

**A STUDY ON IMPROVING PROCESS EFFICIENCY THROUGH
UTILIZATION OF EMPLOYEE CAPACITY BY TIME STUDY TECHNIQUE FOR
U.S. HEALTHCARE BPCI INITIATIVE AT PRIMERA HYDERABAD**

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By

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Under the Supervision and Guidance of

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DECLARATION BY STUDENT

I hereby declare that this dissertation "A study on improving process efficiency through utilization of employee capacity by time study technique for us healthcare epic initiative at Primera Hyderabad" the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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CERTIFICATE FROM FACULTY GUIDE AND SCHOOL DEAN

This is to certify that dissertation "A Study On Improving Process Efficiency Through Utilization Of Employee Capacity By Time Study Technique For U.S. Healthcare Bpci Initiative At Primera Hyderabad" is a record of the research work undertaken by **Dr. Manreet Singh** in partial fulfilment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

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ABSTRACT

Introduction: The effective functioning of any process requires the process steps to be streamlined and be done with minimal to no errors. Hence, to Improve the Efficiency of the Bundled Pay Care Improvement (B.P.C.I) in various US hospital branches of Primera, A Time & Motion Study Analysis is done on the various Employees working in the Core Measures Department with the help of Camtasia Recording Software.

Objective: Improve general process efficiency by optimizing all the process steps, eliminating redundancy through automation, and setting performance targets based on detailed data analysis.

Methodology: This is an observational Time and Motion Study to take place within PrimEra's Core Measures Department in hospital branches in the United States. Work processes for data will be captured by Camtasia Recording Software, which will be recorded in an Excel spreadsheet. The sample size is to be drawn from a population of 1500 accounts; hence, 150 accounts are to be sampled using simple random sampling.

Findings: Employee work time was different. A complex task time regarding the difficulty was different between individuals. Difficulty in navigation because of a different EMR Interface at large Considerable consultation with Team Leaders; Employee experience may vary performance EPIC-EMR is more user-friendly, any reduced time regarding the task, but the Meditech and NE&NM EMRs needed a long time to run "copy patient demography" as a repetitive task.

Conclusion: The Time and Motion Study in relation to the BPCI initiative showed that offering ambitious but realistic performance goals to the staff members brings about the process efficiencies. This has a positive implication for the care continuum of the patients in and out of facilities affiliated with Prime Health Care Services. Motivated staff meets target more effectively so the Care Coordination Team can spend more time caring for the patients. Regularly updating LOS and DRGs in the EMRs assures that the physicians are properly updated upon the condition of the patient. Thorough and timely documentation avoids delays in CMS bundled payments. Ultimately, better performance efficiency allows facilities to provide their patients with top-notch care.

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ABBREVIATIONS

CMS	Centers for Medicare & Medicaid Services
DRG	Diagnosis-Related Groups
LOS	Length of Stay
CDI	Clinical Documentation Improvement
CDS	Clinical Documentation Specialist
CM	Case Manager
RCA	Root Cause Analysis
T&M Study	Time & Motion Study
PPACA	Patient Protection and Affordable Care Act
EMR	Electronic Medical Records
NN	Nursing Navigators
HFAP	Healthcare Facilities Accreditation Program
ACPC	Accredited Chest Pain Center
JCNQA	Joint Commission National Quality Approval
CAP	College of American Pathologists Laboratory Accreditation
AOA	American Osteopathic Association
CARF	The Commission on Accreditation of Rehabilitation Facilities

INTRODUCTION

Effective healthcare processes demand the compactly sequenced steps with the least possible errors. The Bundled Payments for Care Improvement initiative put in place by the Patient Protection and Affordable Care Act of 2010 tries to structure that; it is directed at bettering patient outcomes and thus lessening, from health providers, the health care costs through reduced payments. The incentive from a fee-for-service to value-based care by BPCI supports coordinated, characterized, and appropriate care at all stages of the whole period of treatment.

Despite all the structured approach being taken this BPCI initiative is suffering from the problems of process inefficiencies and consequent suboptimal utilization of the employee capacities. Repetitive and time-consuming tasks of the Core Measures Department have called for overall efficiency. Kenealy et al. (3) have shown that process improvement techniques could do wonders in improving the operational performance. Specific research is yet to be done, though, on the aspect of the use of Time & Motion Study Analysis to increase employee capacity utilization in this BPCI initiative.

Success related to the BPCI initiative in parallel at the different hospital branches of Primera in the United States is critically dependent on overcoming these inefficiencies. The present research paper tries to bridge this gap and applies techniques of Time & Motion Study Analysis for identification of certain automated process steps that are repetitive. This research records and analyses work processes of employees in software called Camtasia Recording Software—thus identifying specific inefficiencies to suggest targeted automation solutions. Ultimately, BPCI will drive operational efficiencies, with a resultant balanced throughput, which will improve productivity and patient outcomes.

Bundled Payments for Care Improvement (BPCI)

The Patient Protection and Affordable Care Act awarded CMS additional authority in 2010 for incentivizing cost reduction and enhanced value in health care by introducing alternative payment models. These are the programs that provide the providers incentives for the value and quality of care and penalize the provider themselves if the cost is over and above the level. It was in the year 2011 that BPCI

got activated as a voluntary initiative by CMS in encouraging health care organizations as well as clinicians in improving the delivery of care during and post-discharge for the hospitalized patient. The BPCI initiative seeks to redesign healthcare reimbursement from a fee-for-service to value-based healthcare, eventually reducing the incentive to see more patients and provide more services, irrespective of cost or outcome.

BPCI bundles services a patient receives across a single episode of care into a pre-determined payment, rewarding efficient, high-quality, and coordinated care. Through contracting participants to assume financial risk for care for their patients, BPCI encourages responsibility for the entire spectrum of care: acute and postacute, within a single episode lasting up to 90 days following discharge from an inpatient hospitalization.

Flexibility is given to participants in the BPCI initiative to be engaged in one of four models of bundled payments tied to a single episode of care for up to 48 different clinically and surgically related conditions. Most participating hospitals choose Model 2, where CMS calculates a bundled payment amount (target price) for each selected episode based on historical Medicare claims data. If total expenditures are less than the bundled payment amount, CMS is responsible for crediting the hospital with the savings. In the event that expenditures are higher than the bundled payment amount, the hospital will owe a recoupment amount back to CMS.

Effective BPCI operational success depends primarily on well-established communication and coordination between participating organizations, hospitals, physicians, and supporting teams. The first initial stage for the BPCI process includes the selection of the eligible patients. An operational DRG within the first 24 hours of a patient's admission is critical for patient early engagement. The information system should convey the operational DRG to those who may impact favorably on the provision of care. Daily, the CDI forwards emails using the BPCI program. These emails depict the DRG of the incoming new patients as well as the average LOS. Such emails are then forwarded to the Care Management staff, the BPCI nurse navigators, and the rest of the key stakeholders who will elevate in patient care intervention.

Some of the critical success factors for business operations with clinical DRGs: process improvement and interprofessional collaboration make up these factors. The BPCI Lead unites the team on a weekly basis, directs them on process improvement, and designs the system. Staff teams include CDI staff, case management, utilization review, nursing, radiology, transition planners, pharmacy, respiratory therapy, rehabilitation, and home care + any added as need to round out the continuum of care including BPCI and other nurse navigators, primary care case management, hospitalists, primary care providers, specialists, and any other departments or personnel deemed necessary for the team. The team creates an interprofessional process map detailing how each team member plays a role in establishing patient stability. Processes can be standardized across all patients rather than unique to specific diagnoses. Some of the changes are made in a pilot fashion first with the BPCI population before becoming implemented with larger patient populations. The creation of a BPCI pilot role for the case management of the patient during the 90-day episode of care is typical across all BPCI programs. This may make all the difference in success with the BPCI by serving as a conduit and central point person for coordination of inpatient care, care transitions, and post-hospitalization linkages. The pilot is trained in doing a holistic, root-cause analysis—cross-continuum—of the potential barriers to stabilization and in integrating with the cross-continuum team to bridge established care management relationships. The entire care team is engaged with information to drive the care plan across the continuum. In the current EMR, the clinical notes are entered and then into a standard root cause template, and making entries in the primary care EMR to translate helpful information across the continuum. The pilots and the BPCI leadership team of this program meet weekly to analyze the patient data and do root cause analysis of readmissions to identify opportunities for process improvement. Data from interventions with patients are rapidly translated into process improvement that encompasses all patients, not just those enrolled in the BPCI.

CDI Specialists

Correct identification of eligible patients serves as a core tenet of successful BPCI programs. CDI staff are active members of the care transition team with ongoing process revisions and improvements in patient eligibility identification by 11 AM daily. Ongoing process improvements are often successfully scrolled in reviewed

ineligible patients on final coding and those that change to be eligible post coding. Many drivers of improvement are in the area of the timing of DRG determination and physician education around documentation standards. Clinical DRGs in our facility more often than not are representing diseases in evolution, and thus provide strong opportunities for clarification and education to enhance comprehensive physician documentation and staff CDI clinical understanding and correct coding. Success is dependent upon ongoing interactions and individual participation of the CDI staff with the clinical staff.

Case Management and Interprofessional Rounds

Key BPCI outcomes are impacted by critical players: CMs. Most important was the realization that in this BPCI pilot, the objective is to optimize existing resources, not replace existing roles. We utilized a partnership model, unit-based RN case managers, partnered with licensed master social workers, also assigned to multiple units for complex psychosocial needs. Daily huddles identify BPCI patients and highlight the need for next site-of-care assessment. Our organization has daily interprofessional rounds. Team members receive an email every day with BPCI patients and their LOS who have been rounded on. Pilots facilitate this process but do not replace resources that already exist. Possible gaps in care are addressed collaboratively with the person who has the best relationship with each patient. Once the patient is prepared for discharge, the pilot will act as a liaison, linking to the next site of care or primary care CM RN in order to ensure that the care plan is continuous.

The offshore team in PrimEra are responsible for maintaining and updating the case sheets a day prior and to update the LOS (Length Of Stay) and DRG (Diagnosis Related Groups) of the new patients for the clinical team to identify the status and the position of the patient. Hence the employees in the offshore team have to work diligently and effectively. Identifying areas of key improvement in the process helps the employee to work efficiently. Hence the main objective of my project study is to observe the work flow process of the employees and gain insights and understand key areas of improvement and through the time motion studies provide necessary recommendations and help the team to set realistic targets to achieve great output and efficiency.

IMPORTANCE OF STUDY:

Effective functioning of any process requires that the process steps are steam lined and is done

with minimal to no errors.

Hence to Improve the Efficiency of the Bundled Pay Care Improvement (B.P.C.I) initiative in various US hospital branches of PrimEra,

A Time & Motion Study Analysis is done on the various Employees working in the Core Measures Department with the help of Camtasia Recording Software.

The Camtasia Recording software records all the process steps worked on the employee in the computer terminal and the process improvement analyst can see exactly how much output of the work they said employee is doing and also allows the analyst to find key performance issue areas and help in setting targets to employees.

RESEARCH QUESTION

How can the efficiency of PrimEra's BPCI initiative be improved by identifying and automating repetitive process steps in the Core Measures Department using Time & Motion Study Analysis?

AIM OF THE STUDY

To analyze the process steps in the Core Measures Department for effective implementation of Bundled Payments for Care Improvement at Prime Health Services.

Objectives of the Study

1. Identify specific process steps and record the time taken for each.
2. Identify key areas for process improvement.
3. Identify repetitive process steps and recommend automation methods.
4. Analyze data to find areas of inefficiency.
5. Set targets for employees to improve overall efficiency.

ORGANIZATION PROFILE

Prime Health Services, established in 2001 by Dr. Prem Reddy, operates 45 acute care hospitals across 14 states, including California, Alabama, Florida, Georgia, Indiana, Michigan, Missouri, Nevada, New Jersey, Ohio, Pennsylvania, Kansas, Rhode Island, and Texas. The network boasts over 42,000 employees and physicians, with more than 7,700 patient beds, providing comprehensive healthcare services to diverse communities.



Fig 1.1: Logo and Label of Prime Healthcare

Fifteen of the Superb Medical care Clinics are not-for-benefit, and individuals from the Great Medical services Establishment, a 501(c)(3) public cause.

Mission and Values:

Our main goal and our qualities guide how we direct our business, how we impart inside and remotely, what we have confidence in and where we are going.

Commitment:

To give humane consideration and clinical greatness to all patients as we make clinics that further develop medical care locally, we serve.

Mission:

To save and further develop clinics so they can convey humane, quality consideration to patients and better medical care for networks.

Prime Hospital Services:

To convey merciful, quality consideration to patients and better medical services to networks.

Values:

Quality: We are focused on continuously giving outstanding consideration and execution.

Sympathy: We convey patient-focused medical care with empathy, nobility and regard for each persistent and their loved ones.

Local area: We are respected to be confided in accomplices who serve, offer in return and develop with our networks.

Doctor Drove: We are an interestingly doctor established and doctor drove association that permits specialists and clinicians to coordinate medical services at each level.

The Prime Story:

The seeds of Prime Medical services' prosperity were first planted in the High Desert area of Southern California where Dr. Prem Reddy started rehearsing medication during the 1980s. It was there he assembled Prime Medical care's lead office, Desert Valley Clinic, to serve the local area.

Desert Valley Clinic was offered to one more partnership for a couple of years, and quickly started vacillating. In 2001 Dr. Reddy shaped Prime Medical care Administrations to re-buy the clinic, protecting it from chapter 11 and setting the norm for quality medical care that go on all through the clinic organization right up to the present day. Prime Medical care's aphorism is "Saving Clinics, Saving Position, Saving Lives" which the organization keeps on doing as it develops.

From the examples mastered during the change of Desert Valley Emergency clinic, Prime Medical services' model was laid out and presently prompts the salvage and change of monetarily battling local area medical clinics the nation over. Desert Valley Emergency clinic has been perceived as a Main 100 Medical clinic in the country on various events.

Three years after the arrangement of Prime Medical care, the organization bought the second clinic in the family, Chino Valley Clinical Center, when Dr. Reddy was approached to save the medical clinic from liquidation. Development went on all through the mid-2000s, and as of late has expanded pace as the moving medical care

scene jeopardized increasingly more little local area emergency clinics, taking steps to close them without monetary help. Until this point in time, Prime has put more than \$1.1 billion in capital upgrades for its medical clinics beginning around 2005.

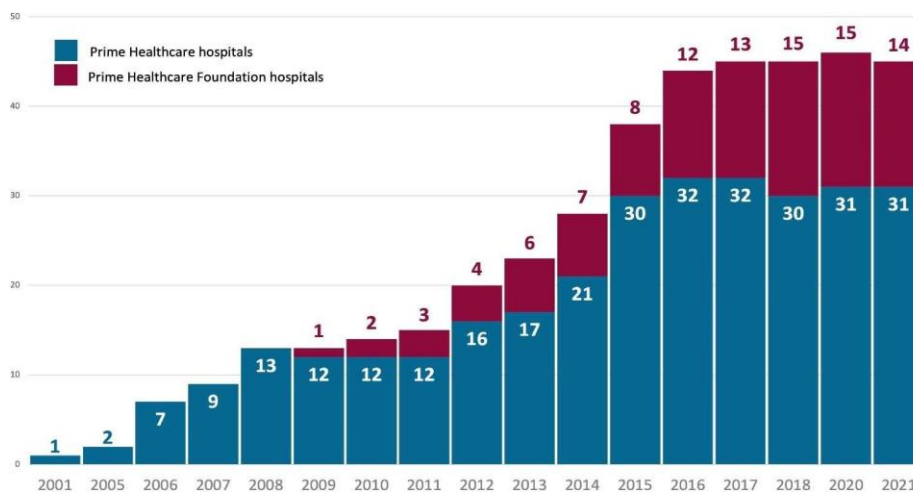


Fig 1.2: Insights of Prime Medical care Administrations

Prime Medical services has extended to 45 clinics in 14 states the nation over. In acknowledgment of our great development and achievement, Prime Medical care has been named "The Quickest developing Clinic Framework" in the country by Present day medical services. Each clinic procured in monetary trouble has been changed and none have been sold or shut. Our accomplished circle back group has a record of progress in finding functional efficiencies and limiting organization to make a proficient medical care conveyance model. Our decentralized design permits nearby administration to go with the ideal decisions for their local area, while profiting from corporate direction and backing.

ACCREDITATION:

All Prime Healthcare Hospitals are fully accredited by esteemed organizations, including:

- Healthcare Facilities Accreditation Program (HFAP)
- Accredited Chest Pain Center
- Joint Commission National Quality Approval
- College of American Pathologists (CAP's) Laboratory Accreditation
- American Osteopathic Association
- The Commission on Accreditation of Rehabilitation Facilities (CARF)



Fig 1.3 Accrediting Organizations of Prime

REVIEW OF LITERATURE

Sr. No	Title of Study	Author, Year	Location	Sample size, technique	Salient Features
1.	Enhancement of Productivity and Overall Equipment Efficiency Using Time and Motion Study Technique -A Review	S. Nallusamy, S. Muthamizhmaran in year 2015	Industrial organizations	Systematic observation	□ Training Requirement: Emphasizes the need for proper training for effective application of time and motion studies. □ Data Collection Methods: Utilizes systematic observation, stopwatch time study, and process charts to collect detailed and accurate data. □ OEE Enhancement: Focuses on improving Overall Equipment Efficiency (OEE) for the autoclave process through time and motion studies.
2.	Determination of Standard Times for Process Improvement: A Case Study	Mehmet Akansel, Betul Yagmahan, Erdal Emel 2017			the study includes the utilization of work study techniques such as time study and work sampling to improve productivity in a steel-pipe manufacturing company. The research aimed to address issues like unbalanced workloads and bottlenecks in the production line by determining standard

					times for various processes. By applying work measurement and workload balancing methods, the study sought to optimize manual tasks allocation among workers to achieve workforce savings and enhance overall efficiency in the manufacturing processes. The study highlighted the significance of standard times in enabling companies to run their processes at their maximum potential, ultimately leading to improved productivity and operational effectiveness.
3.	Automatic Time Study Method for Recording Work Phase Times of Timber Harvesting	Teijo Palander, Yrjo Nuutinen, Kari Vaätäinen, Arto Kariniemi 2017		The study utilized an experimental research strategy to analyze work phases under similar conditions, combining manual and	The study focused on comparing manual and automatic timing data to enhance the understanding of work phases in harvester productivity. By analysing work phases under similar conditions, the

				automatic timing data to develop an improved process-data model of the harvester's work.	research aimed to develop an improved process-data model for capturing the intricacies of the harvester's operations. This approach allowed for a comprehensive examination of the various components involved in the harvesting process, leading to a more accurate and efficient recording of work phases. The study's emphasis on combining manual and automatic data collection methods highlights a shift towards more advanced and systematic approaches in forestry work analysis, paving the way for enhanced productivity and operational insights in the field.
4.	Determination of Standard Times for	Mehmet Akansel, Betul Yagmahan, Erdal Emel			The study focused on improving

	Process Improvement: A Case Study	2017			productivity in a steel-pipe manufacturing company. Utilized work study, time study, and work sampling techniques to determine standard times for processes. Identified unbalanced workloads and implemented workload balancing to enhance efficiency. Aimed to reduce stoppages on the production line through process improvement.
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RESEARCH METHODOLOGY:

STUDY DESIGN

Observational Time and Motion Study.

SETTING

The study will be conducted in the Core Measures Department of PrimEra's US hospital branches. This setting involves the use of Camtasia Recording Software to capture the work processes of employees involved in the Bundled Pay Care Improvement (BPCI) initiative.

PREFERRED DATA TYPE AND DATA SOURCE:

DATA TYPE:

Textual entry of the steps in Excel sheet that the employees made during process.

DATA SOURCE:

Camtasia recordings of the work done by the employees

DATA AVAILABILITY:

Data was readily available in the system terminal as the whole work process of the employees is already recorded beforehand.

DATA ANALYSIS:

The data collection had a specific format with the following attributes:

- NO OF ACCOUNTS HANDLED
- UNIQUE ID OF PATIENT (SOME DETAILS EXCLUDED DUE TO HIPAA)
- EMPLOYEE CODE
- FACILITY NAME
- EMR USED
- START TIMES
- END TIMES
- BREAK TIMES

- PRODUCTION TIMES EXCLUDING BREAKS
- TOTAL PRODUCTIVITY

All the above attributes were entered manually in the excel sheet by thoroughly observing the various process steps which the employees do and the time steps for each step were noted down. The data was visually presented using Microsoft Excel in the form of graphs and charts.

DATA COLLECTION:

Primary Data: Direct data entry and observations.

Secondary Data: Data entry made by previous employees or team at the corporate branch.

PROCEDURE FOR DATA COLLECTION:

The data was gathered during working hours for 4 months on a twice a week basis and analyzed.

SAMPLE SIZE:

Table 3.2 Population and Sample Size

SIZE	NUMBER OF ACCOUNTS
POPULATION	1500
SAMPLE	150

DATA ANALYSIS TOOLS:

Microsoft Excel sheet has been considered as the tool of data analysis

ANALYSIS

POPULATION SIZE TO SAMPLE SIZE COMPARISON

Comparison of Population to Sample Size is shown below in the form of pie charts:

Fig: 4.1 Population Vs Sample Size

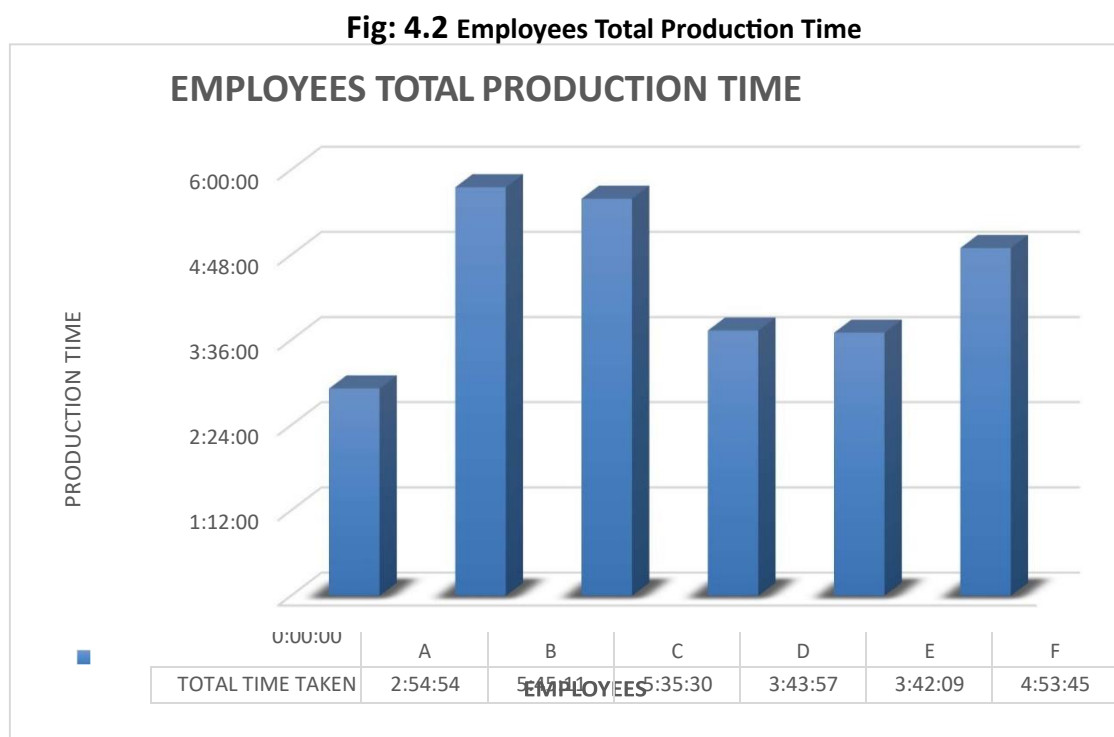


The above fig. shows the ratio of population size to the sample size taken for the research study.

For the research study a population size of 1500 is taken. These 1500 represents the total accounts of the patients worked by the 6 employees in the given period. And out of which a 10% of the population viz 150 accounts are selected randomly to do the time motion study analysis.

EMPLOYEES TOTAL PRODUCTION TIME:

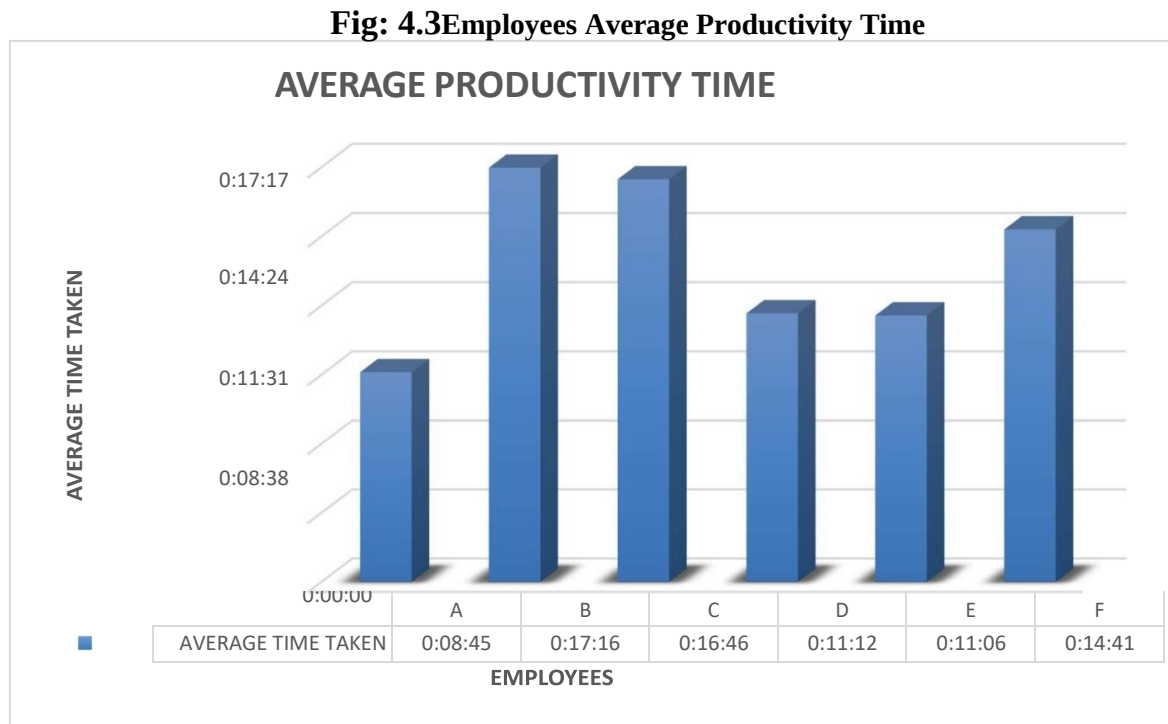
Each Employee's total production in the sample is shown below in the form of clustered columns:



The above fig. shows the Each Employee's total production time working on different EMR's in pictorial representation.

EMPLOYEES AVERAGE PRODUCTIVITY TIME:

Each Employee's average production in the sample is shown below in the form of clustered columns:



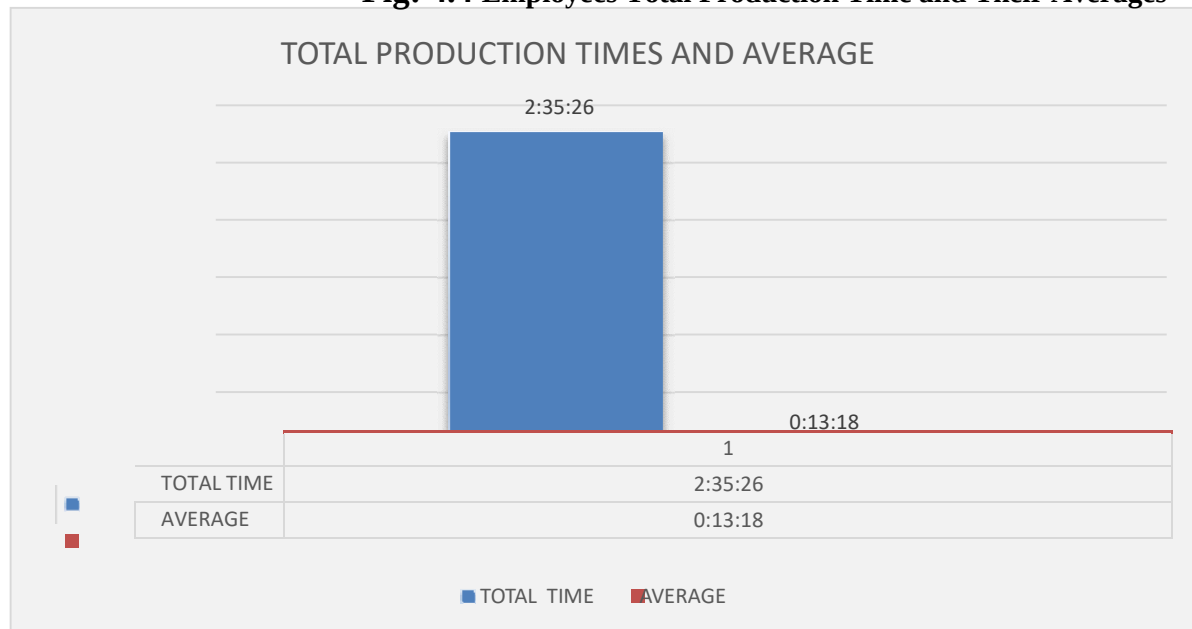
The above fig. shows the Each Employee's average productivity time working on different EMR's in pictorial representation.

From the figure it is evident that the average productivity of Employee A is around 8 mins followed by Employee E and D (11 minutes), while Employee F has average productivity of around 14 mins followed by Employee B and C around 16-17 minutes) respectively. The above figures give us an insight that the Employee A is highly efficient in the performance of a given task whereas Employee B and C are less efficient. Employee D and E fall in the middle of the efficiency in completing the given task.

COMPARISION OF TOTAL PRODUCTION TIMES AND THEIR AVERAGES:

A Comparison of the total production time by all the employees to average times taken is shows below:

Fig: 4.4 Employees Total Production Time and Their Averages



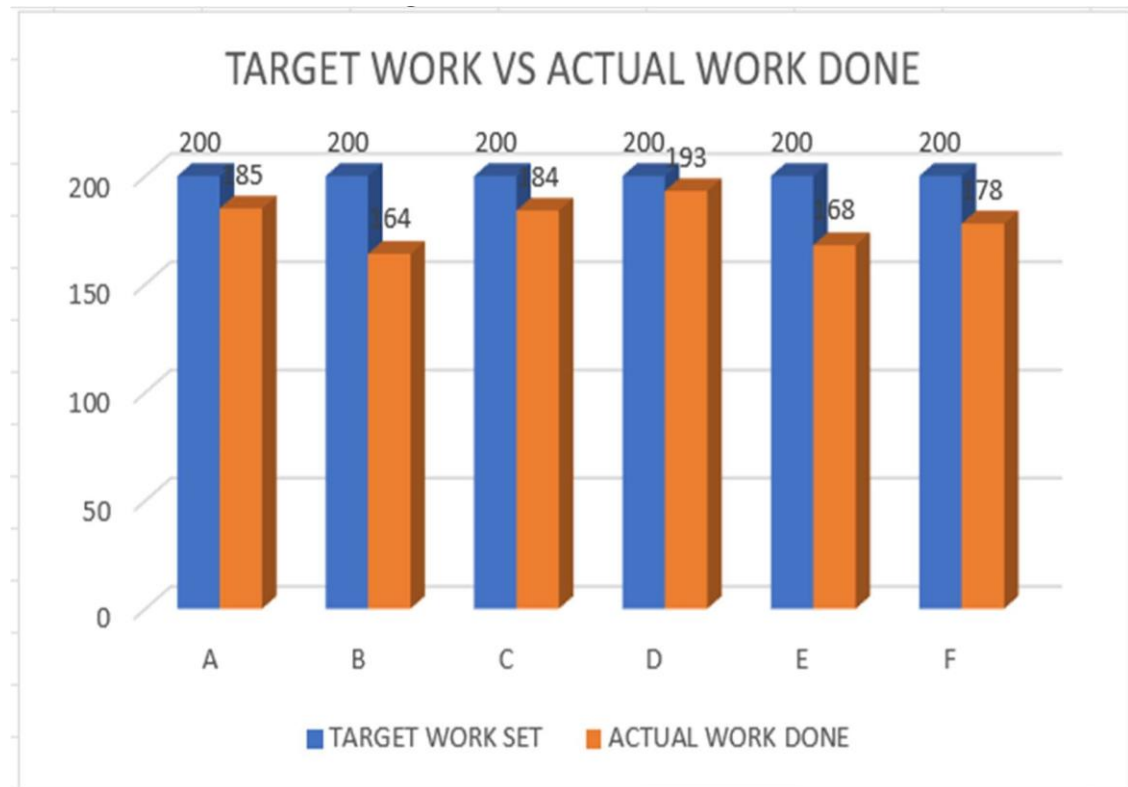
The above fig. shows comparison between the Employee's total production time to the average production time working on different EMR's in pictorial representation.

From the figure it is evident that the total time taken to complete the 150 samples is around 2:35:26 (HH:MM:SS) and the average time taken to complete the same sample account of 150 accounts is 00:13:18 (HH:MM:SS)

COMPARISON OF THE ACTUAL WORK TO THE TARGET WORK SET AFTER ANALYSIS:

A comparison between the actual work to that of the target set after analysis of time motion studies is shown in the form of bar charts as below:

Fig: 4.5 Actual Work vs Target Work



The above fig. shows comparison of the actual work done by the employees to the target work set after analysis is shown in pictorial representation.

From the figure it is evident that the blue bar represents the actual work done by each of the employees prior to the time and motion analysis study and the red bar shows the required target the employees have to reach to perform efficiently.

In case of Employee A the difference in the new target is very negligible and can be reached very easily which proves that Employee A is far more efficient than the remaining employees. Highest difference can be seen in case of Employee B followed by C & D. These targets will help the employees to be motivated to reach the expected target thereby increasing the efficiency and performance of the employees.

DISCUSSION

Several key findings that signify the complexity and challenges with the daily work involved for employees in the healthcare sector, especially with the numerous Electronic Medical Record (EMR) systems, have been brought to light in the current study. The recommendations in the discussion that follows therefore offer some possible solutions to make a feasible environment for the employees. This discussion furthers the implications of the findings and suggests how proposed recommendations can be embedded to drive improvements within healthcare settings.

Variation in Total Working Times

The significant variation in total working time really brings out the nuance that needs to apply in workflow management. The differences at the level of task complexity and the level of performance of individuals suggest that a one-size-fits-all approach should not be appropriate. Internal training programs on EMR user interfaces can really help in homogenizing the level of proficiency in the workforce, reducing disparities in time. Moreover, focused retraining of weaker performers would support the elimination of performance disparities between different classes of performers, resulting in higher consistency and efficiency in workflow.

Impact of Task Complexity

The tasks become beguilingly intricate with the complexity of the task entailed. Therefore, there should be strategies that wield the power to simplify these intricate processes. One such strategy might be the automation of repetitive tasks to reduce the burden of the process intricacy; this will enable employees to direct their efforts to matters of complexity and high importance with increased productivity and efficiency.

Challenges with EMR User Interfaces

One key drawback is having inconsistencies in the different EMR systems across the facilities. This can only be mitigated by providing substantial training to all staff and supporting the learning process further to equip the workers with knowledge and skills in using the systems effectively. Workers can also help one another to speed up the process

of learning for the less-experienced lot; this opens ways for a more cohesive and competent workforce. It is quite important and supportive of learning to build an environment that can effectively facilitate the transfer of knowledge through mentorship, collaboration, and such similar projects.

Time to Consult with Team Leaders

The study emphasized the role played by consultation time with team leaders in the total time taken to complete the tasks. Interactions of this nature may be unavoidable to reconcile the conflicts, but it obstructs the work and introduces a time lag in schedule. Realistic targets and tools and training provided to the staff to take a judicious decision independently to eliminate the need for such frequent consultations will be beneficial in reducing the number of such consultations. Such experienced staff members should be encouraged to share the work with the novice staff members to circumvent such types of distractions.

Role of Employee Experience.

Employee experience is one significant determinant of performance efficiency. The more experienced employees, as the findings show, are usually more efficient and effective. By running incentive programmes that identify efficient workers and reward them, motivation and production can both be maintained. Besides, real targets in regard to the level of capability of the workers will avoid exhausting workers at high levels and reduce the performance level continuously. From there, organizations can hold on to their experienced workers and continually raise their performances in a positive working atmosphere.

Usability of EPIC-EMR

Usability of EPIC-EMR and the effect on the time required for task completion point out the usability of the EMR system. Institutions have to spend on EMR systems that can be used easily with training so that the organizations can attain the full potential of it. Automation incorporated in these systems can enhance workflow productivity, and employees can reach the full capacity of the technology in use.

Variability in Process Steps

Differences in the process steps that come within various EMR systems mean that standardization could significantly cut the time efficiency in such instances. Processes or steps relating to fetching data, as well as non-value-adding steps in operations, can be considerably cut by such standardization. In this regard, organizations must note potential standardization within the current EMR systems and operations that might be enhanced to enable efficient flows.

Certainly, this raises the inefficiency of employees in many of the tasks that have to be performed, such as copying and pasting patient demographics, due to automation tools relieving them of such burdens to perform more meaningful work. Improvement in job satisfaction and productivity will highly be affected by bringing innovation in reducing time spent on routine activities.

This study determines some significant factors affecting workflow efficiency and employee performance, derived from healthcare settings. Therefore, the proposed recommendations aim to tackle these shortcomings through strategic solutions for training, knowledge dissemination, incentive programs, retraining, realistic goal setting, automation, and delegation of tasks. In that regard, healthcare organizations could translate recommended strategies into supportable and efficient working environments, thereby enhancing the performance of employees and the optimal use of EMR systems. Eventually, it will all lead to better patient care and organizational success.

CONCLUSION

This time and motion study with respect to the BPCI initiative of Prime Health Care Services has inferred a few things about operational efficiency and coordinated care. The following conclusions can be derived from the findings:

1. Enhanced Work Performance Capacity of the Employees: In the B.P.C.I model, in cases where realistic targets are set for the employees wherein the process is critical to achieve maximum efficiency, it has been proved that the individual employee strives to attain the goal since it is attainable. Such proactive attitude motivating better performance capacity among individuals makes the particular organization successful. Organized tasks planned and executed efficiently in a time and skill-effective manner so that care is effectively delivered with high quality and minimum wastage of time.

Impact on Continuum of Care: High performance translated by the employee shall be directly translated to the continuum of care delivered to patients across the sphere of healthcare facilities linked to Prime Health Care Services. The care coordination team can therefore afford more time and other resources for providing complete care in improving the patients when the employees are able to meet their targets consistently, the ultimate outcome being improved patient results and levels of satisfaction. This is aimed at ensuring a tightly knit delivery of health care, so that the whole patient experience is optimized, and not fragmented or delivered piecemeal during the course of treatment.

3. Relevance of an up-to-date LOS and DRGs to EMRs, since this is paramount in ensuring that there is a timeous and accurate updating of what will be used to manage the patient. This is in the way of giving real-time information to care coordination teams concerning the state of patients so that a decision about treatment plans is made and which procedures should be used at discharge. Proactive management of patient data is going to enhance coordination efforts, decrease delays, and reduce errors, improving overall patient safety and satisfaction.

4. Data Accessibility: Keeping patient data updated allows healthcare providers access to vital information on their own. This accessibility supports quick responses to patients,

hence aiding in dynamic medical circumstances and the ability to maintain the continuum of care and overall operation efficiency among healthcare facilities. Healthcare provider teams can augment patient safety with updated EMR data and help in improving overall patient satisfaction.

5. Bundled Payment: Proper accuracy and completeness in the documentation support timely reimbursement under CMS Bundled Payment models. The rigid following of CMS requirements and record maintenance standards of the hospital are much helpful in support operations of Prime Health Care Services with reduced financial risk and the maximized revenue cycle. Adherence to regulatory standards will not only result in financial viability for the organization but also will highlight an effective structure in which the prime focus is on quality and cost-effectiveness regarding patient care.

6. Increased Facility Efficiency: The increased performance and productivity of the workers will definitely get reflected in the improved efficiency of the facilities and utilization of resources in any type of healthcare set-up. Through a commitment to constant process improvement and operational excellence, service delivery is optimized at Prime Health Care Services, thus ensuring that emergent needs in the patient population are adequately met. Through this efficiency, it assures resources the best possible use for which they should be, reduces the waste factor, and has everything borrowed to ensure all services or acts of healthcare create maximum impacts.

This sums up to great emphasis on the strategic goal setting that involves identification, setting, and accuracy coupled with data compliance to the needed regulatory standards applicable in delivering health care at Prime Health Care Services. These results will translate into making Prime Health Care Services emerge the leader in patient-centered care and sustainable growth, even in the fiercest competitive health care environment. Proactive care coordination and the leveraging of technology in ensuring effective processes policies and Prime Health Care Services will remain at the forefront of quality service in healthcare provided to patients and stakeholders.

RECOMENDATIONS

Recommendations for the Elaborate Implementation Plan for Improving Workflow and Enhancing the Performance of the Workforce in the Healthcare Workplace, Founded on Current Study Findings

1. In-house Practice on Navigating Multiple EMR Usabilities: It is suggested that the efficiency of personnel while navigating multiple EMR usabilities can be increased through the use of extensive in-house practice sessions that are well designed to address all necessary functions and intricacies of organizational EMR systems. The training should be in a hands-on and very interactive format, with ample practice and questioning of the trainees. Refresher courses and updates should be done regularly to educate the employees on new features in the EMR systems or changes made to them. This will ensure the time taken to execute their functions is reduced, efficiency is improved with all employees proficient and comfortable with the technology used.

2. Knowledge Sharing among the Staff: It counts pretty much that the experienced staff assists and advises fully the colleagues having less experience on the functioning of the EMR systems. This could be done with the help of different mentorship programs, regular team meetings, and collaborative projects. A culture of knowledge sharing will, in turn, help less experienced staff reduce their learning curves and perform well on tasks. In addition, this compilation of best practices or creation of a repository may further accommodate tips and tricks regarding the use of these systems in an EMR for the convenience of all.

3. Incentive Programs for Motivation: An organization may implement incentive programs that can increase the motivation of staff, hence resulting in increased productivity. So, organizations need to look for ways to appreciate and reward their employees who have been continually able to achieve targets, as well as those who have overachieved. These incentives come in the shape of monetary benefits, extra leaves, public acknowledgment, or better career advancement appeal. Organizations, by nurturing a high-performance culture, may contribute to success at large and result in a highly motivated and fully committed workforce.

Re-training of Poor Performers: Staff members who do not meet the expected standards should go through targeted re-training programs. These may come from areas identified as needing improvement after the performance evaluations undertaken. The training sessions should be individualized to enable the attending to areas of weaknesses with more support and lift such employees to desired levels of productivity. Follow-ups and continuous support will have to be put in place for close monitoring and sustainability of the improvement and development process.

5. Setting Realistic Targets: Appropriate and achievable targets should be set for employees to avoid stress and demotivation. All targets should be set after proper analysis of worker capability and demand of workload. Setting manageable targets will enable organizations to maintain a positive working environment and achieve high productivity combined with job satisfaction. Regular review and alteration of targets will be required for selected relevance and applicability.

6. Automation of Repetitive Tasks: Efficiency in workflow processes should involve the introduction of automation tools in EMR systems for carrying out repetitive tasks. Automation in this case should be done in such procedures as data entry, updating of patient demographics, and documentation, among other factors, for purposes of making such tasks easy on the employees. Automation can free up important time for employees to do activities that add value and that require their area of expertise and judgment. This does not only improve efficiency, it creates satisfaction for the performers in getting away from monotonous and repetitive works.

7. Delegation of Task to Under Experienced Employees: In real sense, you should encourage experienced employees to delegate work pressure to those less experienced after they have met their targets. The delegation shall effectively help in the equal sharing of work, which will mitigate burnout among the experienced staff through overworking. This will also provide a platform for the junior staff employees to learn the new trends and acquire new skills, and will breed collaboration through teamwork. This would create

a supportive and cooperative work atmosphere that would increase overall productivity and employee engagement.

The recommendations are very detailed and are made to overcome the identified challenges, seize the opportunities to make operations more efficient, and raise employee performance to greater heights in the health organization. When the strategies are specifically implemented, health facilities will promote a proactive work environment that facilitates self-improvement and guarantees the use of EMR systems in the right way in order to deliver quality care. This goes to helping organizations create better and more effective workforces that are motivated and skilled through targeted training, knowledge sharing, incentive programs, realistic target setting, automation, and effective task delegation, thus ensuring better patient outcomes and success of the organizations.

REFERENCES

1. Centers for Medicare & Medicaid Services. Bundled Payments for Care Improvement (BPCI) Initiative. [Internet]. Available from: <https://innovation.cms.gov/innovation-models/bpci-advanced>
2. Prime Healthcare. About Prime Healthcare. [Internet]. Available from: <https://www.primehealthcare.com/About-Prime.aspx>
3. Kenealy TW, Mace J, Bateman H, et al. Determination of standard times for process improvement: a case study. J Med Pract Manage. 2017;32(3):156-160. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5757667>
4. ResearchGate. Determination of standard times for process improvement: a case study. [Internet]. Available from: https://www.researchgate.net/publication/316069287_Determination_of_Standard_Times_for_Process_Improvement_A_Case_Study
5. Centers for Medicare & Medicaid Services. Bundled Payments for Care Improvement (BPCI) Initiative. [Internet]. Available from: <https://innovation.cms.gov/innovation-models/bpci-advanced>
6. Prime Healthcare. [Internet]. Available from: <https://www.primehealthcare.com/>
7. Prime Healthcare. About Prime Healthcare. [Internet]. Available from: <https://www.primehealthcare.com/About-Prime.aspx>
8. Kenealy TW, Mace J, Bateman H, et al. Determination of standard times for process improvement: a case study. J Med Pract Manage. 2017;32(3):156-160. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5757667/>

9. ResearchGate. Determination of standard times for process improvement: a case study. [Internet]. Available from: https://www.researchgate.net/publication/316069287_Determination_of_Standard_Times_for_Process_Improvement_A_Case_Study
10. ResearchGate. Automatic time study method for recording work phase times of timber harvesting. [Internet]. Available from: https://www.researchgate.net/publication/260171717_Automatic_Time_Study_Method_for_Recording_Work_Phase_Times_of_Timber_Harvesting
11. ResearchGate. Enhancement of productivity and overall equipment efficiency using time and motion study technique - a review. [Internet]. Available from: https://www.researchgate.net/publication/283620662_Enhancement_of_Productivity_and_Overall_Equipment_Efficiency_Using_Time_and_Motion_Study_Technique_-_A_Review
12. ResearchGate. Automatic time study method for recording work phase times of timber harvesting. [Internet]. Available from: https://www.researchgate.net/publication/260171717_Automatic_Time_Study_Method_for_Recording_Work_Phase_Times_of_Timber_Harvesting
13. ResearchGate. Enhancement of productivity and overall equipment efficiency using time and motion study technique - a review. [Internet]. Available from: https://www.researchgate.net/publication/283620662_Enhancement_of_Productivity_and_Overall_Equipment_Efficiency_Using_Time_and_Motion_Study_Technique_-_A_Review
14. ResearchGate. Enhancement of productivity and overall equipment efficiency using time and motion study technique - a review. [Internet]. Available from: https://www.researchgate.net/publication/283620662_Enhancement_of_Productivity_and_Overall_Equipment_Efficiency_Using_Time_and_Motion_Study_Technique_-_A_Review

15. Dr. Nallusamy. Enhancement of productivity and overall equipment efficiency using time and motion study technique - a review. [Internet]. Available from: https://www.researchgate.net/profile/Dr-Nallusamy/publication/283620662_Enhancement_of_Productivity_and_Overall_Equipment_Efficiency_Using_Time_and_Motion_Study_Technique_-_A_Review/links/56ac4cd408ae43a39809e093/Enhancement-of-Productivity-and-Overall-Equipment-Efficiency-Using-Time-and-Motion-Study-Technique-A-Review.pdf?origin=publication_detail&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uRG93bmVvYXQiLCJwcmV2aW91c1BhZ2UiOiJwdWJsaWNhdGlvbiJ9fQ

16. ResearchGate. Determination of Standard Times for Process Improvement: A Case Study. [Internet]. Available from: https://www.researchgate.net/publication/316069287_Determination_of_Standard_Times_for_Process_Improvement_A_Case_Study

17. ResearchGate. Automatic time study method for recording work phase times of timber harvesting. [Internet]. Available from: https://www.researchgate.net/publication/260171717_Automatic_Time_Study_Method_for_Recording_Work_Phase_Times_of_Timber_Harvesting

APENDIX

Parameters used for data collection

ACCOUNTS						
PATIENT UMR						
EMPLOYEE NAME						
FACILITIES						
EMR						
START TIME (HH:MM: SS)						
END TIME (HH:MM: SS)						
BREAK TAKEN						
TOTAL WORKING TIME(HH:MM: SS)						
AVERAGE TIME PER ACOUNT						

Comparison between Employees Performance:

EMPLOYEE	TOTAL TIME TAKEN	AVERAGE TIME TAKEN
A		
B		
C		
D		
E		
F		

Comparison on total time taken average time taken on different EMR:

EMR/TIME	TOTAL TIME	AVERAGE
EPIC		
MEDITECH		
NE&NM		

Time taken to work on each facility:

FACILITY	TIME TAKEN
RRMC	
CHMC	
DVH	
PVH	
SOH	
SRMC	
MH	
PMC	
MMC	
NVH	
SMRMC	
SCBH	
SMGH	
DMC	
PRMC	

