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Interdisciplinary Healthcare Teams

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Abstract

Interdisciplinary healthcare teams have emerged in response to dilemmas that arise when healthcare professionals operate in their own silos. The benefits of interdisciplinary teams has been widely touted as the answer to patient safety and other desirable health outcomes. The 2001 Institute of Medicine report identified six dimensions for quality 21st century healthcare: safe, effective, patient-centered, timely, efficient and equitable. This paper explores the dynamics of interdisciplinary care teams in healthcare organizations in the United States. It hypothesizes that, when an interdisciplinary care team model is used, patient outcomes and staff satisfaction will improve. Based on the review of the existing research literature, the impacts of interdisciplinary teams on the key patient outcomes is examined: inpatient length of stay (LOS), readmission rates, medical errors and team communication, rates of Adverse Drug Events (ADEs. Further the impact of interdisciplinary teams on staff attitudes and satisfaction, interdisciplinary collaboration, and overall patient satisfaction are examined for their subsequent impact on healthcare outcomes.

In this review, some clear benefits of interdisciplinary care were found relative to a decline in length of stay, decrease in adverse drug events, and improvements in staff communication with other team members. There was no positive relationship with readmission rate and not all professionals experienced the same degree of satisfaction with communications within the team.

Introduction

The vast benefits of interdisciplinary healthcare teams are resulting in widespread adoption of team-based healthcare models in the United States. Interdisciplinary team care can be defined as “the structured working practices that dictate which different healthcare practitioners interact together to contribute to patient care, as well as when and how they do so,” (Pannick, et al,2015, p. 1289). This methodology of providing care is needed due to the limited scope and breadth of knowledge of each clinical discipline. Clinicians are accustomed to operate in silos and patients are paying the price of the limitations of offering care in this way.

The safety of the patients receiving care is in jeopardy when clinicians are not working together and sharing their knowledge.

Operationalizing collaboration with different disciplines has been met with both enthusiasm and hesitation from clinicians, due to existing traditional models of interaction. Organizations that have a hierarchal culture place an emphasis on a formalized and structured workplace (Belasen, Eisenberg, & Huppertz, 2016, p. 18). In the traditional hierarchal model of healthcare, the physician is the primary leader and decision maker and guides the entire care journey of the patient. The physician is rarely questioned and does not seek input from other disciplines. The physician recommends therapies, medicines, and other interventions based on their clinical decision-making process. This decision-making process traditionally involves consulting other specialists and their attending physicians in the inpatient setting. There is often a mid-level provider, a nurse practitioner or physician assistant, involved in the decision-making process in the ambulatory setting. Traditionally, pharmacists, nurses, medical assistants, and other therapists are left out of the decision-making process and are expected to follow-through on physicians' orders with little input. This lack of consideration of other disciplines' input as subject matter expertise can be detrimental to the patient.

The concerns that physicians have about changing this traditional hierarchal system stem from role and clinical staff variability, as well as being inflexible towards change. Role variability is when "team members may play a number of different professional roles that go beyond their speciality," and clinical staff variability is when "members may join and leave a team at different stages of workflow variability," (Wilk, et al., 2016, p. 41). These are relevant to team dynamics because developing cohesion as a team is challenging when team members are playing a variety of roles outside of their traditional areas of expertise and when they are not consistently present in the team. Team members joining and leaving at different stages is inevitable in inpatient care, where the units must be staffed 24 hours a day. Also, physicians may be nervous about staff carrying roles outside of their specialty due to their lack of knowledge or clinical expertise in an area.

Team-based care is relevant in today's healthcare landscape because it has the potential to improve patient safety. In the report published following *To Err is Human*, entitled *Crossing the Quality Chasm* (2001),

the Institute of Medicine focused on changing the design of healthcare delivery to improve patient care. In this report, six dimensions for 21st-century healthcare were outlined: safe, effective, patient-centered, timely, efficient, and equitable (Institute of Medicine, 2001, p. 6). More than half of the adverse events which are documented occurred due to medical errors, and it is estimated that 44,000 Americans die annually due to medical errors (Kohn, Corrigan, & Donaldson, 2000). For each of the six aims, there are measurable indicators of progress in improving patient safety and “building a safer system means designing processes of care to ensure that patients are safe from accidental injury,” (Kohn et al, 2000, p. xi).

Past research in interdisciplinary team care has shown that there are varied improvements possible with different models of team care and training programs. Studies have found that there is either no change or no statistically significant positive improvement in patient outcomes with interdisciplinary care. It should be noted that each study had a different definition of which disciplines were included in the team and which environment the teams were working in.

Specific Research Question

Patient safety should be the primary focus of all healthcare organizations. Interdisciplinary care teams provide an environment where the six aims of patient safety can be measurably improved. It is hypothesized that, when an interdisciplinary care team model is used, patient outcomes and staff satisfaction will improve. This will be measured by comparing existing research on inpatient length of stay (LOS), readmission rates, medical errors and team communication, rates of Adverse Drug Events (ADEs), staff attitudes and satisfaction, interdisciplinary collaboration, and overall patient satisfaction. These measurements have been chosen due to LOS, readmission rates, medical errors, and ADE's being the standard measurements used to evaluate patient safety. The other measures were chosen because they cover patient and staff stakeholder perceived satisfaction with the interdisciplinary care team model.

Relevant Literature Review

Length of Stay (LOS)

The length of stay is the period that a patient remains admitted to an inpatient department of the hospital. The LOS is measured for patients with similar conditions and then compared to each another. Two studies were done which showed an impact on LOS for patients when using an interdisciplinary team model, they are the studies by Borenstein, et al (2016) which focused on elderly patients and a study by Curley, McEachern, & Speroff (1998) focused on an adult inpatient medical ward.

Borenstein et al (2016) studied the dynamics of team-based interprofessional management in caring for elderly individuals who were hospitalized. The study took place at a large, academic, not-for-profit hospital with 886 licensed beds. Participants for this study were selected by nurses who were trained to use the Fulmer "SPICES" criteria of evaluation (Borenstein et al, 2016). SPICES is an acronym for Sleep disorders, Problems with eating or feeding, Incontinence, Confusion, Evidence of Falls, and Skin breakdown (Borenstein et al, 2016). Patients needed to meet one of the six criteria present to be considered an at-risk older adult and eligible for participating in the study. All participants also needed to be 65 years of age and older and have been admitted to the hospital between July 2012 and January 2013. On the first day of admission, an email was sent out to all team members identifying the patient as high-risk and a variety of evaluations were completed. On the second day of admission, the inter-professional care team held a "huddle" to discuss the findings of each of their assessments and to decide on recommendations. A physician advisor was present to guide the care team and did not interact with the patient or family from a clinical perspective at all. The team then took responsibility for each of the recommendations that were made that fell under their scope of practice. Central to this model of care team approach is that the attending physician drives the plan of care. There were 1,384 patients in this study. The average age of patients was 80.9 years, and 53.5% were female. There was a similar patient panel that was used to form comparisons and draw conclusions

about the effectiveness of the interventions. The comparison group had a longer LOS than the intervention group patients (6.60 days versus 5.40 days) (Borenstein et al, 2016). Another significant outcome was that the transfers to intensive care services and the incidence of complications were significantly lower for the intervention group.

The second study that had significant results related to LOS was a study completed by Curley, McEachern, & Speroff in 1998. In this study the researchers looked at one particular trial measuring the impact of interdisciplinary rounds within an inpatient medical ward from the perspective of continuous quality improvement. The randomized, control trial took place at Metro Health Medical Center, a 742-bed acute care hospital in Cleveland, Ohio, between November 1993 and April 1994. There were 1,102 admissions randomly assigned to trial or control groups. 535 patients were allocated to medical teams with traditional rounds, and 567 were assigned to teams with interdisciplinary rounds. The patient outcomes that were measured were: length of stay, total hospital charges, provider satisfaction, and ancillary service efficiency (respiratory therapy, nutrition services, social work) (Curley et al, 1998). This study found that the LOS for patients with interdisciplinary rounds was 0.5 days shorter and hospital charges were \$1,400 less than the traditional rounding patient group (Curley et al, 1998). This study shows an apparent decrease in LOS and cost savings of this interdisciplinary rounding approach. There are limitations of application to modern healthcare as this study took place in the late 1990s when the electronic medical record (EMR) was not yet utilized.

Readmission Rates

Readmission rates are important for healthcare administrators because they are an indication of the quality of care. It was discovered that "one-fifth of Medicare patients are readmitted to the hospital within 30 days of initial discharge, costing Medicare an estimated \$17.4 billion in 2004," (as cited in Joshi, Ransom, Nash, & Ransom, 2014, p. 545). These poor outcomes and excessive expenses make readmission rates a useful metric to analyze when examining if interdisciplinary teams make a positive impact on this metric.

In a study completed by Pannick, et al (2015), focused on team performance in general medical wards, positive patient outcomes between

1998 through 2013 were used as a measurement for success. The researchers evaluated all English-language studies within the EMBASE, MEDLINE, and PsycINFO databases that were published from January 1st, 1998 through December 31st, 2013, which included interdisciplinary care teams on general adult medical wards in inpatient hospitalization (Pannick et al, 2015). These studies were only included if the conclusions were compared to measurable patient outcomes impacted by the interdisciplinary team. Data was then extracted from each of these studies to be compared to each other. 6,934 relevant studies were found by searching the databases and, of these, 30 studies met criteria and were utilized. Within these 30 studies, 66,548 patients were included, and the mean age was 63 years old. The measurements that were included in determining the effectiveness of interdisciplinary care team success were: length of stay, complications of care, in-hospital mortality rate, and 30-day readmission rate (Pannick et al, 2015). It was found that using interdisciplinary care teams in a general medical ward does not reduce readmission rates. Twelve out of fifteen interventions, or 80% of studies, did not reduce readmissions and, of the six, interdisciplinary care team interventions, zero interventions impacted readmission rates (Pannick et al, 2015, p. 1295). In the conclusion of the study, it was suggested that more sensitive measurements be used outside of the typical indicators of patient outcomes for the general medical ward. The broad indicators of patient success have more to do with risk than the dynamic of the care team culture and efficiency (Pannick et al, 2015).

Medical Errors and Team Communication

Medical errors account for approximately 98,000 lives lost each year in American healthcare (as cited in Joshi et al, 2014, p. 269). This number is suspected to be much higher due to lack of reporting. It should be noted in relation to medical errors, “working conditions play an important role as well; shortages of clinical personnel, high patient ratios, and long work hours all contribute to the risk that complex processes may not be executed as intended,” (Joshi et al, 2014, p. 272). Medical errors have traditionally been blamed on an individual staff person who has been identified as the person at fault and penalized accordingly. Leape, Berwick, & Bates (2002) postulated that most medical errors are systems problems and should be handled as such. The individual should only be

punished if they willfully and intentionally did the action that led to a medical error (Joshi et al, 2014, p. 272). Medical errors frequently are connected to team communication breakdowns, and the Medical Team Training (MTT) model should be examined for usefulness in decreasing medical errors. It is noted that 36% of communication errors affect operational processes resulting in “inefficiency, team tension, resource waste, workarounds, delay, patient inconvenience, and procedural error” (Awad, et al, 2005, p. 773).

Medical Team Training (MTT) was developed by the Department of Veterans Affairs (VA) to improve patient outcomes in surgery (Awad et al, 2005). The three disciplines that were included in the study were surgeons, nurses, and anesthesiologists. The training aimed to improve communication amongst the surgical team, increase staff satisfaction, and decrease adverse outcomes for patients. The training included “didactic instruction, interactive participation, role-play, training films, and clinical vignettes,” (Awad et al, 2005, p. 771). Individuals that attended this course were also taught change management theory, and each discipline was instructed on how to use what they had learned to lead a preoperative briefing. This briefing was to be standardized, formal, precise, and informative. It was to take place before every procedure in the operating suite and to include all team members involved in the case. There was a survey administered to participants before implementing what they had learned at the MTT and then four months after implementation.

The results of this study showed an increase in preoperative briefings from 64% at one month of implementation to 100% at four months post-implementation (Awad et al, 2005). It was found that there was a statistically significant improvement in communication scores for surgeons and anesthesiologists, but no major change for nurses (Awad et al, 2005). This is connected to medical errors because the “VA National Center for Patient Safety identified that 82% of root-cause analyses cited communication failure as at least one of the contributing/causal factors in an adverse event,” (Awad et al, 2005, p. 772). The MTT is a useful process for other departments in healthcare and has been proven to improve communication amongst team members.

Adverse Drug Events (ADEs)

Adverse Drug Events (ADEs) are the most common nonsurgical adverse event for hospitalized patients (Joshi et al, 2014, p. 393). It is estimated that between 380,000 and 450,000 preventable ADEs occur each year and they are associated with “an increased length of stay in the hospital (by 1.7 days), increased hospital cost (an additional \$2,000), and increased risk of death (1.9 times higher than those not experiencing an ADE),” (Weiss & Elixhauser, 2013). It should be noted that the most common medicines associated with ADEs are steroids, antibiotics, opiates, narcotics, and anticoagulants (Weiss et al, 2013). ADEs can be decreased by including a pharmacist in the patient care team.

The impact of having a pharmacist available during patient rounding in reducing ADEs in general medical units at the hospital was measured in a study by Kucukarslan, Peters, Mlynarek, & Nafziger (2003). This was a single-blind, standard care-controlled study in which patient care was compared with those teams with a pharmacist on their care team to those which did not have a pharmacist on the care team. Patients’ records were selected randomly and evaluated in a blinded process involving an independent staff physician and a senior pharmacist. All interventions made by the pharmacist in the rounding process were documented. This study took place at Henry Ford Hospital in Detroit, Michigan on two primarily internal medicine units (Kucukarslan et al, 2003). Data was collected between September and November 2000 on 165 patients that participated in the study. The pharmacists were made available for rounding, documenting pharmacotherapy history, and for discharge counseling (Kucukarslan et al, 2003).

The study found that, when the pharmacist was included in rounding, preventable adverse drug events decreased by 78% from 26.5 preventable ADEs per 1000 patient days in the control group to 5.7 preventable ADEs per 1000 patient days (Kucukarslan et al, 2003). Additionally, the length of stay was 0.3 days less, there was a shorter time to resolution of the condition, and the readmission rate was 44% less than the control group. The study also found that the most useful tasks that pharmacists perform in this process are “dosage or frequency adjustments, addition of drugs to therapy, identification of potential problems with continuing treatment after discharge, deletion of drugs from therapy, and recommendation of laboratory monitoring,” (Kucukarslan et al, 2003, p.

2017). Pharmacists are a valuable addition to interdisciplinary care teams and can bring useful information to the conversation regarding the plan of care for patients and decrease the potential for ADEs.

Staff Attitudes and Satisfaction

Healthcare professionals need to collaborate in the clinical setting to meet patients' needs adequately. This collaboration is impossible if staff are not feeling satisfied with their employment, unhappy with organizational culture, or are feeling burned out by their roles. Staff satisfaction is a clear indicator of organizational health and "at the heart of each and every health system, the workforce is central to advancing health," (Goetz, et al, 2015). The studies completed that had significant results regarding this topic are Körner, Wirtz, Bengel, & Göritz (2015) focused on the input-process-output model and Gibbon et al (2002) focused on Integrated Pathways (ICP) and Team Notes (TN).

Interprofessional team effectiveness and job satisfaction utilizing the input-process-output model was examined in a study by Körner, Wirtz, Bengel, & Göritz (2015). This was a quantitative study that took place across fifteen rehabilitation hospitals in Germany. Questionnaires were given to 661 members of healthcare teams in rehabilitation hospitals and 275 questionnaires were returned, a 41.6% response rate (Körner et al, 2015). Three questionnaires were excluded due to missing data, resulting in 272 valid questionnaires for analysis. It was found that 35% of job satisfaction can be predicted by an equation that includes both organizational culture and interprofessional teamwork (Körner et al, 2015). Managers of healthcare organizations should increase their understanding of healthy organizational culture, carry out team-building activities, and improve interprofessional teamwork (Körner et al, 2015).

The study completed by Gibbon, et al (2002) examined the efficiency of two different approaches in team-working in rehabilitation settings: Integrated Pathways for stroke (ICP) and Team Notes (TN). Both of these methods use a collaborative approach to healthcare and rehabilitation. The design of the study was quasi-experimental and a before and after design was used. Four medical units participated in this study. Unit A was an 18-bed acute stroke unit and 25-bed stroke rehabilitation unit, Unit B was a 30-bed stroke rehabilitation unit, Unit C was a 20-bed stroke unit, and Unit D was a 29-bed stroke unit based in a

general medical ward (Gibbon et al, 2002). Units A and B had the ICP introduced while Unit C and D had the TN added. The response rate for each unit was 75% for both the before and after measurements (Gibbon et al, 2002). The results of this study were divided into four categories: team vision, task orientation, participative safety, and support for innovation. For team vision, Units A, B, and C increased from pre- to post-test showing increased team cohesion while Unit D decreased by 9 points showing decreased team cohesion (Gibbon et al, 2002). For task orientation, Units A and B increased their scores post-test while Unit C remained the same and Unit D decreased significantly. Regarding participative safety, Units A, B, and C increased while unit D decreased (Gibbon et al, 2002). For support for innovation, Units A, B and C increased marginally or stayed the same, while Unit D dropped post-test (Gibbon et al, 2002). The conclusions that can be drawn from the study are that the team care interventions used had little effect on improving staff attitudes, and external factors that the team had no control over were more influential in making changes.

Interdisciplinary Collaboration

Teamwork and cooperation are vital aspects of interdisciplinary care. If team members are not able to work together, then there will not be the greatest benefits available to patients. Patient safety is measured by the care that is safe, equitable, efficient, effectiveness, timely, and patient-centered (Kohn et al, 2000). Collaboration can lead to improvements in safety, efficiency, effectiveness and make care patient-centered. There were two studies completed on how interdisciplinary care impacts team collaboration and they were completed by O'Leary, et al(2010) focused on structured inter-disciplinary rounds (SIDR) and Sinclair, Lingard, & Mohabeer (2009) that focused on team collaboration in a single spinal rehabilitation team.

The first study looked at the impact of interdisciplinary rounding on medical providers' perspectives on how structured interdisciplinary rounds (SIDR) impacted teamwork and collaboration (O'Leary et al, 2010). As physicians have traditionally only rounded with other physicians, this interdisciplinary approach is entirely different to what they are accustomed. This was a controlled trial comparing the medical teaching unit which was implementing SIDR to another similar control

unit (O'Leary et al, 2010). The physicians and nurses from each unit were surveyed regarding the quality of communication with other disciplines using a 5-point ordinal scale. There was also a measurement used to assess teamwork and safety climate. This study took place at Northwestern Memorial Hospital (NMH) in Chicago, Illinois. There were 897 beds in this teaching hospital, and the study lasted six months starting in August 2008 (O'Leary et al, 2010). The survey was completed by 159 physicians and nurses; this is a 92% response rate, and it should be noted that they have a fully-integrated electronic medical record (EMR) (O'Leary et al, 2010).

The SIDR was completed each day at 11am in the nursing report room and the nurse manager and unit medical director co-lead rounds daily. SIDR was to be attended by all nurses, resident physicians, pharmacist, social worker, and case manager working with the patient on the unit. The rounds were structured using the communication tool that had been developed and was used on all patients admitted to the unit within the previous 24 hours. The results of this study showed that resident physicians rated the quality of communication and collaboration with nurses as high or very high on the unit with SIDR rounding compared to the control unit (91% versus 88%) (O'Leary et al, 2010). The difference in nurses reporting collaboration as high or very high was much more significant on the SIDR unit (74% versus 44%) (O'Leary et al, 2010). This reflects greater satisfaction in collaborating on the plan of care for patients, and ensures that all disciplines' voices are heard. Regarding work day efficiency, 91% of physicians and 93% of nurses surveyed reported that the SIDR improved this (O'Leary et al, 2010). This study provides a structure for care teams to model to improve communication and collaboration (O'Leary et al, 2010).

In the second study, which was an ethnographic study by Sinclair, Lingard, & Mohabeer (2009) it was performed by a single rehabilitation team of a spinal cord rehabilitation unit located in an urban hospital affiliated with the University of Toronto in Toronto, Ontario, Canada. This unit had a capacity of 19 patients and patients stayed on average 70 days. The team evaluated consisted of 40-45 professionals including a psychiatrist, 21 RN's, three physiotherapists, three occupational therapists, two social workers, chaplain, psychologist, pharmacist, and a variety of other professionals and students (Sinclair, Lingard, & Mohabeer 2009). All team members consented to participate in the study and the data was

collected by one trained observer who completed field observations and interviews. The trained observer collected field observations over 40 hours of observation in the unit over a 4-week time span, and observations occurred between 7am-4pm (Sinclair, Lingard, & Mohabeer, 2009). Also, 19 team members were selected and interviewed in 27 brief interviews and five extended field interviews. At least one member from each of the 11 professions was interviewed (Sinclair, Lingard, & Mohabeer., 2009). The results showed that the team culture was semi-hierarchical, that their care philosophy had a strong focus on patient-centered goals and engaged in interprofessional exchanges demonstrating their relationship with no visible alliances (Sinclair, Lingard, & Mohabeer, 2009). There was a split in relationships between the nursing team and the other professionals on the unit as their clinical focus, training, and staffing patterns were different. The team also utilized formal communication to encourage interprofessional collaboration and informal communication, such as meeting and talking in the hallways to formulate patient care plans and execute treatment.

Patient Satisfaction Surveys

Patient satisfaction surveys are used as an important element of healthcare performance (Joshi et al, 2014, p. 253). Administrators use these scores to drive change, and they can also be utilized in compensation models for clinicians. Patient satisfaction is a strong determinant of future utilization of healthcare services and loyalty to the system. When considering the impact of interdisciplinary care on patient satisfaction, it is useful to review previous studies on patient satisfaction and team-based care. One study that was completed was the Triad for Optimal Patient Safety (TOPS) project that was completed by Auerbach, et al (2012).

The TOPS project took place within a general adult medical unit of a hospital at three different hospitals in San Francisco, California (Auerbach et al, 2012). Included in the study was an academic university medical center, a non-teaching community hospital, and an integrated healthcare system hospital listed in the study. This was a two-year, quasi-experimental study of the TOPS program's three phases and the impact on communication, teamwork, and patient outcomes (Auerbach et al, 2012). TOPS first phase is an educational teamwork training, the second

phase is the formation of a unit-based safety team, and the third phase is providing patient reminders to become involved in their daily goals (Auerbach et al, 2012). For patients to participate in the study, they had to be 18 years of age or older and to be admitted to the medical units studied between January 2006 to March 2007. All data was collected through patient interviews and phone surveys. There were 10,977 patients admitted to the three hospitals during this time, and 581 patients were surveyed in the hospital (5.3% of the total sample), and 313 contacted by phone follow-up with questions primarily from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) (Auerbach et al, 2012). The results of this study showed a statistically significant improvement in the patients' perception of being treated with respect by physicians and nurses and having their needs understood during the second phase of TOPS (Auerbach et al, 2012).

Conclusions

In conclusion, it was hypothesized that when an interdisciplinary care team model is used, patient outcomes and staff satisfaction will improve. This was to be measured by comparing existing research on inpatient length of stay (LOS), readmission rates, rates of Adverse Drug Events (ADEs), medical errors and team communication, staff attitudes and satisfaction, interdisciplinary collaboration, and overall patient satisfaction. Through analysis of the available research, it was found that LOS decreased in each case analyzed. With a pharmacist on the care team, LOS decreased by 0.3 days (Kucukarslan et al, 2003), with the elderly LOS decreased from 6.6 days to 5.4 days (Borenstein et al, 2016), and with interdisciplinary rounds LOS decreased by 0.5 days (Curley et al, 1998). Readmission rates had mixed results. With pharmacist intervention, they found readmission rates decreased by 44% (Kucukarslan et al, 2003). However, in a general overview of 30 interdisciplinary studies, 80% of studies found no change to the readmission rate (Pannick et al, 2015). Medical errors result 82% of the time from staff communication failures and with MTT pre-operative briefs increased to 100% of the time (Awad et al, 2005). Surgeon and anesthesiologist perceptions of communication improved with MTT while nurses' perception was unchanged (Awad et al, 2005). ADEs were significantly impacted by having a pharmacist on the care team and preventable ADEs decreased by 78%, or from 26.5 ADEs

per 1000 patient days to 5.7 ADEs per 1000 patient days (Kucukarslan et al, 2003). Staff satisfaction was not impacted by interdisciplinary teams (Korner et al, 2015). Interdisciplinary communication improved with the use of SIDR for physicians from 88% to 91% and for nurses from 44% to 74% (O'Leary et al, 2010). The SIDR also impacted perception of satisfaction with work-day efficiency to 91% for physicians and 93% for nurses (O'Leary et al, 2010). The spinal cord rehabilitation unit study provided an in-depth case study for a unit effectively using interdisciplinary teaming to improve communication (Sinclair, Lingard, & Mohabeer., 2009). Patient satisfaction was influenced by the TOPS program by improving patients' perceptions of being respected by nurses and physicians and feeling like their needs are understood (Auerbach et al, 2012).

The results of the studies on interdisciplinary team care show a clear benefit of the practice in decreasing length of stay, decreasing the incident of adverse drug events, and improving staff communication with one another. There continues to be a disparity between how physicians perceive communication within teams favorably, while nurses lag behind. This can be attributed to the traditional hierarchical structure in healthcare. There is a need for additional research in the application of interdisciplinary care in ambulatory settings, impact on readmission rates, and staff satisfaction. In summary, interdisciplinary care has many benefits to both the healthcare organization and patients and should continue to be studied and implemented.

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