, the specialist and the patient often

discuss the results and findings of the specialist. The specialist then prepares a consultation for the originating PCM and forwards it to either the PCM's office or the TSC. If the TSC receives the consultation, they hand carry the consultation to the MHCF office. The MHCF then places the consultation from the TSC along with any consultations they have received into the PCM's clinic distribution box. Then the consultation is returned to the PCM through office distribution.

When the PCM receives the consultation, they often keep a copy for their office files and send the consultation to the Patient Administration Division (PAD), who places it in the patient's medical records.

After the visit, the patient initiates a follow-up with the PCM if directed in Task 1. At that visit, the patient and the PCM review the consultation results and decide on further treatment if needed. Upon completion of the visit, the PCM places the consultation into the patient's medical record and if necessary keeps an office file of the consultation.

Finally, PCMs within MACH informally communicate and educate each other about the types of referrals and patients they have seen. The relatively small size of the Family Health Center, where most PCMs are located, allows them to the opportunity to discuss these issues on a regular basis.

#### Literature Review Comparison Results

Upon completion of the systems analysis, the elements of

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referral tracking systems in literature were compared with those elements present in the current referral tracking system at MACH. The results were then displayed in Table 4.

Table 4.

Comparison of Elements in Literature and the Present System at Moncrief Army Community Hospital

| <b><i>Elements of Referral Tracking System in Literature</i></b>                   | <b><i>Present in MACH System?</i></b> |
|------------------------------------------------------------------------------------|---------------------------------------|
| Authorization of Single Visit Only                                                 | No                                    |
| Prohibition of Secondary Referrals without PCM Approval                            | Yes                                   |
| Prospective Review of Referrals                                                    | No                                    |
| Limited Self-Referrals                                                             | Yes                                   |
| Referral Form Standards                                                            | No                                    |
| Large Case Managers                                                                | Yes                                   |
| Capture of Utilization                                                             | No                                    |
| Capture of Cost Data                                                               | No                                    |
| PCM Authorization System                                                           | Yes                                   |
| Choose Specialists Based on Demonstrated Practice Patterns of Referred Specialists | No                                    |
| Provide Single Specialist for Consultation                                         | Yes                                   |
| Utilize Technology to Improve Referral Tracking                                    | No                                    |
| Educate on Most Common Referrals from PCMs                                         | Yes                                   |
| Consult with Other PCM on Questionable Referrals                                   | Yes                                   |

## Discussion

### Critical Analysis of Strengths and Weaknesses

The literature review and construction of the systems analysis provided opportunities to identify many of the strengths and weakness of the current referral tracking system.

#### Strengths of the Current System

##### PCM Education on Most Common Referrals

Current literature suggests educating PCMs on most often referred conditions (Forrest et al., 1999). Although no standard data is collected, PCMs at MACH do share information amongst each other on top referrals and special treatments. Since the hospital is relatively small and all PCMs are within the same clinic, they are able to exchange information rather often and quickly. Furthermore, PCMs request consultations from other PCMs at MACH, thus saving referrals to costly specialists (L. Cote, personal communications, April 26, 2000).

However, formal data collection of consultation results may further aid the PCMs in their consultation decisions. Too often, patients are seen by PCMs and, unless the patient initiates a follow up appointment or the consultation returns to the PCM, the results of the encounter go unchecked and uncollected. By tracking patient referrals and educating PCMs on consultation results, MACH PCMs may prevent additional referrals, increase patient satisfaction, and save the facility money.

Prospective Review

Another strength of the current system is that all civilian referrals are prospectively reviewed for the appropriate referral criteria. This step is performed by the TRICARE Service Center HCF (THCF). The THCF performs this check on all routine referrals received and requests additional information or rejects them if inappropriate.

MACH also believes it has an obligation to perform this review on internal referrals but currently does not do so. More research is needed to determine if this review is actually required. However at present, since the MHCFS are not aware of the current policy, they still allow two days to pass before acting on referrals. This delay could make the difference in optimizing MACH providers or sending the referral to costly civilian specialists.

Case Management

Case management represents another strength of the referral process at MACH. According to Major Gloria Long, the Director of Case Management at MACH, case management at MACH is a clinical system that focuses on diagnostic groups identified as high volume, high cost, and high users of limited resources (G. Long, personal communication, April 24, 2000). The goal of case management at MACH is to optimize the patient's self-care capabilities, promote efficient use of resources, provide quality of care across the continuum and enhance the patient's

quality of life.

In addition, the case managers at MACH track active duty soldiers that receive care in civilian facilities. The case manager is the link between the active duty soldier's unit, civilian specialists, and MACH providers. To do this, case managers follow the patient's treatment plan and assist the civilian facility in the coordination of the patient's return to MACH, his unit and his follow-up care.

#### Referrals Require PCM Approval

All referrals require PCM approval in the MACH tracking system. This even applies to referrals generated by MACH specialists. If the MACH health care finders receive referrals from even MACH specialists for patients, the health care finder will forward the request to the patient's PCM for approval.

#### Single Specialist for Consultation

Another strength of the MACH referral process is that patients are referred to a single specific provider. Although the health care finder or PCM may contact more than one specialist in order to determine availability, when the patient actually receives the approved referral it is specifically for one provider. This prevents the patient from having to contact numerous specialists in order to determine availability. Further, this places MACH in a better position to control the specialist that the patient sees. Therefore, if MACH determines which providers that they do not want patients visiting, they

can potentially exclude that provider from seeing MACH patients.

### Weaknesses of the Current System

#### Aggregate Referral Tracking

Perhaps the greatest weakness of the referral tracking system at MACH is that there is very little "tracking" actually happening. Referrals are generated by PCMs who ask their patients to make follow up visits after their specialist visit. But, unless the patient makes this follow up visit or the PCM receives a return consultation, the PCM does not track referrals on most patients nor does he or she even know if the patient made their appointment. As a result, patients, not their PCMs or even administrators currently have the burden of tracking their referrals.

Even the referral tracking databases used by the MACH Health Care Finders and the TRICARE Service Center are not used to track referrals but to cover the section in case of misplaced documents. Therefore, the tracking of patients from PCM to consultant and back to PCM is just not happening. As a result, the MACH leadership can not optimize services and effectively manage its patient population.

#### PCM feedback

Another significant weakness of the current system is the lack of feedback to PCMs. According to Dr. Lise Cote, Chief, Department of Family Health, PCMs receive sporadic if any feedback from consultants regarding their patients' referrals

Furthermore, PCMs are in need of other feedback tools to help them manage their impaneled patient referrals. For example, a report that provides PCMs with a list of their monthly referrals would significantly aid PCMs in their impanelment responsibilities. In order to provide their PCMs feedback, other DoD facilities provide PCMs with lists of their top referrals, drugs prescribed, tests ordered, and others important indicators (J. James, personal communication, February 29, 2000). Further research is needed to determine the optimal reports that could benefit PCMs but clearly there is a need for feedback to optimize services at MACH.

#### Multiple visits per Single Referral

In order for the tightest control or tracking of referrals, Kongstvedt recommends a single visit per referral request (1997). PCMs are then required to authorize all other requests. This allows PCMs to maintain accountability of patients, keeps the PCM in the patients care decisions at all times, and avoids "open-ended" referrals.

Contrary to Kongstvedt's recommendations, however, the MACH PCMs of TRICARE Prime patients are free to authorize as many visits as they deem necessary for their patients. Although this allows more flexibility, it may cost the facility extra money, keep PCMs out of their role as the patient's manager, and reduce valuable specialist productivity.

Open-ended referrals, interestingly enough, occur more frequently when patients are referred to MACH specialists as opposed to civilian referrals. Since the specialist is within the facility, PCMs and MHCFS incorrectly are not as concerned about the financial implications of these referrals. Therefore, patients referred to MACH specialists can see the specialist as often as the specialist desires and be referred for any test without PCM authorization. As a result, patients may receive expensive and scarce available care from specialists that could be provided by PCMs. Further, the responsibility for the patient may be lost between the PCM and the specialist, who may not view the patient as his or her responsibility.

#### Lack of Referral Form Standards

Referrals from PCMs in this study lacked standards that can make the consultant's job easier, increase the likelihood of return consultations, and save the hospital money. According to Kongstvedt, all referrals should have a standard format that indicate why the patient is being referred, what the perceived diagnosis is or what they are concerned about, what has already been done, and what exactly the PCM wants the consultant to do (1997).

Although PCMs in general provide some of this information, too often much of it is left out. This may frustrate the consulted provider, making the visit inefficient and potential wasting patient and provider time through duplicate tests or

therapies. Referral standards could also aid in prospective and retrospective reviews. Most importantly however, referral standards may aid in return consultations. For example, some of the referrals reviewed in the course of this study did not request a return consultation. Perhaps the provider felt the referral implied a written consultation request, but having a standard that states whether one is needed may increase the likelihood of its return.

#### Lack of Utilization Capture

One of the most basic requirements for the control and the tracking of referrals, requires a managed care plan to be able to track the utilization of its referrals (Kongstvedt, 1997). In the current system, participants are collecting some of the utilization of referrals; however, at least four different, separate collection systems are used. Furthermore, the data collected is not utilization focused. In fact, the data collected is more for accountability and covering the section in case the referrals get lost in transition between offices.

These databases appear to fall short of their potential for improving the referral tracking process. If elements such as the physician name, the type of diagnosis performed, or reasons for the referral type were added and a consolidation of these databases occurred they could have a significant impact on the process.

Furthermore, there appears to be some utilization capture

in the CHCS system that is not even used. The extent of this resource needs further investigation, but could potentially provide information for provider feedback.

#### No Individual Cost Data Captured

Another of the major weaknesses of the current system is the lack of individual cost data capture. Due to the Bid Price Adjustment resource methodologies, tracking of referrals by individual is not performed. This current system provides little financial incentive and previously under clinic impanelment no provider incentives for individual cost data capture.

Under future resource methodologies such as Revised Financing, however, the local MTF will become responsible for payment of care on an individual basis. In order to do this, the MTF must be able to show who received care by civilian providers in order to reconcile bills from the contractor on a monthly basis. If the experience that MTFs currently under Revised Financing continues, inaccurate cost data capture can result in the loss of hundreds of thousands of dollars (personal communication, D. Coker, 15 March 2000).

#### Specialist Not Chosen Based upon Practice Patterns

The systems analysis also provides evidence that specialist providers are chosen based upon availability and not upon past performance. Additionally, no data or information is captured to reflect the outcomes of these specialist visits. Therefore,

providers and HCFs may be sending patients to ineffective and costly physicians without even knowing it. These providers may ask patients to complete duplicate tests or perform duplicate therapies without the patient's best interest in mind.

#### Technology Not Used to Improve Referral Tracking

The system analysis also showed that the MTF might not be maximizing their technology advantages to improve referral tracking. Current literature suggests using available technology to improve the referral process. These technologies may be as basic as a return mailer for consultations or as advanced as interactive phone services all of, which could be made available.

In addition, there is some evidence to suggest that the MTF's medical information system, CHCS, has capabilities that are not being maximized. These capabilities include improving the electronic referral record and using templates more efficiently.

Other technologies are becoming available to the MTF that may aid the referral tracking at the MTF. These technologies include phone dictation system capabilities, a hospital Intranet, and even basic email. A simple change to more current versions of database software is also needed. Further study is required, however, to determine the extent of the systems capabilities in aiding the entire process.

### Duplication of Responsibilities

One of the major advantages of using data flow diagrams is that they help identify duplication of responsibilities. The data flow diagrams of the MACH referral process point to several key areas of responsibility duplication. These areas include the tracking of referrals with different databases and receiving requests for referral.

At least four different databases and participants are currently involved in the receipt and data capture of referrals. The MHCF, THCF, managed care health benefits advisor, and MACH appointments cell all receive and manage referrals for patients. Unfortunately, these four sections handle information but their databases do not communicate this information with each other. A clearer picture of all referrals could be gained by using a single database to manage them.

### Conclusion and Recommendations

#### Recommendations for Improvement

The following are recommendations based upon the research and systems analysis performed. In general the recommendations follow four principles for improvement. These principles include reduce duplication, consolidate information systems, receive feedback to improve the process, and eliminate unnecessary tasks.

#### Track Referrals on an Individual Basis

With the change in resource methodologies and the

imperative to optimize services, MACH should track all referrals on an individual basis. This will give PCMs a valuable tool to perform their daily job of managing impaneled patients, especially those referred to specialists. This tracking should include all patient referrals regardless of whether they are referred to MACH or civilian specialists.

Secondly, by tracking these referrals, the MACH staff can use the information collected to maximize its available services and avoid costly referrals to civilian specialists. If the improved systems are designed properly, the leadership could even use this information to make strategic decisions regarding the advisability of expanding or limiting specific services at the hospital.

Furthermore, best referral practices and outcomes studies could be designed using this information. Once data is collected and analyzed on an individual basis, the most efficient and effective PCMs could be identified. The leadership can then educate other PCMs on how these providers operate. In total, MACH can improve its access, quality, and even reduce costs by tracking referrals to the individual patient and provider level.

#### Consolidate Processing of All Referrals to a Central Office

In order to increase the efficiency and effectiveness of the system, all referrals should be processed at a central office. Presently, the MHCfs process routine referrals from

MACH PCMs, the THCFs process referrals from civilian PCMs, and the MACH appointment center and a managed care representative process emergency referral requests. As a result, there is no single point of contact in which to begin the tracking process, insure all policies and regulations are followed, and maximize services at MACH. By having a single office process all referrals significant efficiencies and economies of scale could be gained not only in tracking referrals but also through service optimization.

#### Improve and Consolidate the Referral Database

Further efficiencies could be gained by consolidating and improving the databases that track all referrals from both MACH and civilian PCMs. Presently the referral tracking performed at MACH and by the TSC is more of a protective measure in case of lost referrals. Referrals are only tracked as they leave the MHCF office and are as they are received by the THCF.

In addition, the database programs used to track the referrals are antiquated and not transferable. By using a shared database with the latest technology such as Microsoft Access, MACH leadership can track referrals from start until returned to PCMs.

The database could also track specific measures for research or for future improvements. Examples of potential fields in a database include defining reasons for rejection of MACH specialist, PCM referring, and the referral specialty

(Kongstvedt, 1997). Each field could use "pick lists" that allow the user to pick from a menu of options rather than typing in different responses.

Finally, the database could generate return mailers, as the appointment is booked. This return mailer could be sent to the patient or specialist for quick and rapid return of consultations to the PCM. Using the shared database, open referrals could be then closed by support staff and the referral would have a completed action.

#### Educate PCMs on Referral Implications

As Forrest et al (1999) recommended, since the most common reason for referral in their study was to get advice from a specialist, using the top 50 referrals as education to PCMs may prove useful. By tracking referrals in a consolidated database, the medical staff can review the top referrals of all providers as well as by individual provider. After researching this information, the staff can create education programs that focus on preventing referrals to specialists. This should not only save money and optimize services, but also the requirement for fewer office visits may increase patient satisfaction.

In addition, PCMs could be made sensitive to the costs of referrals by providing each PCM a summary of their monthly cost implications. This could include a list of the provider's top referred diagnostic tests, pharmaceuticals prescribed and top referrals to specialists. By providing this information to

PCMs, the leadership may gain PCM support in cost conscious decisions but more importantly in improving patient outcomes.

#### Continue to Refer to other MACH PCMs

Often PCMs refer to specialists with some uncertainty (Kinnersley et al., 1999). In order to prevent unnecessary referrals to costly and busy specialists, often PCMs can consult with other PCMs. Kinnersley et al (1999) found that referral to another PCM is acceptable to patients and provides a straight forward means of addressing uncertain referrals.

Since this represents one of the strengths of the current system, not much needs to occur to make this recommendation a reality. However, PCMs should continue to educate each other on the results of these referrals and perhaps document this information for education of future PCM.

#### Research the Quality and Medical Appropriateness Reviews at MACH

Since the TRICARE Service Center has contractual obligations to review all referrals sent to them for specific criteria, the quality review at MACH could potential be eliminated. This would save routine referrals time in processing and get patients to their appointments quicker. However, the medical staff should conduct research into the total returned referrals from the TSC to see if this is actually feasible or not. Then an informed decision should be made on whether or not MACH should perform quality assurance on all

referrals.

Reviews for medical appropriateness should also be reviewed. Presently, only three specialists perform reviews of medical appropriateness. Further research should be conducted on a continuous basis to determine which specialty referrals should be reviewed for medical appropriateness.

#### Explore Technology Options for Improvement

In the current system technology is not used or even being investigated for future improvements. Since referrals have the potential of significantly impacting this organization financially every resource involved in the process should be viewed to increase the efficiency and effectiveness of the process. In particular, interactive voice technology (Barhoumy & Bitter, 1999; Bergeron, 1997; Terry, 1999) and the Internet should be researched for potential improvements to the entire process.

#### Create Referral Form Standards

As discussed earlier, referral form standards should be created in order to increase the likelihood of an efficient visit and a return consultation. Specifics should address why the patient is being referred, what the perceived diagnosis is or what they are concerned about, what has already been done, and what exactly the PCM wants the consultant to do (Kongstvedt, 1997). In addition the standards should include the number of visits authorized. This will especially help prevent patients

from getting lost to MACH specialists.

#### Analyze Referral Data

Using the consolidated referral database and CHCS, the leadership of MACH should review information regarding the referral process for continual improvement. Issues researched could be total referrals made by all PCMs, groups of specific providers such as all Physician Assistants, and by individuals. The information gathered through this process could be used to determine the best practices performed by PCMs and as stated above, aid in education programs.

Further, once data is collected on total referrals, the MACH leadership could then determine its referral rate. This rate can then be used to benchmark against the national HMO average as suggested by Kongstvedt (1997). This will provide a basis on which to determine if PCMs are over referring or even under referring. The rate should not be used as a driver of change, but as a means for further investigation of the system.

#### Initiate Return Mailer with all External Consults

One of the major problems of the present system is the lack of returned consultations from civilian specialists. Curry et al recommends an inexpensive method that increased consultant returns from 39% to 60% and reduced the median time between the visit and receipt of the consultation (1980). This method may be a feasible way of providing PCMs with increased faster consultation returns. Therefore, research should be conducted

to determine the true return rate and then if perceptions of low rates are accurate, MACH could institute a return mailer. Using the consolidated database and using the PCMs name as the recipient, the HCFs could even generate a mailer label when referral authorization for civilian PCMs are created.

### Systems Analysis Recommendations (After Review)

Using the systems analysis results, literature review, and discussion, an updated referral tracking system is proposed (See Appendix B). Again, data flow diagrams are used to identify the changes to the process. Further, a verbal description of those activities that can not be described with diagrams is also provided.

### Main Task: Track Referrals.

The main task represents an overview of the entire system redesign (See Appendix B). It differs from the initial systems analysis by a reduction of Task 1.3 Refer to Specialist From Civilian PCM. The change represents a principle followed throughout this revised system of reducing duplication of responsibilities. Therefore, the overall main task now represents a total of eight instead of nine tasks.

### Task 1.1: Initiate ROUTINE Referral

In order to improve the overall system, this task requires four changes (See Appendix B). First, all referrals for TRICARE Prime patients should pass through a single office. Presently, civilian PCMs send referrals to the TSC. At the TSC, the THCF

do not have access to all available appointments and therefore may send patients out to civilian specialists when space exists at MACH.

Next, referral standards should be created and followed by all PCMs. This will aid specialist consultants in order to perform more efficient visits, reduce patient frustration from nonproductive visits, possibly speed return of consultations, and reduce costs for duplicate visits, tests, and procedures. Research should first be conducted to define these standards and a policy manual should be created to aid PCMs. Additionally, the electronic referral form in CHCS should be reviewed to reflect these standards in order to make the policies easier to follow.

Third, all referrals should be entered into CHCS whenever possible. The only exception to this rule should occur if CHCS is down for an extended duration. If PCMs cannot enter their referral requests into CHCS, they should complete the written 513/2161 and at a later date and their support staff should enter the consults electronically into CHCS. This will aid in the speed of the patient referral to a specialist, reduce the amount of referrals lost or delayed, and allow specialists to review the referral electronically for medical appropriateness.

Finally, the guidance provided to patients should also change. Rather than PCMs requesting patients to make a follow up visit, PCMs should instruct the patient to request that the

consultant forward their results to the PCM. Next, the PCM should instruct the patient to wait a specific amount of time before initiating contact with the PCM. This will allow PCMs to review results of the specialist visit and to determine the appropriate course of action for the patient. This updated guidance should allow PCMs to proactively manage their patients rather than reactively managing them when they return from the specialist.

#### Task 1.2: Initiate Urgent Referral

Two changes to this task are recommended (See Appendix B). First, rather than PCMs randomly choosing specialists, a preferred specialist list should be designed based upon feedback from patient referrals. The managed care office could then gather this information to indicate which specialists are best for MACH patients. Then a copy of the most updated listing of specialists should be provided routinely to PCMs. This will increase the chances that more appropriate specialists are chosen for best patient outcomes and satisfaction. In addition, this will insure that the government's money is spent in the wisest manner.

Second, the database in which referrals are tracked should be consolidated into a single "Referral Database" that tracks all referrals from PCMs both internal and external. This will consolidate all referrals and allow for research and optimization of services within MACH.

Task 1.3: Refer to Specialist from Civilian PCM

This task should be eliminated and all referrals should be sent to the MHCF office (See Appendix B). This will reduce redundancies and optimize the space used at MACH rather than sending patients to costly civilian providers.

Task 1.4: Receive Emergency or Urgent Treatment

This task has one change from the original system, which centers on reducing duplication of services (See Appendix B). In the present system, patients who receive emergency treatment call within 24 hours of their visit and request approval through the MACH Appointment Center. In the recommended system, the requests should be received by the MHCF office, entered into the consolidated referral database and forwarded to the patients PCM for approval. Upon its approval, the referral should be returned to the MHCF and forwarded to the TSC.

Task 2: Review MACH Referral for Medical Appropriateness

The recommendations for this task include potentially eliminating the quality assurance review and receiving written referral tasks and implementing an electronic medical appropriateness review (See Appendix B).

Since the TSC has contractual obligations to review all referrals against Milliman and Robertson criteria, OCHAMPUS policies, and Humana policies, MACH quality personnel should not be performing this task. Furthermore, the current system has two days delay built into the system for a quality review that

is not being performed. By eliminating this step, the MHCF can process the referrals faster.

Next, all written referrals should be entered into CHCS to facilitate a faster and more efficient processing by the MHCF. This should eliminate some lost referrals and maintain a more complete patient database in CHCS.

Finally, medical appropriate procedures should be reviewed in an attempt to create electronic review rather than paper review and insure that the appropriate specialists are reviewing referrals. With an electronic review, providers can provide faster feedback. In addition, research should be conducted to determine if questionable referrals are being reviewed for medical appropriateness. Once evidence has been gathered, these specialists should also review these referrals.

### Task 3: Maximize Referrals to DoD Specialists from MACH

#### PCMs

The major changes to this task involve using a single consolidated referral database that tracks all referrals and not just those sent to the TSC. By tracking all referrals from PCMs, the organization can get a better perspective of the initial referrals. This will also provide a foundation on which to compare total visits to civilian specialists. Therefore, the MHCF should track booked appointments to MACH specialists, other DoD facilities, supplemental care, and all patients transferred to the TSC.

Task 4: Refer to Civilian Specialist from PCM

The recommended change for this task is to have the THCF use the consolidated Referral Database to track referrals received from the MHCFs. The Referral Database should be a shared database for the TSC to access and update as received. This should cut down on the amount of work performed by the TSC and enable them to perform other tasks as recommended.

Task 5: Feedback to PCMs

The recommendations for this task offer perhaps the most key improvements for the entire system. Three additional tasks are recommended. These tasks may ultimately reduce patient, provider, and specialist frustration while saving time and money.

First, the MHCF or the THCF should provide patients and consultants a return mailer addressed to the PCM. This should increase the rate of consultation return (Curry et al., 1980) and place the consultation in the hands of the PCM. This will allow PCMs to determine the need for a follow up visit and the ability to proactively contact patients rather than having patients initiate a visit for follow-ups. This can save PCM appointments and keep patients from having to visit the facility unnecessarily.

Further, using this information, PCMs can develop procedures to capture feedback on specialists. This information can be used to provide PCMs with guidance on which specialists

to choose in case of urgent referrals. Even the TSC could use this information in order to determine the best most efficient specialists for routine referrals.

A final but key recommendation is for PCMs to use the referral data gathered from patients and consultations in order to educate themselves on best practices and to track their referrals. As recommended by Forrest et al. (1999) the MACH leadership could use the information on the top 50 referrals to educate PCMs on appropriate and inappropriate referrals.

Although the PCMs educate each other informally the use of objective data could dramatically improve the process and identify specific areas that can be further refined. This could prevent patients from having to visit specialists that are not available for long periods. In total, money and time can be saved through continuous education of PCMs.

#### Recommendations for Further Study

There are three factors that will change in the future and may create opportunities for further improvement and research. First, the TRICARE Service Center (TSC) is presently located approximately 1 mile from the hospital; however, there are plans for it to move within the hospital. With additional research on location designs, this move could create opportunities for even further efficiency.

Second, the Composite Health Care System (CHCS) will be upgraded to an improved program termed Composite Health Care

System II (CHCS II). Research needs to be conducted to determine if this system solves some of the current challenges or even creates additional ones.

Finally, as the process of "PCM by Name" matures, PCMs may require additional tools to track referrals. Therefore, further research needs to be conducted to determine what these tools are and how they can improve the process.

### Conclusions

The systems analysis performed in this study exposed numerous inefficiencies and opportunities for improvement. In particular the current system has duplication of responsibilities, information systems that perform similar functions but are not linked, lack of feedback, and unnecessary tasks. By implementing and/or researching the recommendations proposed in the study, the MACH leadership can alter its current business processes to meet the challenges facing it presently, optimize its services to save money, increase outcomes and satisfaction, as well as prepare for the inevitable changes of the future.

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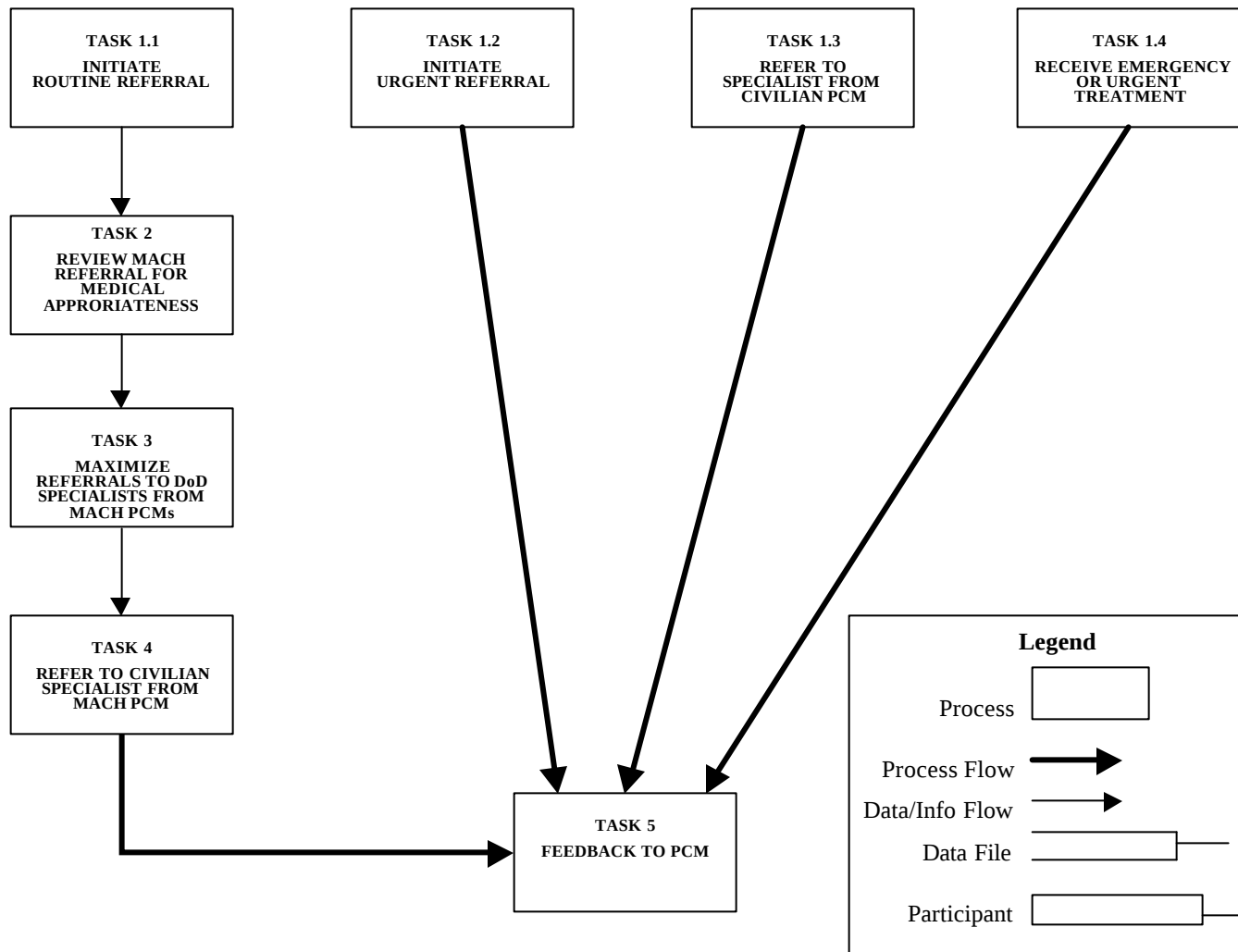
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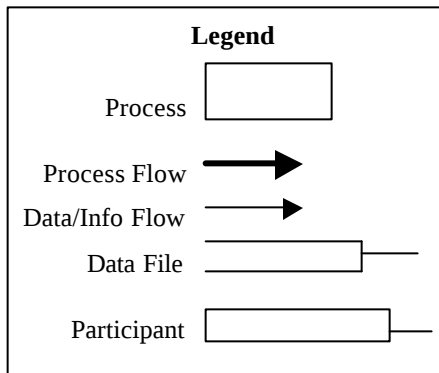
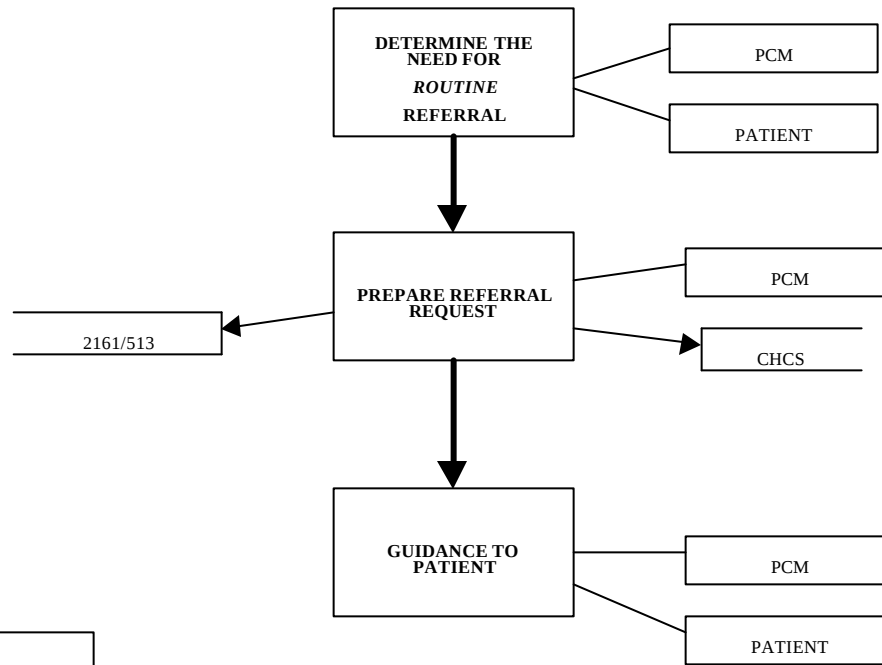
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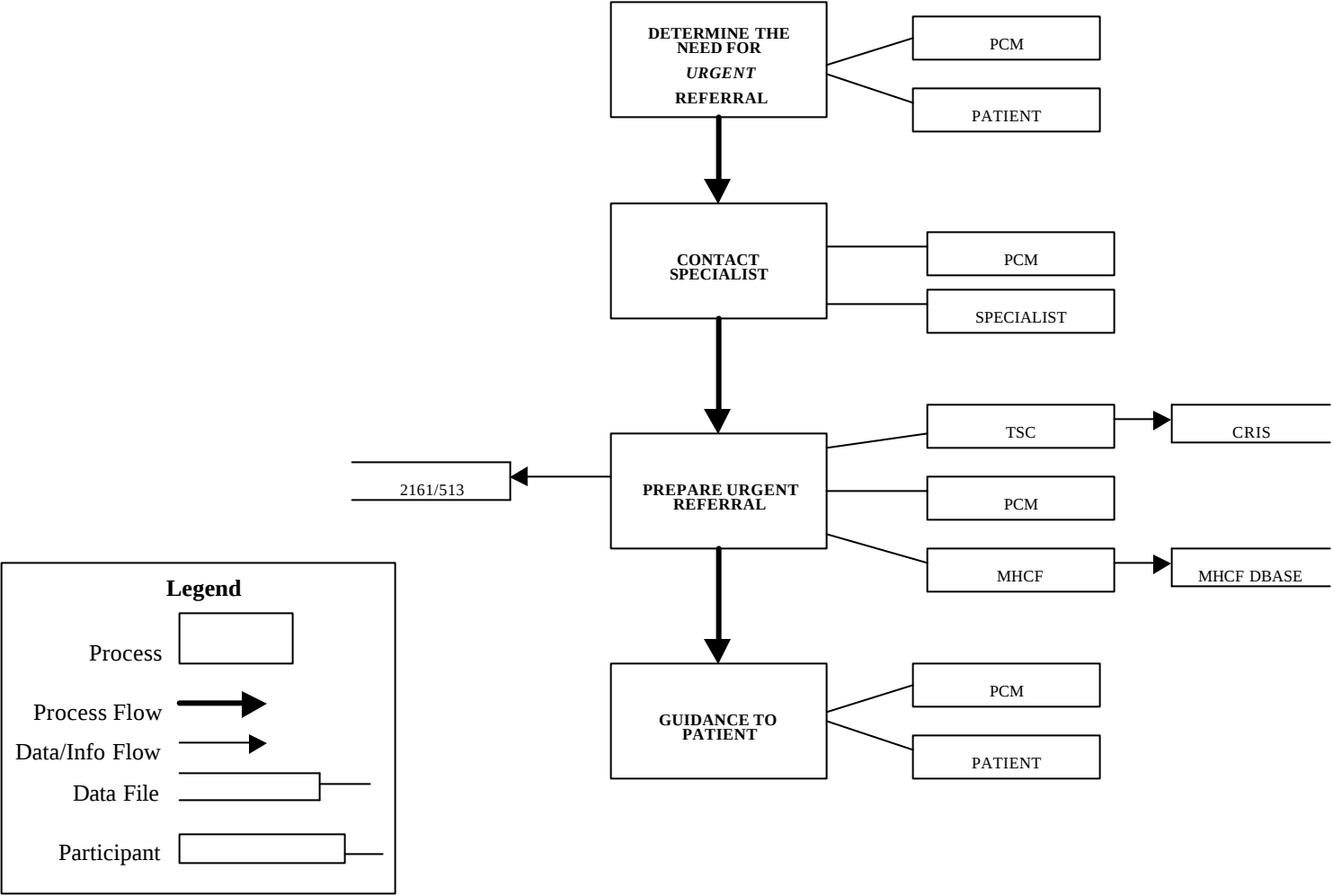
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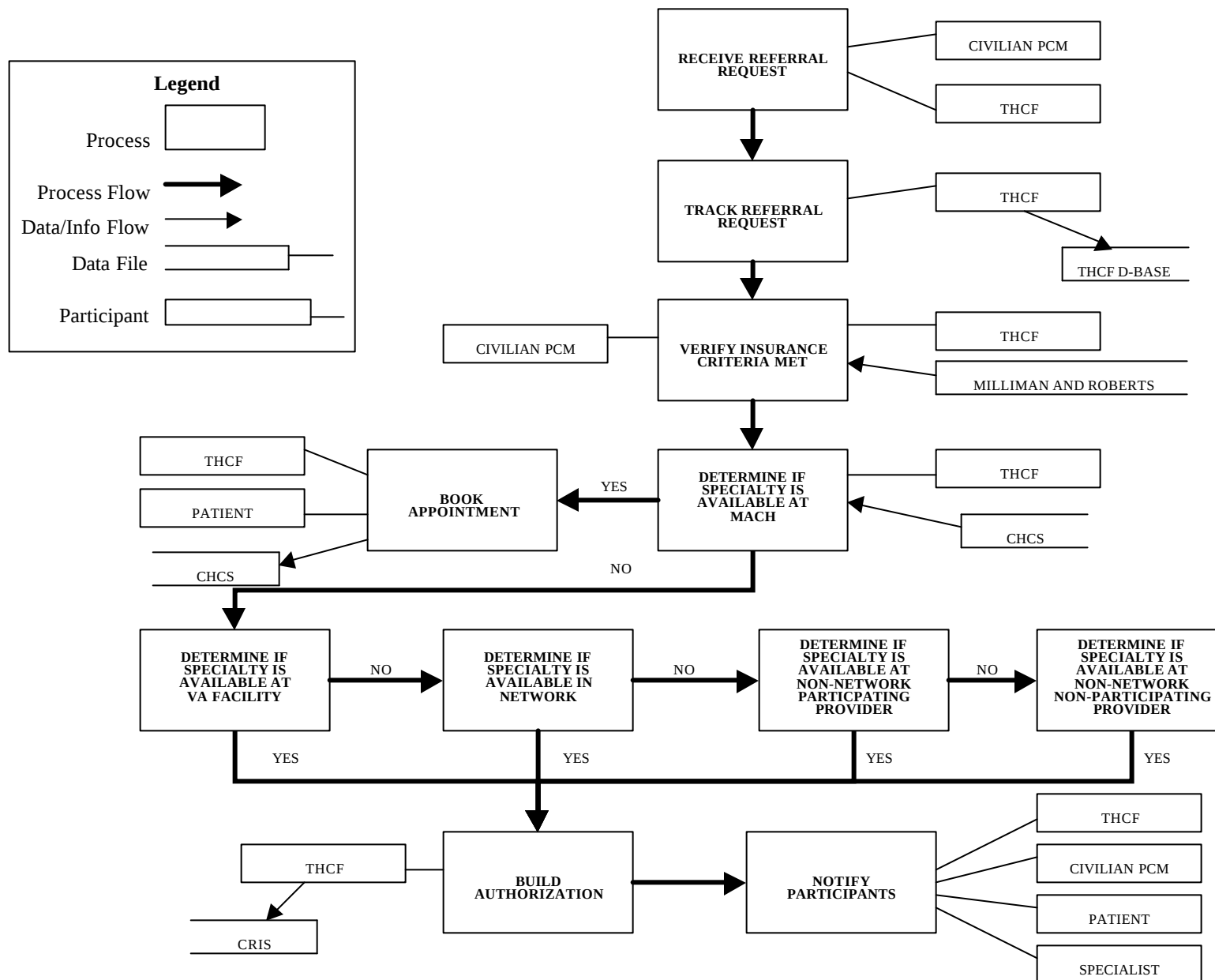
## Task 1.1: Initiate ROUTINE Referral



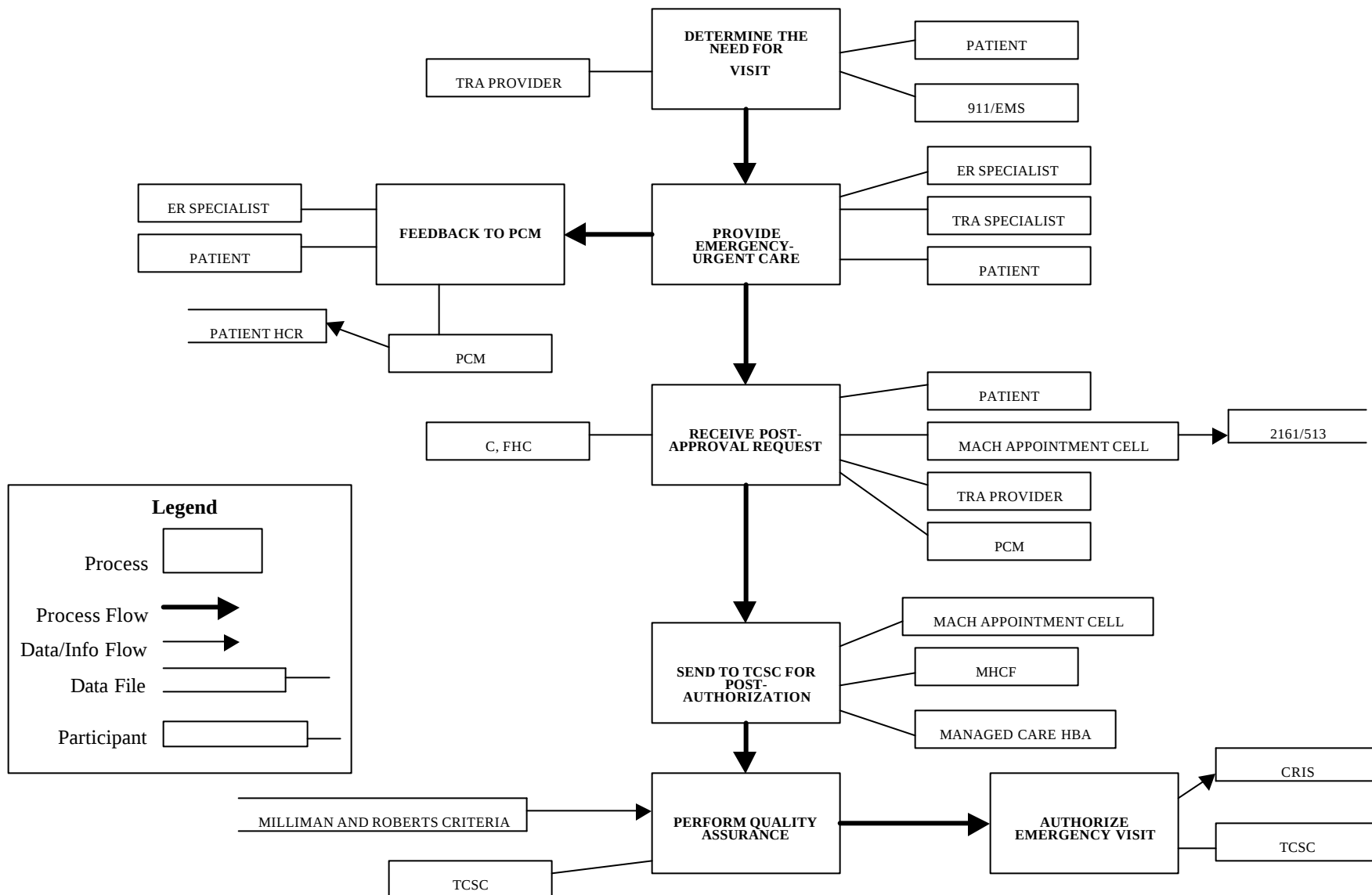
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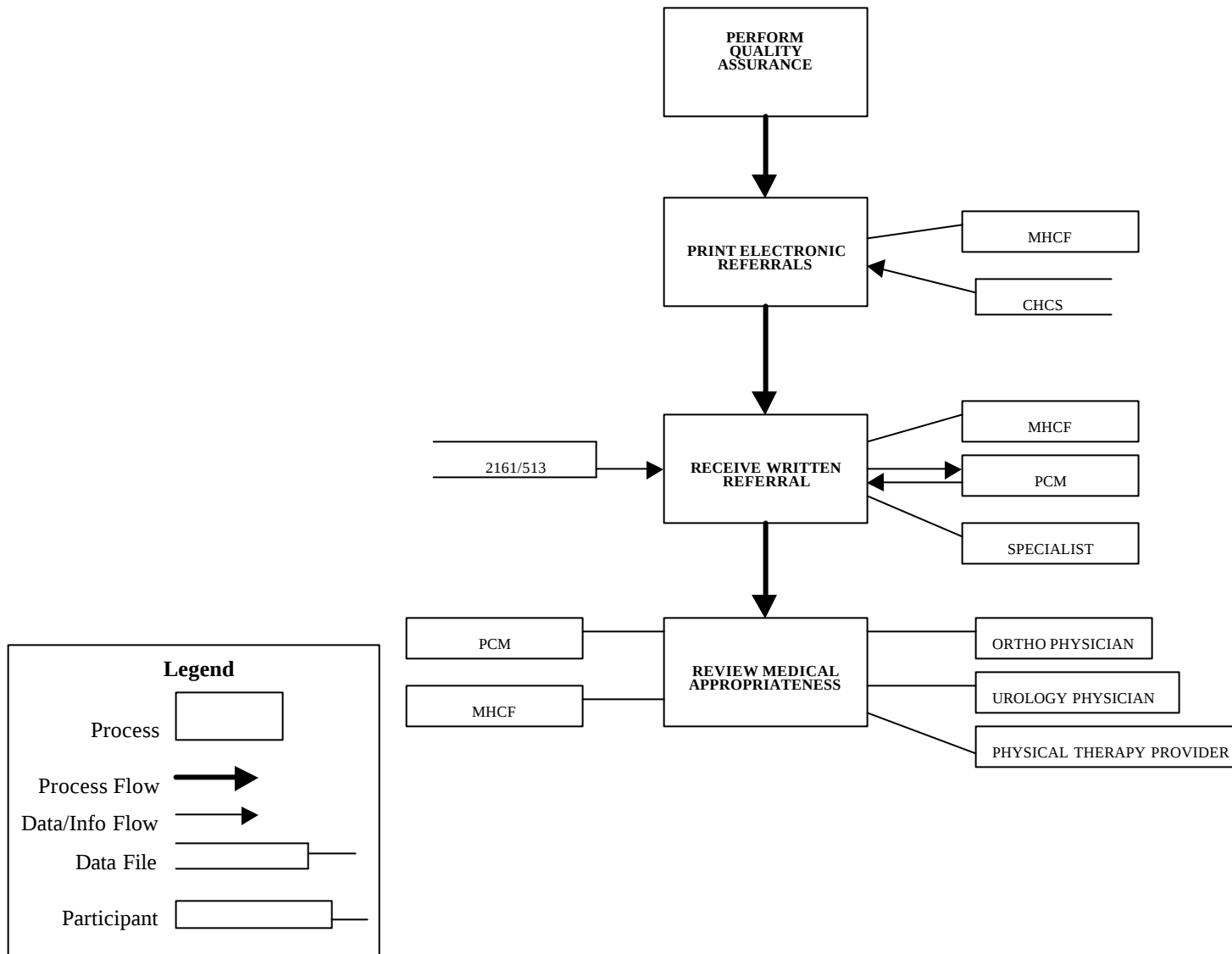
## Referral Tracking Process 85



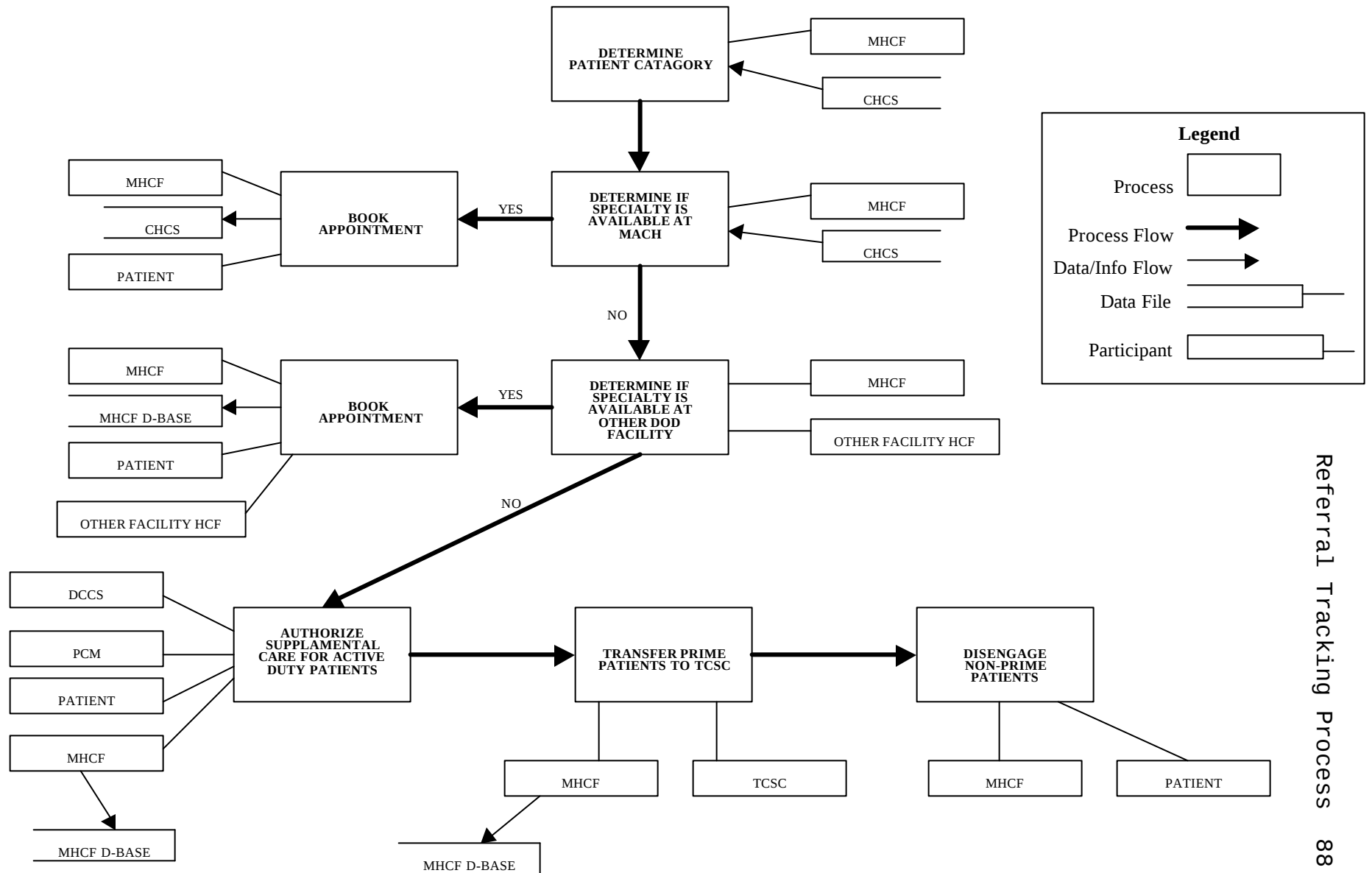
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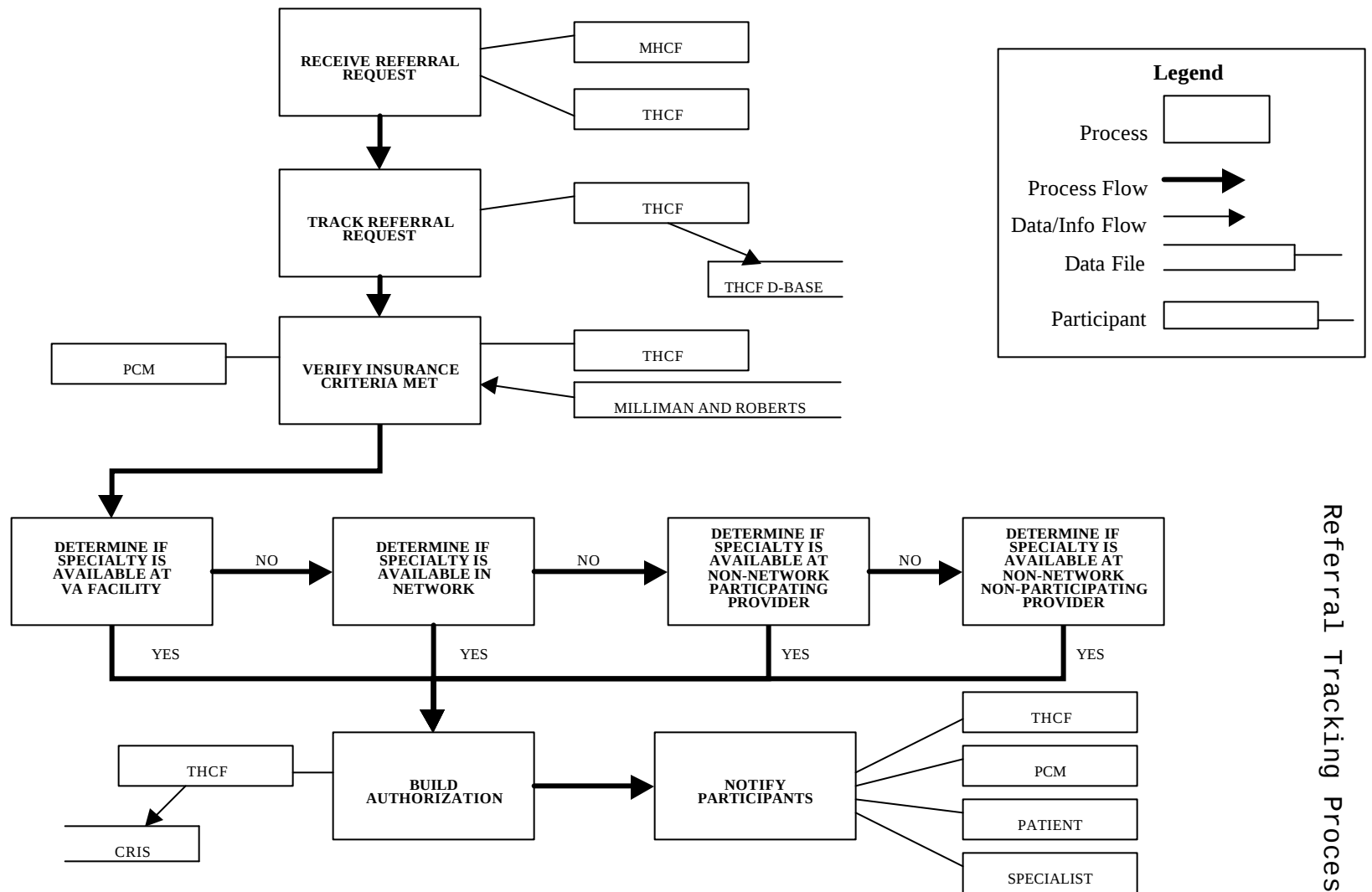
## Task 2: Review MACH Referral for Medical Appropriateness



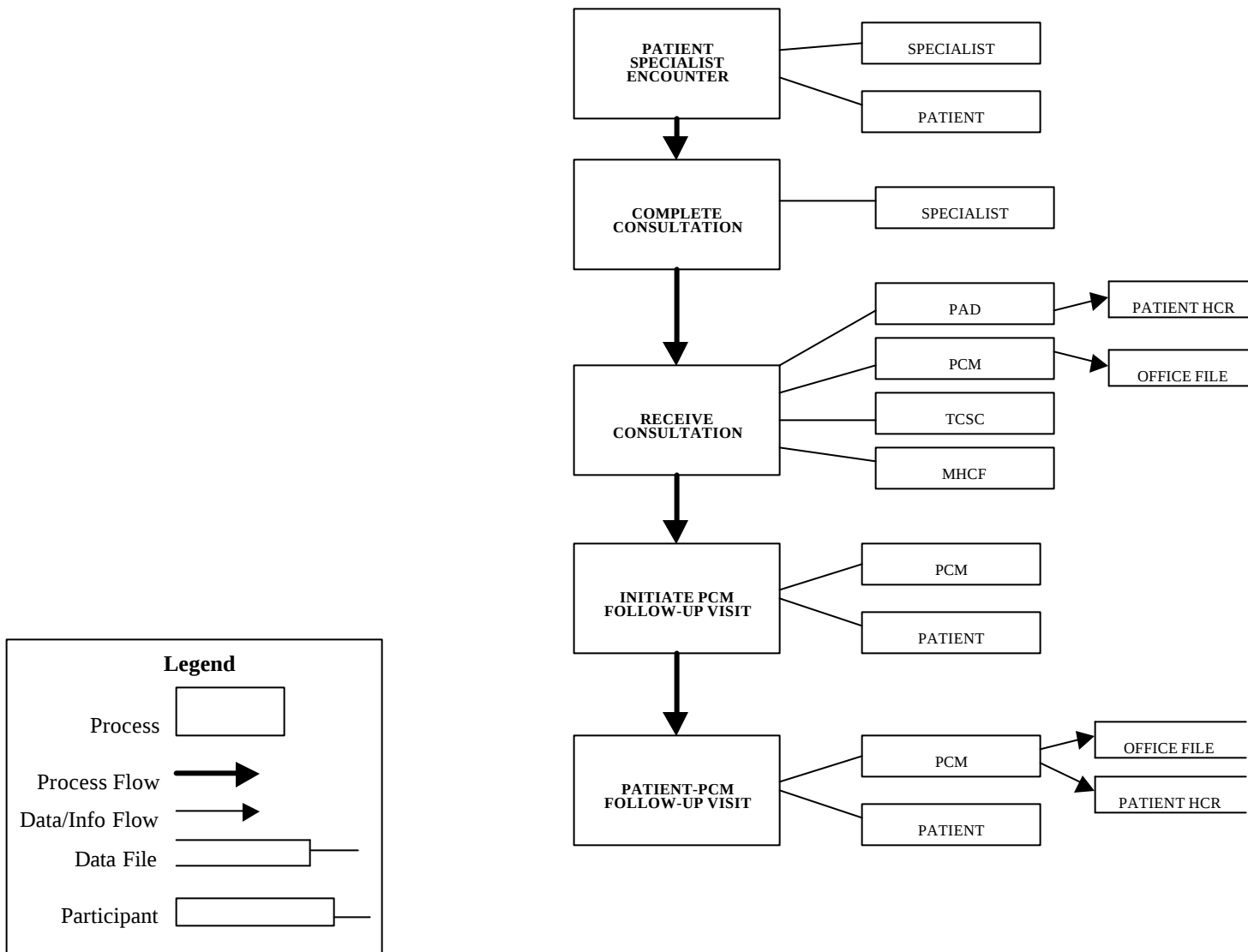
### Task 3: Maximize Referrals to DoD Specialists from MACH PCMs



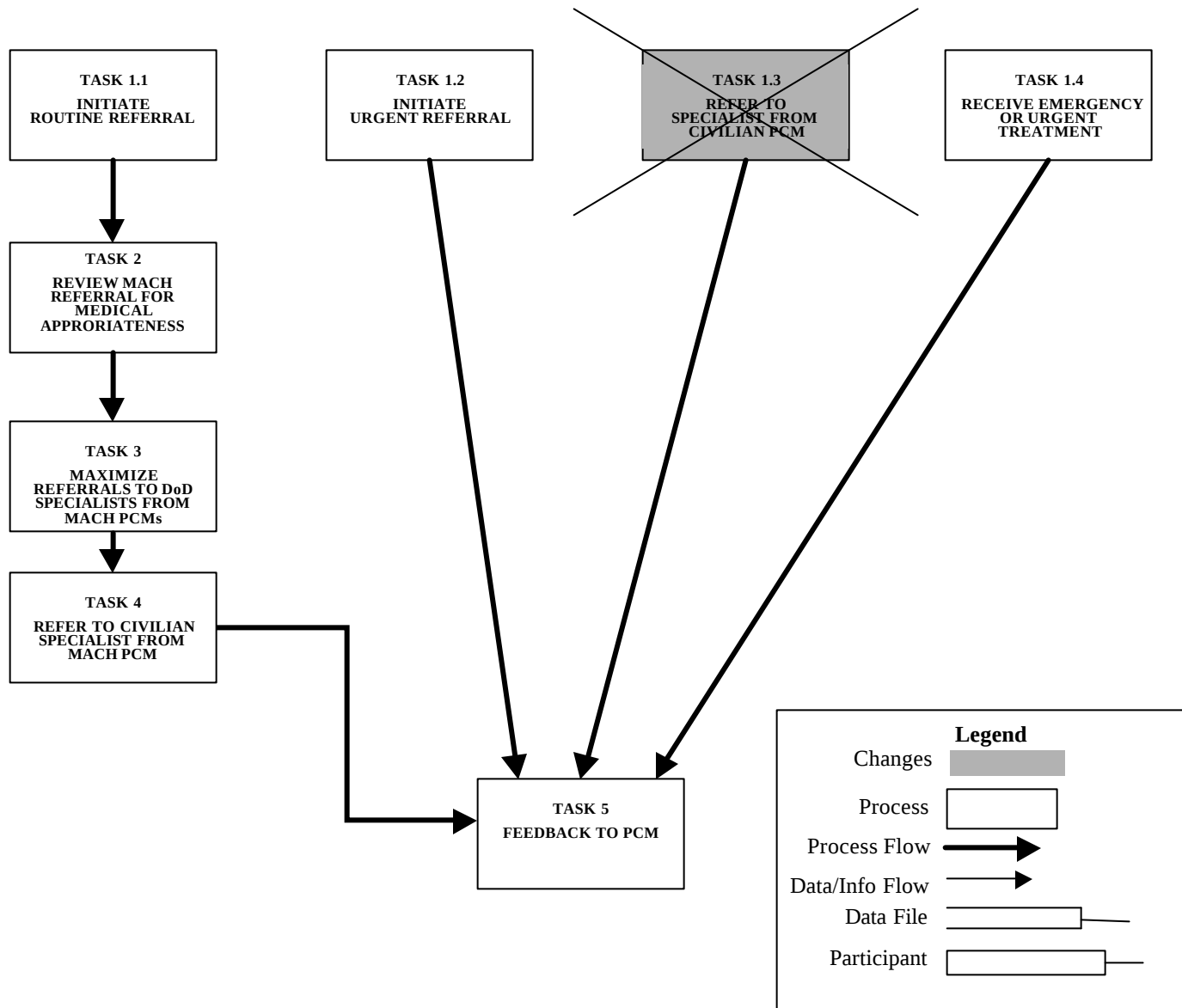
### Task 4: Refer to Civilian Specialist from MACH PCM



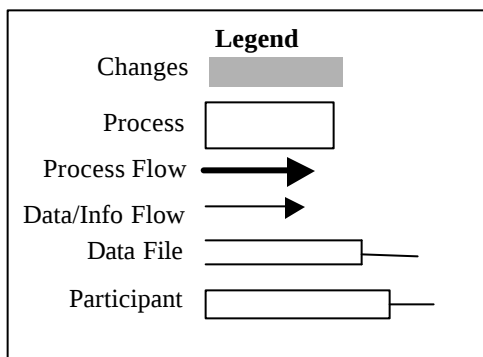
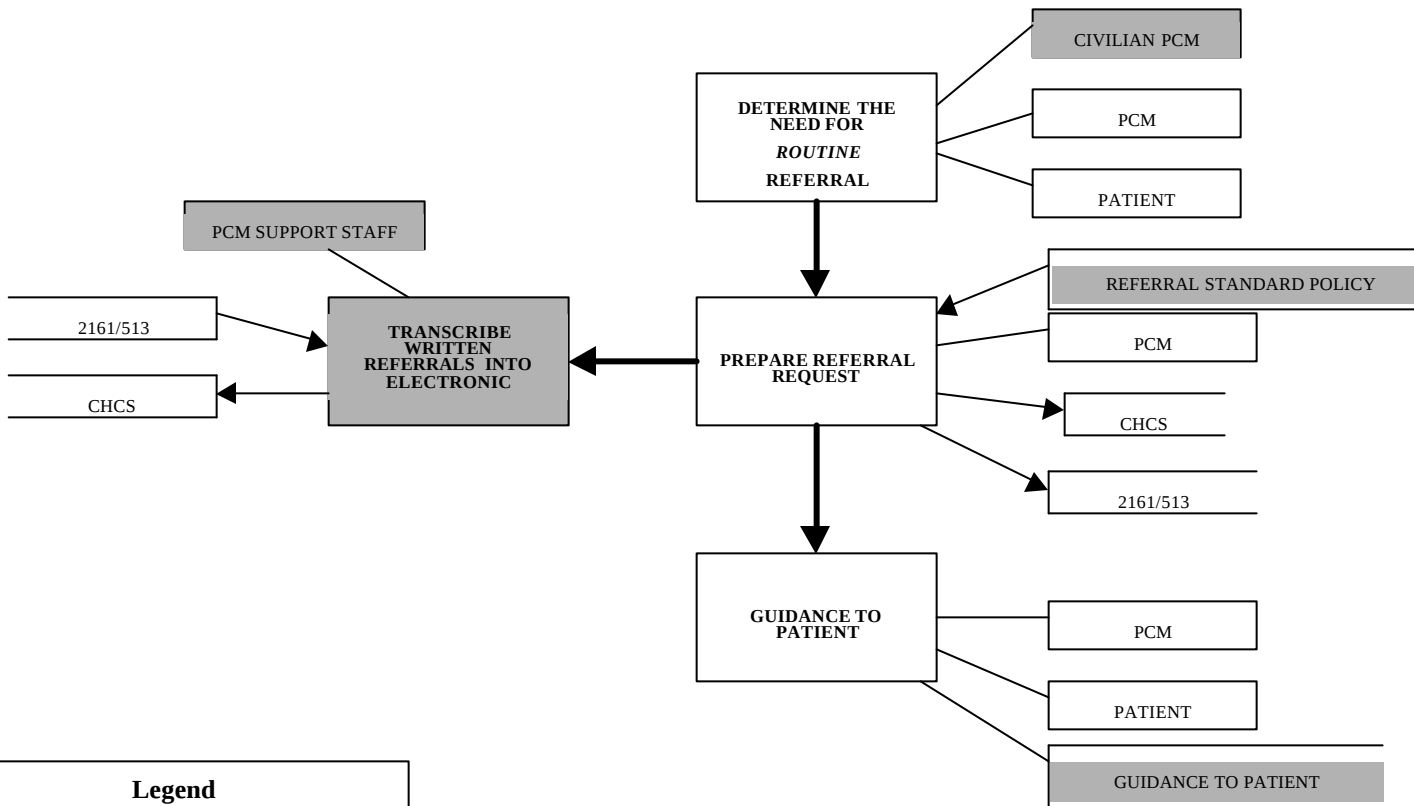
## Task 5: Feedback to PCMs



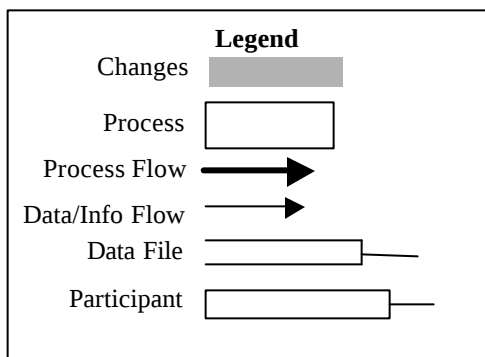
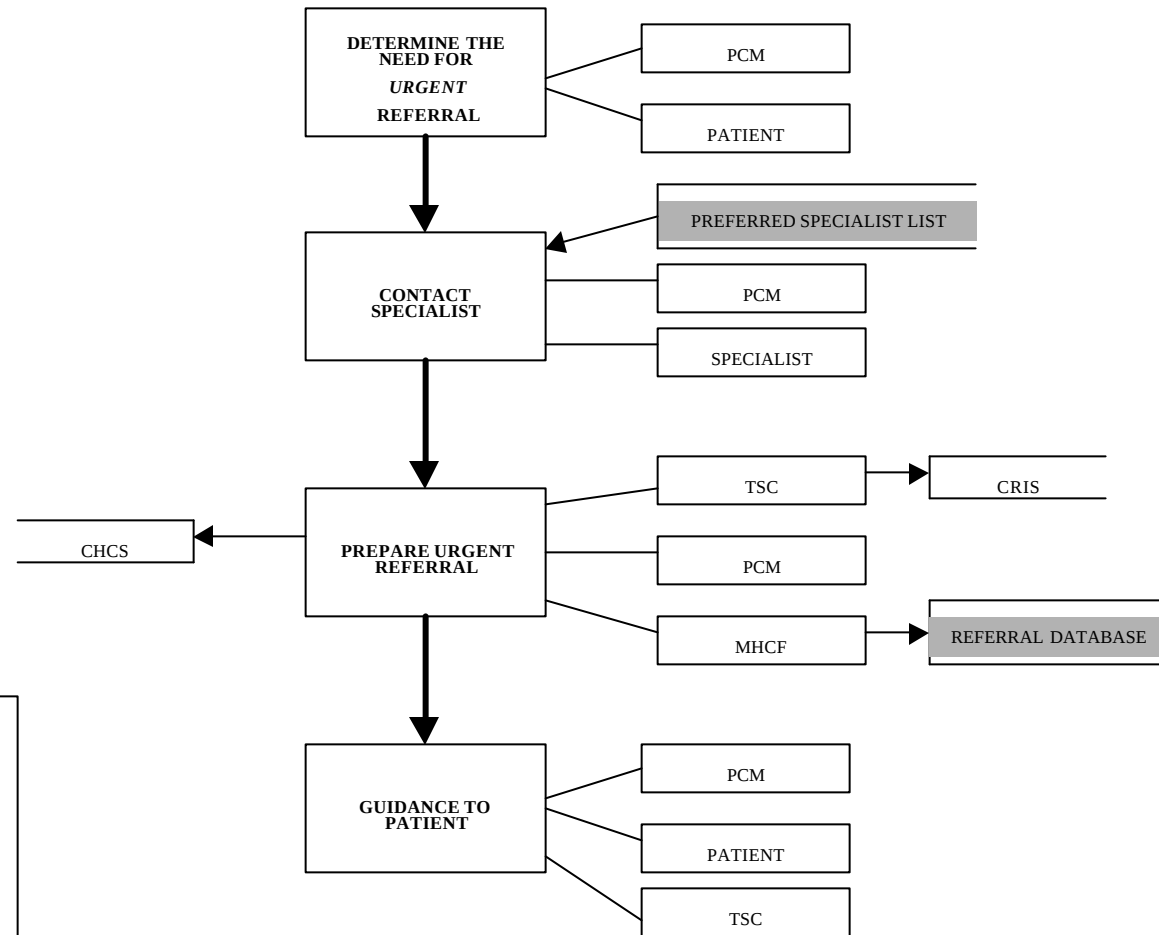
## Main Task: Track Referrals (After Recommendations)



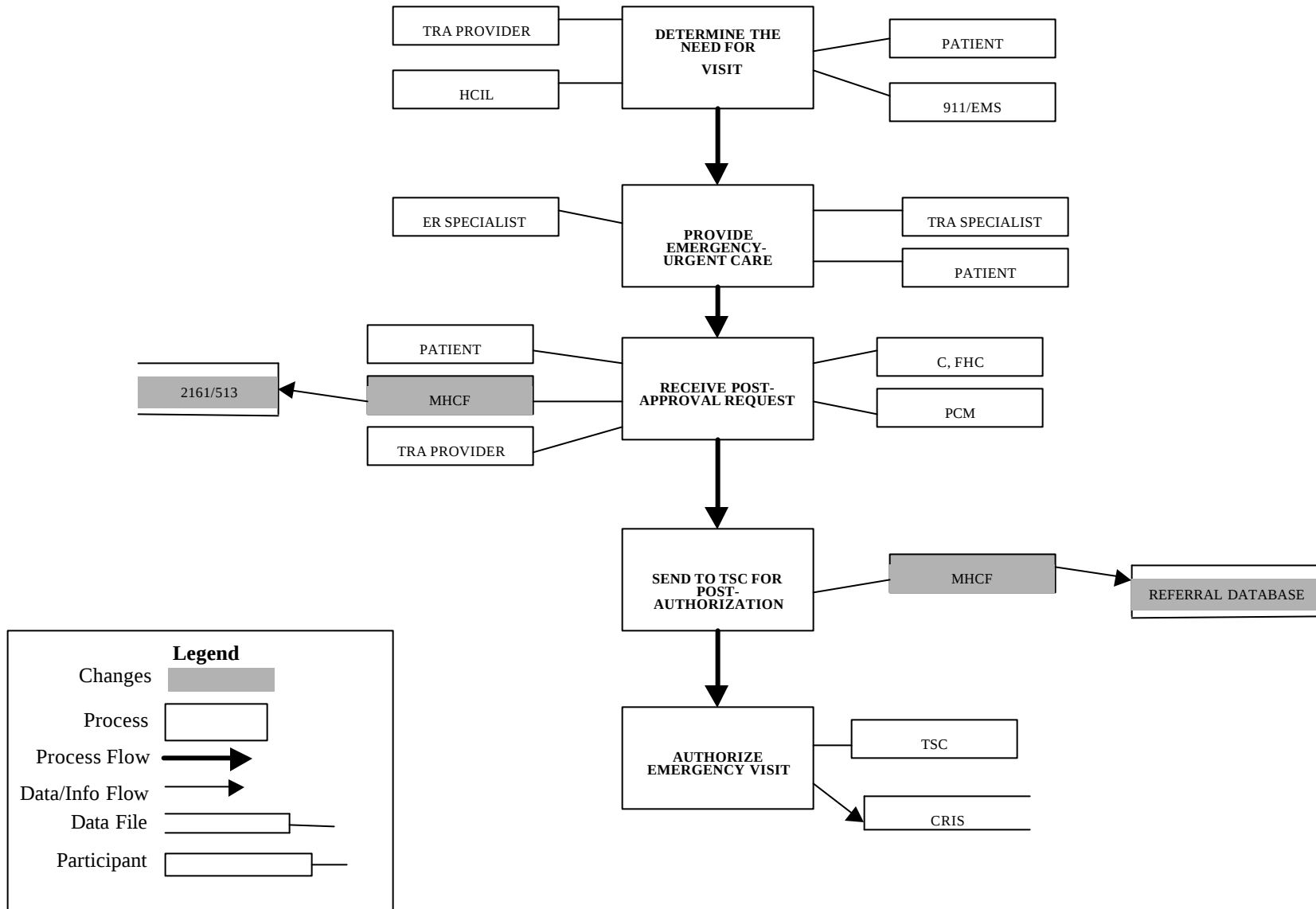
## Task 1.1: Initiate ROUTINE Referral



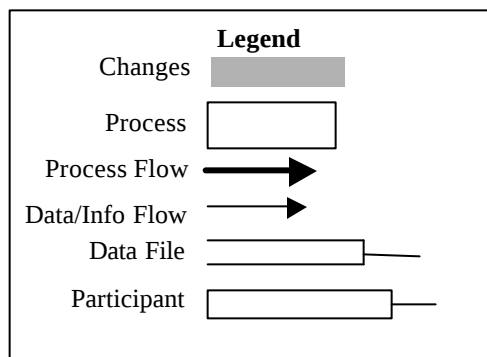
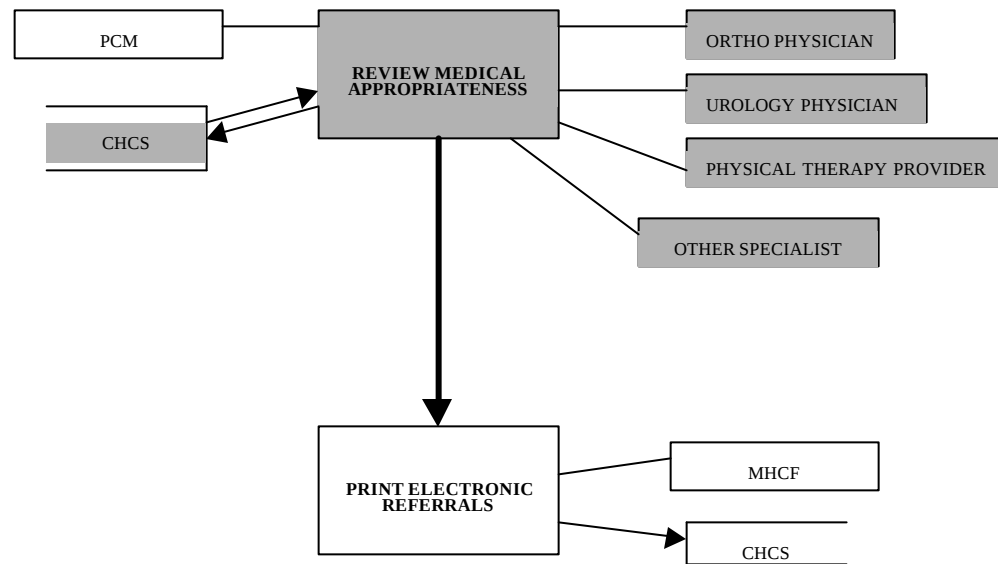
## Task 1.2: Initiate URGENT Referral



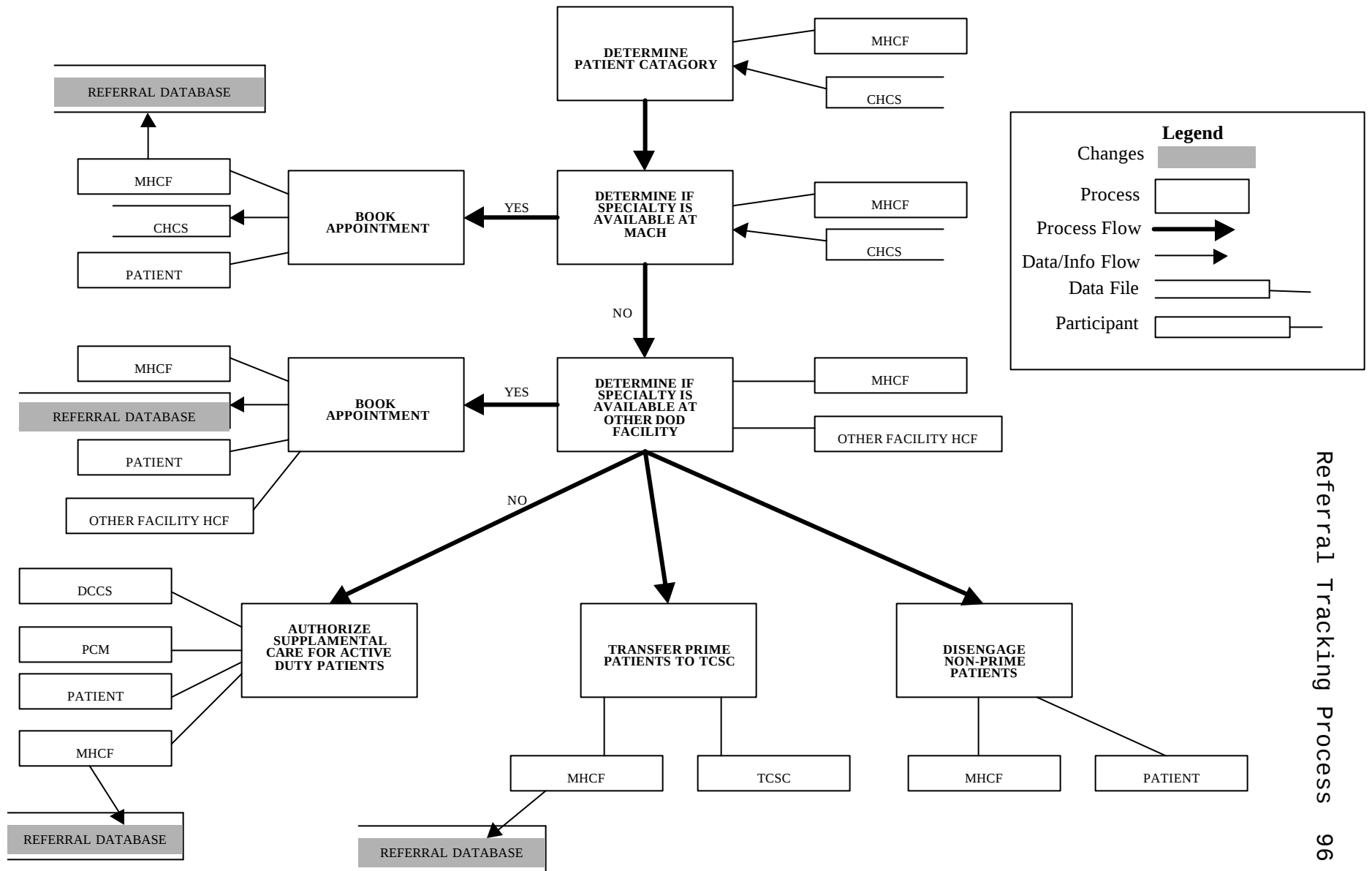
## Task 1.4: Receive Emergency or Urgent Treatment



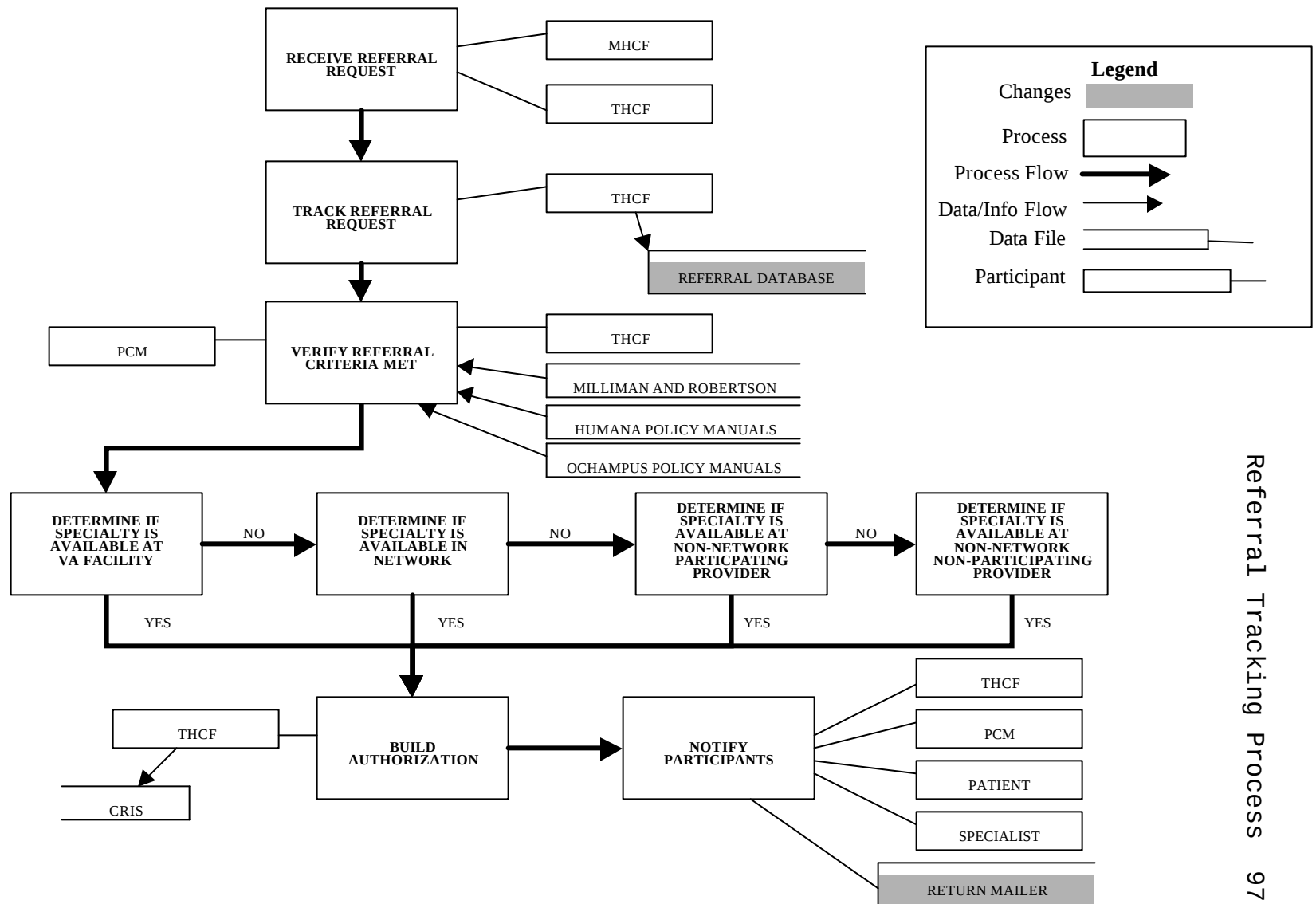
## Task 2: Review MACH Referral for Medical Appropriateness



### Task 3: Maximize Referrals to DoD Specialists from MACH PCMs



## Task 4: Refer to Civilian Specialist from PCM



## Task 5: Feedback to PCMs

