

Time Motion and Element Study for Designing A Unique Critical Care Flow Sheet

By

Syed Waseem Farooq

*Dissertation submitted for the partial fulfillment of the
MBA Pharmaceutical Management*

Academic year, 2015-2017



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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr Syed Waseem Farooq** student of MBA Pharmaceutical Management from The IIHMR University, Jaipur has undergone internship training at **Manipal Hospital, Jaipur** from **February 06, 2017** to **May 05, 2017**.

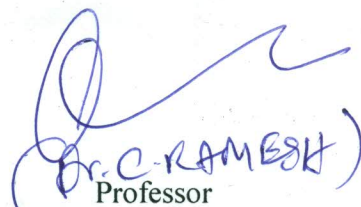
The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



Dean, Academics and Student Affairs
The IIHMR University, Jaipur



Professor
The IIHMR University, Jaipur



SMH/HR/2017/ECR00234

Date: 15th May 2017

TO WHOMSOEVER IT MAY CONCERN

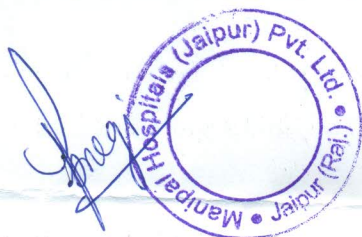
This is to certify that, Dr. Syed Waseem Farooq, a student of IIHMR has undergone his internship project with us from 6th Feb 2017 to 5th May 2017.

During this period, he/she was involved in projects pertaining to "Time Motion and Element Study for Designing a Unique Critical Care Flow Sheet" At "Manipal Hospital (Jaipur) Pvt. Ltd.

His performance on the projects assigned and his conduct was found to be good.

We wish his success in his future endeavors.

For Manipal Hospital (Jaipur) Pvt. Ltd.



Authorized Signatory

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CERTIFICATE BY SCHOLAR

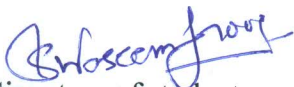
This is to certify that the dissertation titled **Time Motion and Element Study for Designing a Unique Critical Care Flow Sheet** and submitted by (Name) **Dr Syed Waseem Farooq** Enrollment No **IIHMR-U/01/2015-17/0048** under the supervision of **Dr C. Ramesh** for award of MBA in Pharmaceutical of the University carried out during the period from **February 06, 2017 to May 05, 2017** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.


Signature

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **TIME MOTION AND ELEMENT STUDY FOR DESIGNING A UNIQUE CRITICAL CARE FLOW SHEET.**


Signature of student

ACKNOWLEDGEMENTS

I express my great sense of gratitude to acknowledge the co-operation and support of **Manipal Hospital, Jaipur** for giving me this unique privilege of completing my project by visiting its premises for 90 days and providing me an opportunity to interact with its various personnel.

My institute – **Indian Institute of Health Management Research (IIHMR)**, Jaipur & its Education deserves the foremost appreciation for providing me the opportunity to understand my individual capabilities. I would like to thank col. (Dr.) Ashok Kaushik (Dean Academics and student Affairs, IIHMR, Jaipur) to provide such a great learning opportunity. Of course, entire faculty at IIHMR had facilitated the endeavor; I also acknowledge the contribution of my college Guide, **Dr. C Ramesh** completion of the project.

The collection and my learning would not have been possible without the kind support and help from **Dr. Shivani Arora (Quality Department)** and **Mr. Naveen Malik (Head-Human Resource Department)**. I would like to extend my thanks for his support & guidance. My heartfelt gratitude goes to **Mr. Prateek Negi (HR Department)** .

I would also like to thank all other people of Manipal Hospital who helped me make this report a meaningful one.

Dr Syed Waseem Farooq
MBA Pharmaceutical Management,
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ACRONYMS/ABBREVIATIONS

• FOS	Fortis Operating System
• CCFS	Critical Care Flow Sheet
• IVC	Inferior Vena cava
• PIVD	Prolapsed of Intervertebral Disc
• CAD	Coronary Artery Disease
• DVD	Double Vessel Disease
• Ca	Carcinoma
• PIH	Prolactin Inhibiting Hormone
• IUGR	Intra uterine Growth Retardation
• DUB	Dysfunctional Uterine Bleeding
• RHD	Rheumatic Heart Disease
• PCA	Posterior Cerebral Artery
• DVT	Deep Vein Thrombosis
• CLD	Chronic Liver Disease
• SAH	Sub Arachnoid Hematoma
• SDH	Sub Dural Hemorrhage
• EDH	Extra Dural Hemorrhage
• SOL	Space Occupied Lesion
• ICH	Intra Cerebral hemorrhage.
• RTA	Road Traffic Accident.

Abstract

Context

Nurses are the primary hospital caregivers. Increasing the efficiency and effectiveness of nursing care is essential to hospital function and the delivery of safe patient care.

Objective

Primary objective

To make a unique critical care flow sheet

Secondary objectives

- To bring uniformity in all the critical care flow sheets used in ICU's.
- To remove certain extra documents in order to increase nursing efficiency.

Design

Time motion study

- Study time- 204 Hours
- Number of Nursing staff of the ICU's – 30
- Study type - Descriptive study (Observational)
- Sampling technique - Convenience sampling.
- Study Tool: Prepared a tool in which divided the time slots in five minute segments.

Element study

- Sample size- 45 live ICU charts
- Study type- Exploratory study
- Sampling technique - Convenience sampling.
- Study Tool- All the elements of ICU charts (unfilled new) was numbered and the compliance was checked from the ICU charts (filled).

Main Outcome Measures: Nurses' time was divided into -

1. Documentation
2. Patient monitoring
3. Communication
4. Technical work
5. Miscellaneous

Results

- 16.21% of the time of nursing staff goes in documentation procedure.
- Non value added time accounts for about 4.53%.
- Some elements of the ICU charts go unfilled, some are irrelevantly filled,
- Some columns in ICU charts are repeated.
- Some of them are not according to requirement or their formats are not relevant.
- Some columns are missing which are essential e.g. Reference doctor column..
- Some extra documents are being unnecessarily used.

Conclusion

- Made one ICU chart adding all necessary components of all the ICU'S to it and then making it universal

Key Words – Time Motion , Element Study, CCFS Nurses Documentation etc.

Submitted by

Syed Waseem Farooq

INTRODUCTION

“The unexamined life is not worth living,” said the great management thinker Socrates. Every day, people say that they’ll change. At the beginning of every year, millions make resolutions. Most do this without data, hypotheses or any idea of what they’re going to do differently. And they wonder why nothing really changes.

Intention without information is powerless. To misquote great management thinker, Albert Einstein, doing the same thing and hoping for a different result is the definition of inefficiency. This is where the personal time and motion study can help.

Time motion studies were first described in the early 20th century in industrial engineering, referring to a quantitative data collection method where an external observer captured detailed data on the duration and movements required to accomplish a specific task, coupled with an analysis focused on improving efficiency. Since then, they have been broadly adopted by biomedical researchers and have become a focus of attention due to the current interest in clinical workflow related factors. However, attempts to aggregate results from these studies have been difficult, resulting from a significant variability in the implementation and reporting of methods. While efforts have been made to standardize the reporting of such data and findings, a lack of common understanding on what “time motion studies” are remains, which not only hinders reviews, but could also partially explain the methodological variability in the domain literature (duration of the observations, number of tasks, multitasking, training rigor and reliability assessments) caused by an attempt to cluster dissimilar sub-techniques. A crucial milestone towards the standardization and validation of time motion studies corresponds to a common understanding, accompanied by a proper recognition of the distinct techniques it encompasses. Towards this goal, we conducted a review of the literature aiming at identifying what is being referred to as “time motion studies”.

We undertook a time and motion study to provide an evidence-based understanding of how medical-surgical nurses spend their time and of the influence of unit architectural layout on nurses' use of time and distance traveled. Documenting the drivers of inefficiency in nursing practice will allow for targeted changes to the work environment to positively influence patient safety and quality of care.

Measuring the average nursing care time is an objective measure for assessing the quantity and quality of the nursing staff in hospitals because it allows hospitals to evaluate the condition of the existing human resources. Thus, in intensive care units (ICU), predictions for personnel requirements should be estimated using instruments that consider the various nursing activities involved, which helps to quantify the actual workload and determine the number of workers needed to form a team.

It is in these scenarios that identifying the nursing workload is the key to determine the needed workforce of health professionals. To identify this variable, the time that nurses use to provide patient care must be measured, and the tools used to measure the workload should also consider indirect care activities.

Given that the ICU is one of the health care fields where technology is constantly improving, in addition to a large amount of patient information and data, a significant amount of attention has been directed toward electronic health systems. The use of information technology systems provides easy access to information, data sharing possibilities, simultaneous access to information by multiple professionals, legibility and integration with other health information systems, reducing the overall time spent on documenting patient care activities.

Thus, the aim of this study was to identify the direct and indirect nursing care time in an intensive care unit.

RATIONALE

Our aim for doing time and motion studies is to establish rules of motion that guaranteed optimal performance during a given time period and reduces the number of movements needed to get work accomplished so that such time can be used to increase the nursing efficiency in bed time care. Time and motion studies have been done in many ways both to ascertain how long it takes to do a given job and to improve it through setting production goals and reducing unnecessary steps in a process. Our time and motion study is entirely focused on the time aspect of work, or how long it takes to do a job, and is critical in getting fundamental information on how a process is working.

REVIEW OF LITERATURE

The ICU patient presents challenges for carers because their condition can change rapidly and in an unpredictable way, necessitating the need for constant vigilance. Nursing activities in the ICU have been explored to describe nurses' workload.

Aitken and Bucknall explored the decision making of ICU RNs in the clinical setting. Aitken observed eight expert critical care nurses in 2 h periods as they worked at the bedside. Bucknall used event sampling and a microphone to record and observe 18 nurses of different levels for 2 h after handover. Her findings indicated that the individual and their environment are factors that will affect the critical care nurse's decision making process. Wong et al. utilised a time and motion method to observe 10 ICU nurses for 4h before and after the introduction of a computer information system in an American hospital. The authors used 5 major categories of direct care, indirect care, Documentation, Administrative, Housekeeping and 69 subcategories to group the critical care nurses' activities. Their findings indicated that ICU nurses time documenting decreased by 31% after the introduction of the computer information system which meant that more time was spent on 'direct care' activities.

In an study of ICU nurses over a one-week period covering all shifts, ICU nurses documented their activities every 5 min in 135 logs. About 85% of nursing activities fell within four categories "patient assessment 38%, direct nursing care 24%, clerical nursing duties 17%, and time out, patient-focused activity 6%" The "time out, patient-focused activity" had seven activities such as communication with relatives, preoperative visits and patient transfers. Patient assessment consumed 18% of the ICU nurses' time.

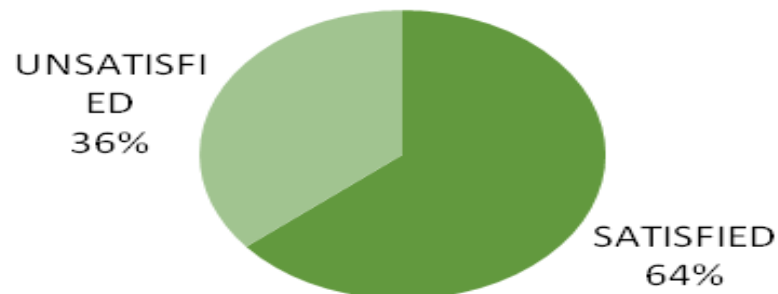
According to M. Abbey Mphil, Grad Cert, BN(Hons)a,*, W. Chaboyer PhD, MN, BScb, M. Mitchell RN, BN(Hons), Grad Cert Ed (Higher Ed), PhDc Just over 76 h of observations occurred over 10 days and 3081 activities documented during this time. The major work activity groups for the ICU nurses were; 'direct care' 1857 activities and 40.5% of their time, 'indirect care' 986 activities and 32.4% of their time, 'personal' activities 140 activities and 21.9% of their time and 'unit-related' 98 activities and 5.0% of their time. The ICU nurses undertook two activities simultaneously for 43% of the study timeframe.

According to Ann Hendrich, RN, MSN, FAAN Marilyn P Chow, DNSc, RN, FAAN Boguslaw A Skierczynski, PhD Zhenqiang Lu, PhD A total of 767 nurses participated. More than three quarters of all reported time was devoted to nursing practice. Three subcategories accounted for most of nursing practice time: documentation (35.3%; 147.5 minutes), medication administration (17.2%; 72 minutes), and care coordination (20.6%; 86 minutes). Patient care activities accounted for 19.3% (81 minutes) of nursing practice time, and only 7.2% (31 minutes) of nursing practice time was considered to be used for patient assessment and reading of vital signs.

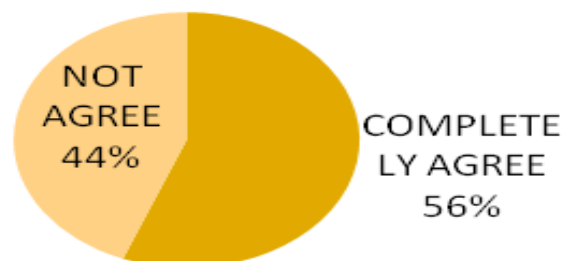
Zhihua Tang, PhD, Janine Mazabob, RN, MAOM, Liza Weavind, MD, Eric Thomas, MD, and Todd R. Johnson, PhD conducted a time-motion study of registered nurses' work in an ICU remote monitoring facility. Data were collected on seven nurses through 40 hours of observation. The results showed that nurses' essential tasks were centered on three themes: monitoring patients, maintaining patients' health records, and managing technology use. In monitoring patients, nurses spent 52% of the time assimilating information embedded in a clinical information system and 15% on monitoring live vitals.

NEED OF THE PROJECT

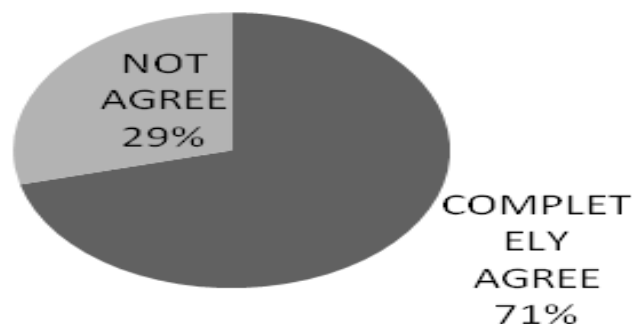
ARE YOU SATISFIED WITH THE CURRENT ICU CHART?



DO YOU AGREE THAT FILLING UP THE ICU CHARTS TAKE MOST OF YOUR TIME?

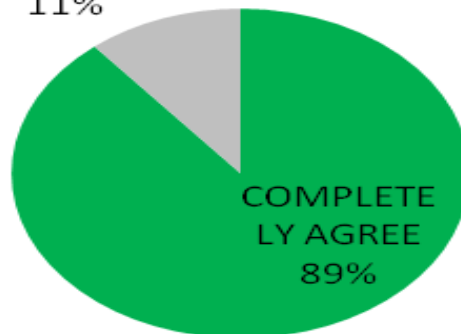


DO YOU AGREE THAT FEW THINGS HAVE BEEN REPEATED IN THE ICU CHART?



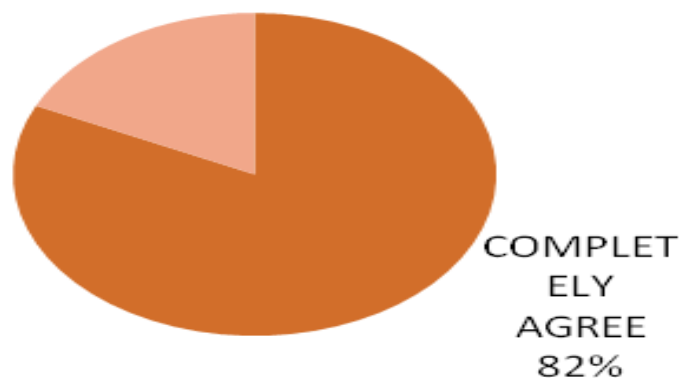
**DO YOU AGREE THAT FEW THINGS
ALWAYS GO UNFILLED IN THE CHART?**

NOT AGREE
11%



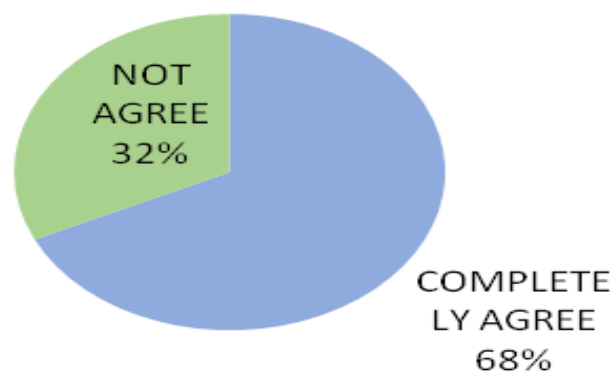
**DO YOU AGREE THAT IT REQUIRES
MODIFICATION?**

NOT
AGREE
18%



**DO YOU AGREE THAT THERE SHOULD BE
ONLY ONE ICU CHART FOR ALL ICU'S?**

NOT
AGREE
32%



OBJECTIVE

- To make a unique critical care flow sheet for all ICU's.
- To find out the time taken by ICU nurses in filling documents, for patient monitoring, in communication, their personal time and the non value added time in morning, evening and night shifts.
- To find out the element that remains completely unfilled or is being irrelevantly filled by the nursing staff.

METHODOLOGY

Sample size for time motion study – 30 ICU nursing staff

Sampling type –Convenience sampling

Type of study –Descriptive and Exploratory

Study hours – 204 Hours.

Data collection method – We prepared a tool in which we divided the time slots in five minute segments and then observations were made.(annexure attached)

Sample size for element study – 45 Critical Care Flow Sheets

Sampling type – Randomized convenient sampling

Tool was made in such a way that included each five minutes of observation for all the six hours (which makes one shift). The tool included five major categories which are –

- 1) Documentation
- 2) Patient monitoring
- 3) Communication
- 4) Technical work
- 5) Miscellaneous

Further we divided these major categories in minor sub categories which are –

DOCUMENTATION			
CCFS	EXCEPT-CCFS	ADDMISSION	DISCHARGE

PATIENT MONITORING			
VITAL SIGNS	MEDI. PRE. & ADMINISTRAT	HYGIENE	SAMPLING & TESTING

COMMUNICATION		
WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR

TECHNICAL WORK	
COMPUTER	ICU DEVICE

MISCELLANEOUS	
PERSONAL	NON VALUE ADDED TIME

- Critical care flow sheet – It is a chart which is used by doctors and nursing staff to monitor and record vitals of 24 hours.
- Except critical care flow sheet documents –
 - 1) Medication chart
 - 2) Blood bank issue slip
 - 3) Relative communication record
 - 4) Pressure sore prevention /care flow sheet
 - 5) Modified aldrete scoring system
 - 6) Daily reminder checklist for devices and ICU/wards
 - 7) Pre catheterization nursing checklist
 - 8) Microbiology
 - 9) Pre operative checklist
 - 10) Blood transfusion notes
 - 11) Antibiotic calendar
 - 12) OT documentation checklist
 - 13) Nursing log for cath procedures
 - 14) Shift handover check list
 - 15) Vital signs flow sheet
 - 16) Nursing admission assessment
 - 17) Nursing care plan
 - 18) Pre cath check list
 - 19) Investigation flow chart
 - 20) Nurses investigation chart
 - 21) Central line maintenance checklist
- Vital signs include checking patient's vitals like blood pressure, heart rate, temperature etc on monitor.

- Since the admission and discharge process' documentation differ from that of other documentation so we have defined it into other categories, So that individual time for each can be ruled out.
- Under patient monitoring the hygiene part includes patients' as well as nurses' hygiene
- Sampling time is the time which starts from collecting patients' sample e.g. Taking blood sample and then testing it to generate reports.
- Under technical work all the computer related work like printing of required form, updating patient reports and tracking their results etc are included. Similarly dealing with ICU devices includes like suction procedure, catheterization, handling medication pump etc.
- Personal time includes the time spent on receiving personal calls, talking to other staff those things which are not relevant to patient history, in between meals time.
- Non value added time includes calling pharmacy again and again for medicines, calling patients' attendants to meet the doctor, running after doctor for signature, waiting for doctor to accompany the critical patients to get diagnostic imaging of patients done .
- Currently there are four different flow sheets used in all the ICUs and Neuro general ward in the Hospital.
 1. MICU-1, MICU-2, HDU, CCU have one type of flow sheet
 2. SICU-1 and SICU-2 have one type.
 3. SICU-3 and SICU-4 have one type.
 4. In Neuro general ward one type of flow sheet

RESULTS

ALL SHIFTS COMPILED DATA

TABLE - 1

TIME INTERVAL	DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
	CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTRATION	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
TOTAL(6HRS)	21	23.5	0	51	5	36	9	37	62.5	18	14.5	23	20.5	26.5	12.5	360
TOTAL(6HRS)	6.5	39.5	0	0	5.5	77.5	8.5	10.5	42.5	61	29	10.5	19.5	12	37.5	360
TOTAL(6HRS)	36	58	0	0	13.5	54	19.5	14.5	61	25	7	6	36.5	23.5	5.5	360
TOTAL(6HRS)	21	28	0	0	12	28	12	11.5	99.5	65	18	9	30	24.5	1.5	360
TOTAL(6HRS)	28	31	0	0	8	49	10.5	34	60.5	29.5	19	24	25.5	27.5	13.5	360
TOTAL(6HRS)	34	53	0	0	12	58	18.5	15	61.5	25.5	9	9	34.5	20.5	9.5	360
TOTAL(6HRS)	9	38	0	0	9	74	11.5	11.5	41	59	32	12.5	17.5	13	32	360
TOTAL(6HRS)	21	26	0	0	8	29	10.5	12.5	94.5	69.5	22	11.5	26.5	22	7	360
TOTAL(6HRS)	20	35	0	0	11	52	13.5	15.5	68.5	48.5	21	14.5	27.5	21.5	11.5	360
TOTAL(6HRS)	22	33	0	0	10	57	11.5	24.5	69	45.5	10	19.5	20.5	24.5	13	360
TOTAL(6HRS)	12	34	0	0	7	79	9.5	9.5	49.5	55	27	11.5	22.5	14	29.5	360
TOTAL(6HRS)	23	31	0	0	6	75	14.5	28.5	56	24	18	24.5	23.5	25	11	360
TOTAL(6HRS)	21.5	26.5	0	0	6	40	12.5	26	78	60	24.5	11	23	13	18	360
TOTAL(6HRS)	21.5	23	0	51	5	35.5	9	37	62.5	18	14.5	23	20.5	26.5	13	360
TOTAL(6HRS)	6	40	0	0	5.5	78	8.5	10.5	42.5	61	29	10.5	19.5	12	37	360
TOTAL(6HRS)	36.5	58	0	0	13.5	54.5	19.5	14.5	60.5	24.5	7	5.5	36	23.5	6.5	360
TOTAL(6HRS)	20.5	28	0	0	12	27.5	12	11.5	99.5	65	18	9.5	30	24.5	2	360
TOTAL(6HRS)	27.5	31	0	0	7.5	48.5	10.5	34.5	60.5	29.5	19.5	24.5	25.5	27.5	13.5	360
TOTAL(6HRS)	34.5	53	0	0	12.5	58.5	18.5	14.5	61.5	26.5	8.5	8.5	34.5	20.5	8.5	360
TOTAL(6HRS)	8.5	38	0	0	8.5	74.5	11.5	11.5	42	58.5	32	12.5	17.5	12.5	32.5	360
TOTAL(6HRS)	21.5	26	0	0	9.5	28.5	10.5	12.5	94	69.5	22	12	28	22.5	3.5	360
TOTAL(6HRS)	20.5	35	0	0	9.5	51.5	13	16.5	68.5	48.5	22.5	13.5	27.5	21.5	12	360
TOTAL(6HRS)	22.5	33	0	0	10.5	57.5	12.5	23.5	69.5	45.5	9.5	19.5	19.5	24.5	12.5	360
TOTAL(6HRS)	10.5	34	0	0	7.5	79	9.5	9.5	50	55.5	27.5	11.5	22.5	13.5	29.5	360
TOTAL(6HRS)	24	30.5	0	0	5.5	74.5	13.5	28	55.5	24	16.5	24.5	23.5	25.5	14.5	360
TOTAL(6HRS)	21	27	0	0	6	40.5	13	26.5	77.5	59.5	24.5	11.5	23	13	17	360
TOTAL(6HRS)	56.5	17.5	0	0	19.5	95	0	5.5	79.5	2.5	7.5	0	59.5	14.5	2.5	360
TOTAL(6HRS)	49.5	16.5	0	0	20.5	84	5.5	6.5	84.5	5.5	3	9.5	44.5	12.5	18	360
TOTAL(6HRS)	49	18.5	0	0	16.5	94	7.5	3.5	60.5	6.5	5.5	11.5	40.5	17.5	29	360
TOTAL(6HRS)	50	16.5	0	0	17.5	86	2.5	5.5	70.5	6.5	8.5	10.5	45	15.5	25.5	360
TOTAL(6HRS)	13.5	22.5	0	0	11.5	102	34.5	14.5	30.5	24.5	9.5	0	20	59	18	360
TOTAL(6HRS)	12.5	24.5	0	0	9	96.5	31.5	19.5	35.5	29.5	11.5	3.5	15.5	55	16	360
TOTAL(6HRS)	14.5	20.5	0	0	9.5	98.5	29.5	17.5	32.5	25.5	12.5	3.5	21.5	51.5	23	360
TOTAL(6HRS)	15.5	21.5	0	0	10.5	97.5	36	15.5	40.5	27.5	9	4.5	17.5	45.5	19	360
TOTAL	811	1071	0	102	340.5	2170.5	470	589	2122	1299	569	416	919	806	555	12240
	1984				3570				3990			1335		1361		12240
	6.63%	8.75%	0.00%	0.83%	2.78%	17.73%	3.84%	4.81%	17.34%	10.61%	4.65%	3.40%	7.51%	6.58%	4.53%	100.00%
	16.21%				29.17%				32.60%			10.91%		11.12%		100.00%
AVERAGE TIME/SHIFT/STAFF	23.85294	31.5	0	3	10.01471	63.83824	13.82353	17.32353	62.41176	38.20588	16.73529	12.23529	27.02941	23.70588	16.32353	
	58.35				105.00				117.35			39.26		40.03		360

- **Table 1** indicates that out of 6 Hours an average of 58.35 minutes go in documentation, and out of these 58.35 minutes an average of 23.85 minutes go in filling up the CCFS while as 31.5 minutes go in filling up the extra documentation comprising of all necessary documents except CCFS.

TABLE – 2

MORNING																	
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTRAT	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
TOTAL(6HRS)		21	23.5	0	51	5	36	9	37	62.5	18	14.5	23	20.5	26.5	12.5	360
TOTAL(6HRS)		6.5	39.5	0	0	5.5	77.5	8.5	10.5	42.5	61	29	10.5	19.5	12	37.5	360
TOTAL(6HRS)		36	58	0	0	13.5	54	19.5	14.5	61	25	7	6	36.5	23.5	5.5	360
TOTAL(6HRS)		21	28	0	0	12	28	12	11.5	99.5	65	18	9	30	24.5	1.5	360
TOTAL(6HRS)		28	31	0	0	8	49	10.5	34	60.5	29.5	19	24	25.5	27.5	13.5	360
TOTAL(6HRS)		34	53	0	0	12	58	18.5	15	61.5	25.5	9	9	34.5	20.5	9.5	360
TOTAL(6HRS)		9	38	0	0	9	74	11.5	11.5	41	59	32	12.5	17.5	13	32	360
TOTAL(6HRS)		21	26	0	0	8	29	10.5	12.5	94.5	69.5	22	11.5	26.5	22	7	360
TOTAL(6HRS)		20	35	0	0	11	52	13.5	15.5	68.5	48.5	21	14.5	27.5	21.5	11.5	360
TOTAL(6HRS)		22	33	0	0	10	57	11.5	24.5	69	45.5	10	19.5	20.5	24.5	13	360
TOTAL(6HRS)		12	34	0	0	7	79	9.5	9.5	49.5	55	27	11.5	22.5	14	29.5	360
TOTAL(6HRS)		23	31	0	0	6	75	14.5	28.5	56	24	18	24.5	23.5	25	11	360
TOTAL(6HRS)		21.5	26.5	0	0	6	40	12.5	26	78	60	24.5	11	23	13	18	360
		275	456.5	0	51	113	708.5	161.5	250.5	844	585.5	251	186.5	327.5	267.5	202	4680
		782.5				1233.5				1680.5			514		469.5		4680
		5.88%	9.75%	0.00%	1.09%	2.41%	15.14%	3.45%	5.35%	18.03%	12.51%	5.36%	3.99%	7.00%	5.72%	4.32%	100.00%
		16.72%				26.36%				35.91%			10.98%		10.03%		100.00%
AVERAGE TIME /STAFF/SHIFT		21.15385	35.11538	0	3.923077	8.692308	54.5	12.42308	19.26923	64.92308	45.03846	19.30769	14.34615	25.19231	20.57692	15.53846	
		60.19230769				94.88461538				129.2692308			39.53846154		36.11538462		

- **Table II** indicates that out of 6 Hours the average time that goes in filling documents in the morning shift is 60.19 minutes and out of these 60.19 minutes an average of 21.15 minutes go in filling up the CCFS while as 35.11 minutes go in filling up the extra documentation comprising of all necessary documents except CCFS.

TABLE – 3

EVENING																	
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR. AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
TOTAL(6HRS)		21.5	23	0	51	5	35.5	9	37	62.5	18	14.5	23	20.5	26.5	13	360
TOTAL(6HRS)		6	40	0	0	5.5	78	8.5	10.5	42.5	61	29	10.5	19.5	12	37	360
TOTAL(6HRS)		36.5	58	0	0	13.5	54.5	19.5	14.5	60.5	24.5	7	5.5	36	23.5	6.5	360
TOTAL(6HRS)		20.5	28	0	0	12	27.5	12	11.5	99.5	65	18	9.5	30	24.5	2	360
TOTAL(6HRS)		27.5	31	0	0	7.5	48.5	10.5	34.5	60.5	29.5	19.5	24.5	25.5	27.5	13.5	360
TOTAL(6HRS)		34.5	53	0	0	12.5	58.5	18.5	14.5	61.5	26.5	8.5	8.5	34.5	20.5	8.5	360
TOTAL(6HRS)		8.5	38	0	0	8.5	74.5	11.5	11.5	42	58.5	32	12.5	17.5	12.5	32.5	360
TOTAL(6HRS)		21.5	26	0	0	9.5	28.5	10.5	12.5	94	69.5	22	12	28	22.5	3.5	360
TOTAL(6HRS)		20.5	35	0	0	9.5	51.5	13	16.5	68.5	48.5	22.5	13.5	27.5	21.5	12	360
TOTAL(6HRS)		22.5	33	0	0	10.5	57.5	12.5	23.5	69.5	45.5	9.5	19.5	19.5	24.5	12.5	360
TOTAL(6HRS)		10.5	34	0	0	7.5	79	9.5	9.5	50	55.5	27.5	11.5	22.5	13.5	29.5	360
TOTAL(6HRS)		24	30.5	0	0	5.5	74.5	13.5	28	55.5	24	16.5	24.5	23.5	25.5	14.5	360
TOTAL(6HRS)		21	27	0	0	6	40.5	13	26.5	77.5	59.5	24.5	11.5	23	13	17	360
		275	456.5	0	51	113	708.5	161.5	250.5	844	585.5	251	186.5	327.5	267.5	202	4680
		782.5				1233.5				1680.5			514		469.5		4680
		5.88%	9.75%	0.00%	1.09%	2.41%	15.14%	3.45%	5.35%	18.03%	12.51%	5.36%	3.99%	7.00%	5.72%	4.32%	100.00%
		16.72%				26.36%				35.91%			10.98%		10.03%		100.00%
AVERAGE TIME /STAFF/SHIFT		21.15385	35.11538	0	3.923077	8.692308	54.5	12.42308	19.26923	64.92308	45.03846	19.30769	14.34615	25.19231	20.57692	15.53846	
		60.19230769				94.88461538				129.2692308			39.53846154		36.11538462		

- **Table III** indicates that out of 6 Hours the average time that goes in filling documents in the evening shift is 31.84 minutes and out of these 31.84 minutes an average of 14.69 minutes go in filling up the CCFS while as 15.69 minutes go in filling up the extra documentation comprising of all necessary documents except CCFS.

TABLE – 4

NIGHT																	
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR. AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
TOTAL(6HRS)		57	17	0	0	20	96	0	5	80	2	8	0	60	15	0	360
TOTAL(6HRS)		49	16	0	0	21	83	5	6	85	5	3	10	45	12	20	360
TOTAL(6HRS)		50	18	0	0	17	95	7	3	61	6	5	12	41	17	28	360
TOTAL(6HRS)		51	16	0	0	18	85	2	5	71	6	8	11	45	15	27	360
AVERAGE TIME /STAFF/SHIFT		51.75	16.75	0	0	19	89.75	3.5	4.75	74.25	4.75	6	8.25	47.75	14.75	18.75	
		68.5				117				85			56		33.5		
		207	67	0	0	76	359	14	19	297	19	24	33	191	59	75	1440
TOTAL TIME IN MINS.		274				468				340			224		134		1440
		14.38%	4.65%	0.00%	0.00%	5.28%	24.93%	0.97%	1.32%	20.63%	1.32%	1.67%	2.29%	13.26%	4.10%	5.21%	100.00%
		19.03%				32.50%				23.61%			15.56%		9.31%		100.00%
TOTAL(6HRS)		13	23	0	0	11	103	35	15	30	25	10	0	20	60	15	360
TOTAL(6HRS)		12	25	0	0	8.5	95.5	32	20	35	30	11	3	15	56	17	360
TOTAL(6HRS)		14	21	0	0	9	99	30	18	32	26	13	3	21	51	23	360
TOTAL(6HRS)		15	22	0	0	10	97	36	16	40	28	9	4	17	45	21	360
AVERAGE TIME /STAFF/SHIFT		13.5	22.75	0	0	9.625	98.625	33.25	17.25	34.25	27.25	10.75	2.5	18.25	53	19	
		36.25				158.75				72.25			20.75		72		
		54	91	0	0	38.5	394.5	133	69	137	109	43	10	73	212	76	1440
TOTAL TIME IN MINS.		145				635				289			83		288		1440
		3.75%	6.32%	0.00%	0.00%	2.67%	27.40%	9.24%	4.79%	9.51%	7.57%	2.99%	0.69%	5.07%	14.72%	5.28%	100.00%
		10.07%				44.10%				20.07%			5.76%		20.00%		100.00%

- **Table IV** indicates that out of 6 Hours the average time that goes in filling documents in the night shift (first half) is 68.5 minutes and out of these 68.5 minutes an average of 51.75 minutes go in filling up the CCFS while as 16.75 minutes go in filling up the extra documentation comprising of all necessary documents except CCFS.
- Out of the next 6 Hours (second half) of night shift an average of 36.25 minutes go in filling up the documents, an average of 13.5 minutes go in filling up the CCFS while as 22.75 minutes go in filling up the extra documentation comprising of all necessary documents except CCFS.

ANALYSIS

FIG-I

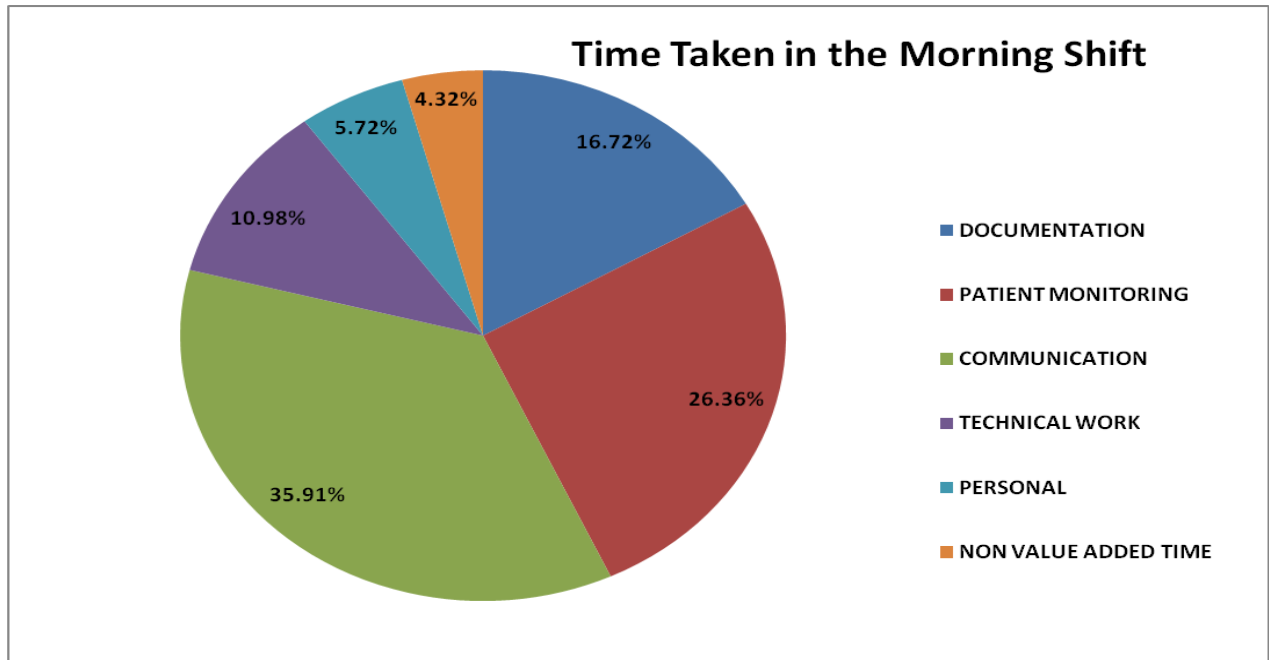
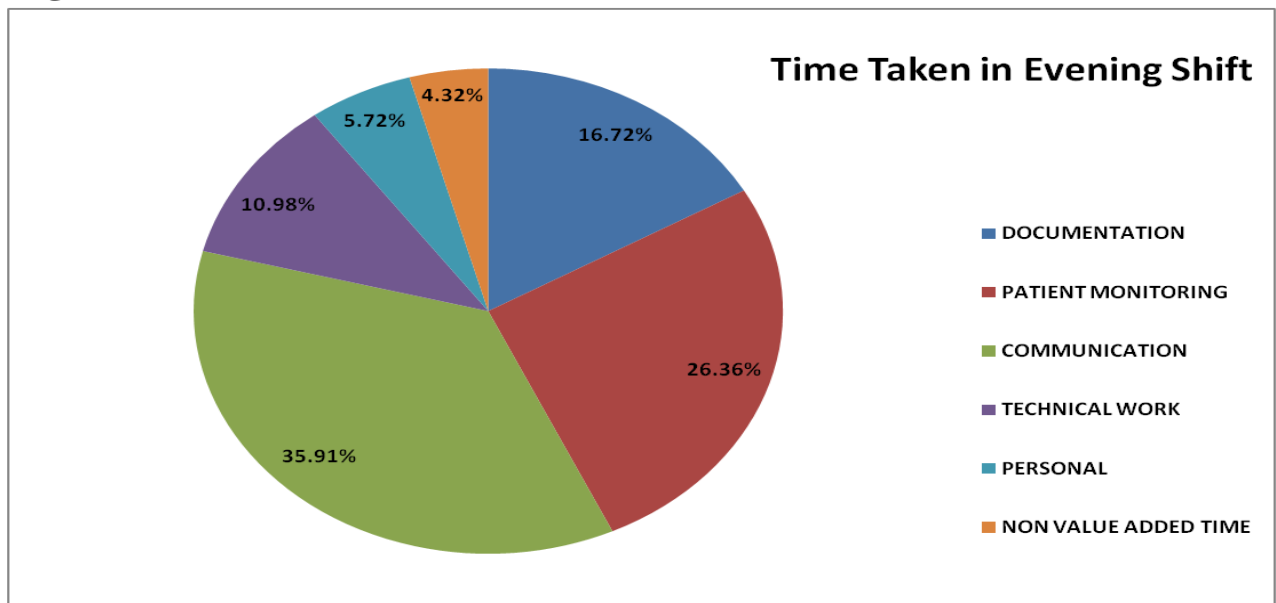


FIG-II



- **FIG I and II** represents that 16.72% of the total time of Morning shift while as 8.85% of the total time of the Evening shift go in documentation. Also the non value added time accounts for about 4.32% of the total morning time while as 6% of the evening time.

FIG-III

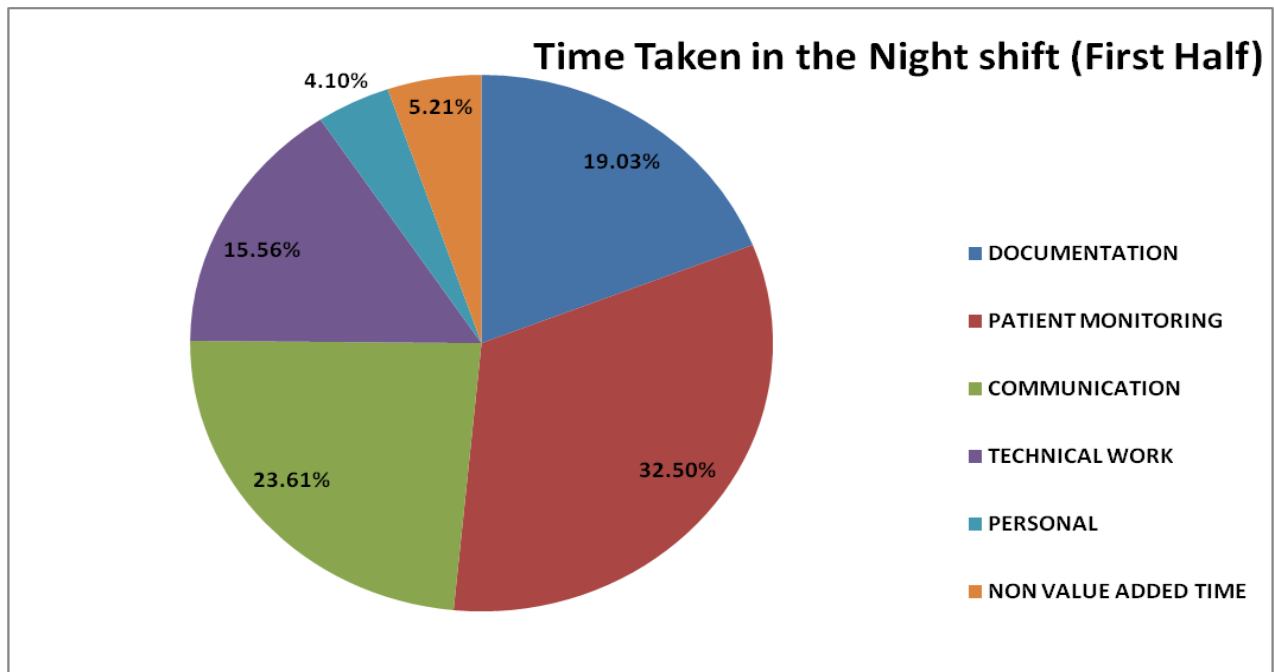
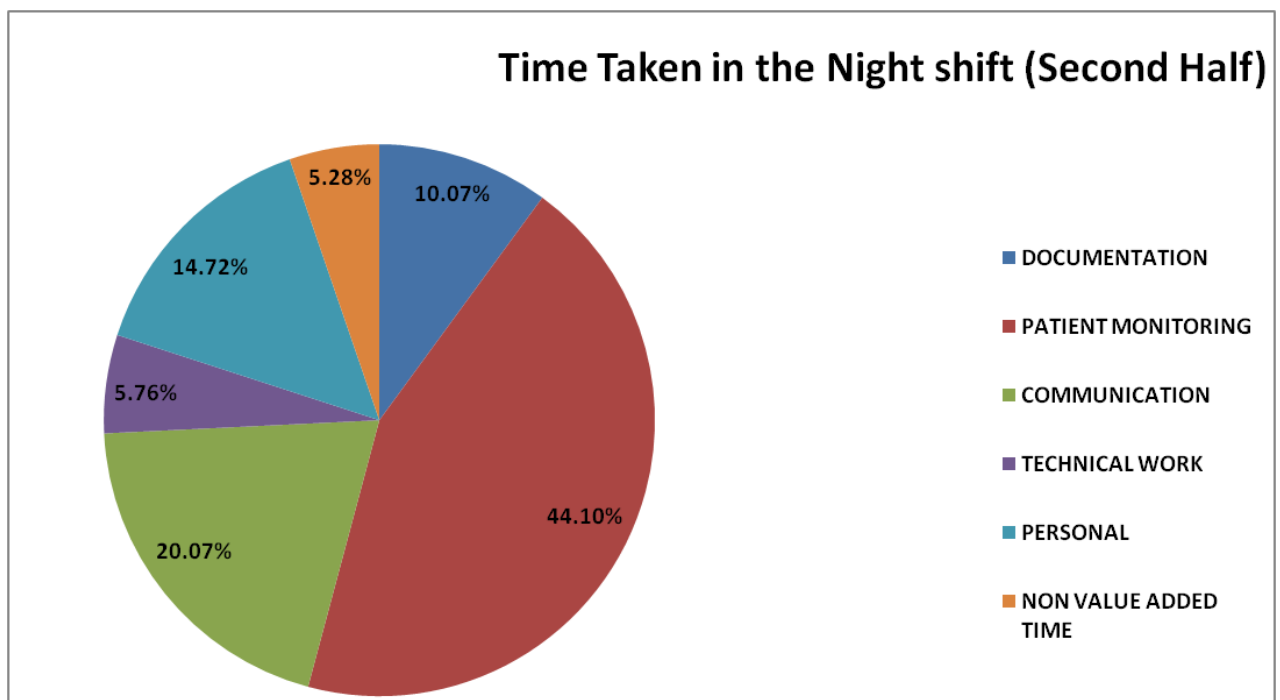


FIG-IV



- **FIG III and IV** shows that in the first half of night shift 19.03% of the time goes in documentation (14.38% of which goes in filling CCFS) and non value added time is 5.21%. 10.01%(3.75% of which goes in filling CCFS) time of the second half of night shift goes in documentation while as 5.28% is the non value added time.

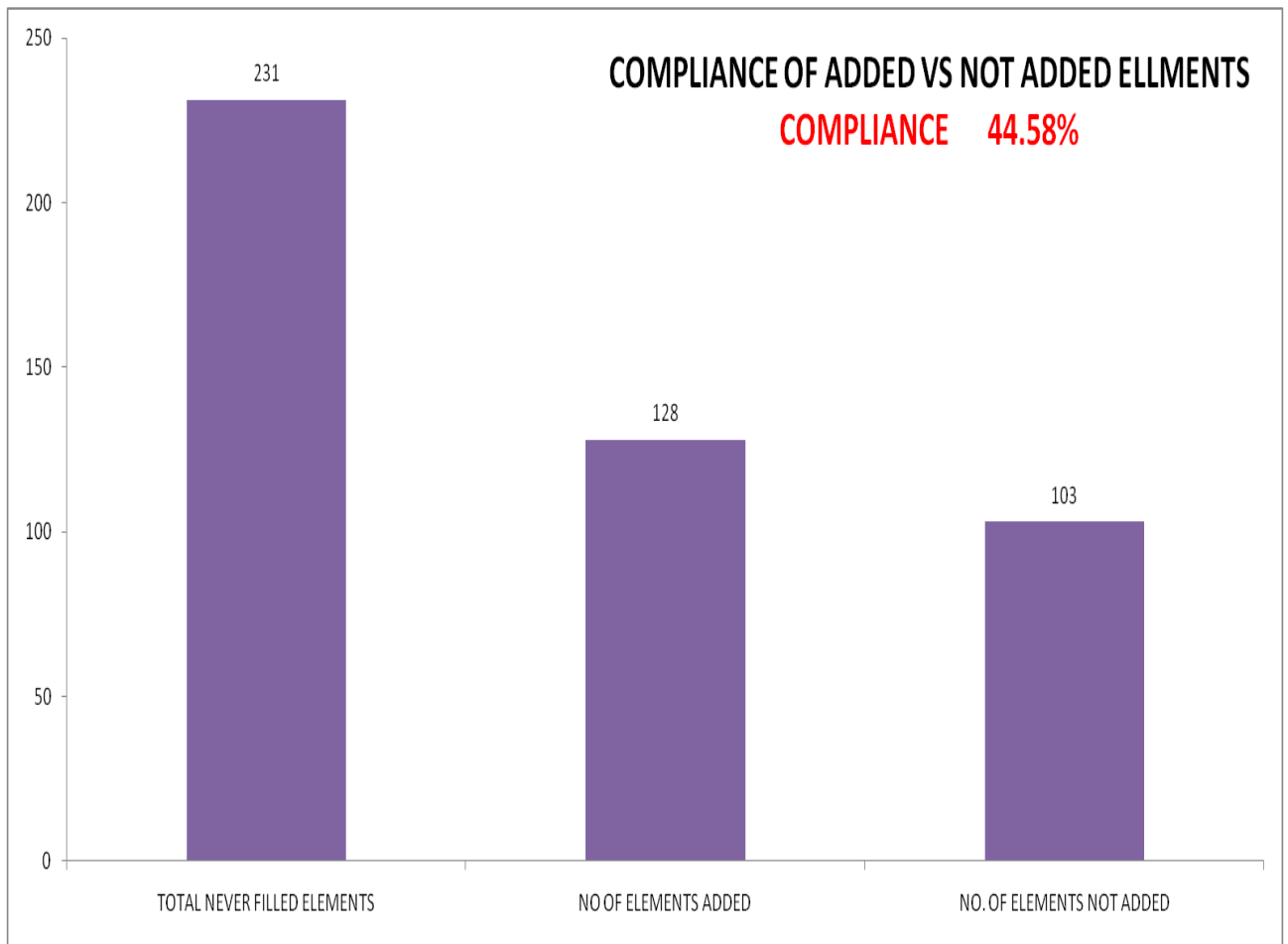
ELEMENT STUDY

Below are the elements that have never been filled and those that are irrelevantly filled. 100% shows that these elements have never been filled thereby meaning 100% empty while 60% means the elements have been filled in only 60% of the times in charts that we studied and likewise.

MICU I & II, CCU, HDU						SICU I & II				SICU III & IV				NG & SW			
ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%	ELE. No.	%
8H	100.00%	3D	95.00%	18B	55.00%	4A	100.00%	35G	100.00%	8F	100.00%	31K	80.00%	1N	100.00%	31A	80.00%
8I	100.00%	3F	95.00%	18C	55.00%	5A	100.00%	35H	100.00%	15A	100.00%	31L	80.00%	4B	100.00%	31B	80.00%
8J	100.00%	4C	95.00%	18H	55.00%	6A	100.00%	35I	100.00%	15B	100.00%	31N	80.00%	4C	100.00%	31C	80.00%
8K	100.00%	4D	95.00%	18I	55.00%	7A	100.00%			15C	100.00%	31O	80.00%	4D	100.00%	31E	80.00%
8L	100.00%	9B	95.00%	18J	55.00%	8A	100.00%			15D	100.00%	31Q	80.00%	7B	100.00%	31F	80.00%
9E	100.00%	9D	95.00%	18A	50.00%	9A	100.00%			16A	100.00%	31R	80.00%	11A	100.00%	31G	80.00%
9G	100.00%	12C	95.00%	18D	50.00%	9B	100.00%			16D	100.00%	31A	70.00%	11B	100.00%	31H	80.00%
9H	100.00%	12J	95.00%	18E	50.00%	9C	100.00%			26B	100.00%	31B	70.00%	11C	100.00%	31I	80.00%
9I	100.00%	12K	95.00%	18K	50.00%	9D	100.00%			26C	100.00%	31C	70.00%	11D	100.00%	31K	80.00%
9J	100.00%	13F	95.00%	18M	50.00%	9E	100.00%			26D	100.00%	31D	70.00%	11E	100.00%	31L	80.00%
10A	100.00%	13G	95.00%	18O	50.00%	9F	100.00%			28A	100.00%	31E	70.00%	11F	100.00%	31D	60.00%
10B	100.00%	1H	90.00%	18Q	50.00%	9G	100.00%			29A	100.00%	31F	70.00%	11G	100.00%	31J	60.00%
10D	100.00%	1I	90.00%	18F	45.00%	9H	100.00%			11K	90.00%	31G	70.00%	14A	100.00%	31M	60.00%
10E	100.00%	3E	90.00%	18G	45.00%	28J	100.00%			17A	90.00%	31H	70.00%	15B	100.00%	31N	60.00%
12B	100.00%	6A	90.00%	18L	45.00%	28K	100.00%			26E	90.00%	31I	70.00%	15C	100.00%	31O	60.00%
12D	100.00%	12F	90.00%	18N	45.00%	28L	100.00%			26F	90.00%	31J	70.00%	15D	100.00%	31P	60.00%
12L	100.00%	13I	90.00%	18P	45.00%	28M	100.00%			1M	80.00%	31M	70.00%	16A	100.00%	31Q	60.00%
13A	100.00%	13J	90.00%			29A	100.00%			1N	80.00%	31P	70.00%	17A	100.00%	31R	60.00%
13B	100.00%	17B	90.00%			29B	100.00%			4C	80.00%	31S	70.00%	19B	100.00%	31S	60.00%
13E	100.00%	1B	85.00%			29C	100.00%			11A	80.00%	31T	60.00%	19C	100.00%	31T	60.00%
17C	100.00%	1C	85.00%			29D	100.00%			11B	80.00%			19D	100.00%		
17D	100.00%	1F	85.00%			36D	100.00%			1F	70.00%			19E	100.00%		
17E	100.00%	3B	85.00%			36E	100.00%			1I	70.00%			19F	100.00%		
17F	100.00%	3C	85.00%			36F	100.00%			4B	70.00%			26B	100.00%		
17I	100.00%	1A	80.00%			37E	100.00%			4D	70.00%			26C	100.00%		
19A	100.00%	1G	80.00%			37F	100.00%			8B	70.00%			26D	100.00%		
19B	100.00%	4B	80.00%			37G	100.00%			8E	70.00%			26E	100.00%		
19C	100.00%	17G	80.00%			37H	100.00%			11D	70.00%			26F	100.00%		
19D	100.00%	2B	75.00%			30J	60.00%			11H	70.00%			26G	100.00%		
19E	100.00%	4A	75.00%							11J	70.00%			28A	100.00%		
19F	100.00%	12H	75.00%							12A	70.00%			29A	100.00%		
19G	100.00%	12I	75.00%							19B	70.00%			1I	80.00%		
22A	100.00%	2C	70.00%							26G	70.00%			1J	80.00%		
23A	100.00%	2D	70.00%							1K	60.00%			1K	80.00%		
		12E	70.00%							4A	60.00%			1M	80.00%		
										8G	60.00%			2G	80.00%		
										8H	60.00%			2H	80.00%		
										8J	60.00%			2I	80.00%		
										11E	60.00%			2J	80.00%		
										11F	60.00%			11H	80.00%		
										18A	60.00%			15A	80.00%		
										19D	60.00%			16D	80.00%		
										19E	60.00%			18A	80.00%		
										19F	60.00%			30A	80.00%		
														1F	60.00%		
														4A	60.00%		
														16C	60.00%		
														19A	60.00%		
														20A	60.00%		

MICU, CCU, HDU		SICU I & II		SICU III & IV		NG & SW	
ELE.	ADD/NO ADD	ELE.	ADD/NO ADD	ELE.	ADD/NO ADD	ELE.	ADD/NO ADD
8h	added	4a	added	8f	added	1n	not added
8i	not added	5a	added	15a	not added	4b	added
8j	not added	6a	added	15b	added	4c	not added
8k	added	7a	added	15c	added	4d	not added
8l	added	8a	added	15d	added	7b	added
9e	not added	9a	not added	16a	not added	11a	added
9g	added	9b	not added	16d	added	11b	added
9h	added	9c	not added	26b	not added	11c	not added
9i	added	9d	not added	26c	not added	11d	added
9j	added	9e	not added	26d	added	11e	added
10a	added	9f	not added	28a	not added	11f	added
10b	added	9g	not added	29a	not added	11g	added
10d	added	9h	not added	11k	not added	14a	added
10e	added	28j	added	17a	added	15a	added
12b	not added	28k	added	26e	added	15b	added
12d	not added	28l	not added	26f	added	15c	added
12l	added	28m	not added	1m	not added	15d	added
13a	not added	29a	added	1n	not added	16a	not added
13b	added	29b	added	4c	not added	17a	not added
13e	not added	29c	added	11a	not added	19b	added
17c	not added	29d	added	11b	not added	19c	added
17d	added	36d	not added	1f	added	19d	added
17e	added	36e	not added	1i	not added	19e	not added
17f	added	36f	not added	4b	added	19f	not added
17i	not added	37e	added	4d	not added	26b	not added
19a	not added	37f	not added	8b	added	26c	not added
19b	not added	37g	not added	8e	added	26d	added
19c	not added	37h	added	11d	not added	26e	added
19d	not added	30j	added	11h	not added	26f	added
19e	not added	35g	not added	11j	not added	26g	not added
19f	not added	35h	added	12a	added	28a	not added
19g	not added	35i	added	19b	added	29a	not added
22a	not added			26g	added	1i	not added
23a	not added			1k	not added	1j	added
3d	added			4a	added	1k	not added
3f	added			8g	added	1m	not added
4c	not added			8h	added	2g	added
4d	added			8j	added	2h	added
9b	added			11e	not added	2i	added
9d	added			11f	not added	2j	added
12c	not added			18a	not added	11h	added
12j	not added			19d	added	15a	added

MICU, CCU, HDU		SICU I & II		SICU III & IV		NG & SW	
ELE.	ADD/NO ADD	ELE.	ADD/NO ADD	ELE.	ADD/NO ADD	ELE.	ADD/NO ADD
12k	not added			19e	added	16d	added
13f	added			19f	added	18a	not added
13g	not added					30a	not added
1h	not added					1f	added
1i	not added					4a	added
3e	added					16c	added
6a	not added					19a	added
12f	not added					20a	added
13i	not added					31a	added
13j	not added					31b	added
17b	not added					31c	not added
1b	added					31e	added
1c	added					31f	added
1f	added					31g	added
3b	added					31h	added
3c	added					31i	added
1a	added					31k	not added
1g	added					31l	added
4b	added					31d	added
17g	not added					31j	added
2b	not added					31m	not added
4a	added					31n	added
12h	not added					31o	added
12i	not added					31p	not added
2c	added					31q	not added
2d	added					31r	not added
12e	not added					31s	added
18b	added					31t	not added
18c	not added						
18h	added						
18i	added						
18j	added						
18a	added						
18d	added						
18e	added						
18k	not added						
18m	not added						
18o	not added						
18q	not added						
18f	added						
18g	added						
18n	added						
18p	not added						



IDENTIFICATION OF THE ROUTE CAUSE

- 15% of the time of nursing staff goes in documentation procedure.
- Non value added time accounts for about 4.04%.
- Some elements of the icu charts go unfilled , some are irrelevantly filled.
- Some columns in icu charts are repeated.
- Some of them are not according to requirement or their formats are not relevant.
- Some columns are missing which are essential eg reference doctor column, sliding scale.
- Some extra documents are being unnecessarily used.

POTENTIAL SOLUTIONS

- Modification of all the icu charts by removing unnecessary columns and adding necessary columns.
- Try to reduce documentation time.
- Try to increase patient monitoring or bed side time.
- Adding some useful columns in the icu charts itself so that some extra documents can be reduced. It will also be cost effective.
- Cost can also be reduced by making a unique critical care flow sheet (only one) used in all the icus and adding necessary columns to it which would reduce some extra documents.

BEST SOLUTION –

- Best solution would be making only one icu chart adding all necessary components of all the icus to it and then making it universal. Asking for inputs and feedback and putting it into force

CHARTS (CCFS)	COST/CHARTS	QUANTITY/MONTH	TOTAL COST FOR ONE MONTH
CCFS FOR MICU 1&2, CCU,HDU	5.54	1900	10526
CCFS FOR SICU 1 &2 (CTVS)	5.54	520	2880.8
CCFS FOR SICU 3 & 4	5.54	600	3324
CCFS FOR NEURO GEN. WARD	5.54	650	3601
TOTAL CCFS COST			20331.8
FORMS	COST/100 FORMS	QUANTITY/MONTH	TOTAL COST FOR ONE MONTH
NURSING CARE PLAN	61.11	30	1833.3
SHIFT HANDOVER CHECK LIST	46	18	828
PRESSURE SORE CARE SHEET	49.59	13	644.67
PHYSICAL RESTRAINT SHEET	46	7	322
TOTAL FORMS COST			3627.97
		OVERALL COST	23959.77
UNIQUE CCFS	5	3670	18350

SAVE AMOUNT **23959.77-18350** **5609.77 PER MONTH**

% SAVING **23.41%**

CHARTS WASTE/MONTH	COST	TOTAL COST
5	5.54	27.7
5	5.54	27.7
5	5.54	27.7
5	5.54	27.7
		110.8
FORMS	AVG COST	
ONE PAD(100 FORMS)	50.56	50.56
SAVING		161.36

SAVING WITH WASTE MANAGEMENT **5609.77+161.36** **5771.13**

NOW % SAVING **24.09%**

AVERAGE TIME TAKEN IN PER SHIFT TO FILL EXTRA DOCUMENT (EXCEPT CCFS) - 25 MIN

AVERAGE TIME TAKEN IN PER SHIFT TO FILL FOUR DOCUMENT - 10 MIN

REMOVE THESE DOCUMENT AND ADD IT IN CCFS SO WE SAVE PER SHIFT - 8 MIN

SO IN 24 HRS WE SAVE - 32 MIN

THESE 32 MIN CAN BE ADDED IN BED SIDE CARE

INCASE OF EXPERIENCED STAFF	TIME
AVERAGE TIME TO FILL CCFS/SHIFT	22.6 MIN
AVERAGE TIME TO FILL OTHER DOCS./SHIFT	25 MIN
TOTAL TIME/SHIFT	47.6MIN
TIME THAT CAN BE SAVED AFTER IMPLEMENTATION OF NEW CHART/ SHIFT	4.6MIN
TIME THAT CAN BE SAVED ONCE THE DOCUMENTS ARE REMOVED/ SHIFT	8 MIN
TOTAL TIME SAVED/SHIFT	12.6MIN
NET TIME/SHIFT FOR DOCUMENTATION	35
% OF TIME SAVED/SHIFT FROM DOCUMENTATION	26.47%
CURRENT AVERAGE BEDSIDE TIME/SHIFT	99.15MIN
INCREASE BEDSIDE CARE TIME VIA REDUCING THE DOCUMENTATION	111.75
% INCREASE IN BED SIDE CARE TIME	13%
INCASE OF NEW STAFF	TIME
TIME TAKEN TO FILL CCFS BY NEW STAFF	40 MIN
TIME TAKEN TO FILL OTHER DOCS.BY NEW STAFF	50 MIN
TOTAL TIME TAKEN BY NEW STAFF	90 MIN
TIME THAT CAN BE SAVED AFTER IMPLEMENTATION OF NEW CHART/ SHIFT	10 MIN
TIME THAT CAN BE SAVED ONCE THE DOCUMENTS ARE REMOVED/ SHIFT	20 MIN
TOTAL TIME SAVED/SHIFT	30 MIN
NET TIME/SHIFT FOR DOCUMENTATION	60
% OF TIME SAVED/SHIFT FROM DOCUMENTATION	33%
CURRENT AVERAGE BEDSIDE TIME/SHIFT	99.15MIN
INCREASE BEDSIDE CARE TIME VIA REDUCING THE DOCUMENTATION	129.15
% INCREASE IN BED SIDE CARE TIME	30%

LIMITATION

- The study includes nurses having an experience of 1-5 years and excludes nurses with an experience of less than 1 year. So the time taken by them in filling documentation could not be recorded.
- The study included nursing staff of only highly occupied ICU's as the sample.
- Limited sample size
- The study design required identification of all activities of a nursing shift and grouping these activities into cogent, useful, and appropriate categories. The rationale for these activities and groupings could be sensibly debated.
- The challenge study nurses faced in continuing their jobs without any interference from the time and motion study might have led to problems in the data collected.

CONCLUSION

Nurses are the primary hospital caregivers, and the efficient use of their time and energy is critical to the future of all hospitals. Our study evaluated the time that nurses spent in different activities. The results demonstrate that nurses devote large proportion of their time to documentation, patient monitoring and communication. Changes in few of their activities or the changes in the documents could benefit nursing efficiency and the high quality delivery of care.

RECOMMENDATIONS

A study on various documents used in ICUs can be helpful in finding out how to alter the documents and increase nursing efficiency. Further,

- 1) Modification of all the ICU charts by removing unnecessary columns and adding necessary columns in order to reduce documentation time
- 2) Removing some extra documents and merging the same in CCFS to increase patient monitoring or bed side time.
- 3) Non value added time could be worked upon and reducing it would add in the bed side care.

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ANNEXURE

NAME -		GENDER -		EMP. ID -		ICU -		SHIFT -								
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
8:00	8:05															
8:05	8:10															
8:10	8:15															
8:15	8:20															
8:20	8:25															
8:25	8:30															
8:30	8:35															
8:35	8:40															
8:40	8:45															
8:45	8:50															
8:50	8:55															
8:55	9:00															
9:00	9:05															
9:05	9:10															
9:10	9:15															
9:15	9:20															
9:20	9:25															
9:25	9:30															
9:30	9:35															
9:35	9:40															
9:40	9:45															
9:45	9:50															
9:50	9:55															
9:55	10:00															
10:00	10:05															
10:05	10:10															
10:10	10:15															
10:15	10:20															
10:20	10:25															
10:25	10:30															
10:30	10:35															
10:35	10:40															
10:40	10:45															
10:45	10:50															
10:50	10:55															
10:55	11:00															
TOTAL(3HRS)																

TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR. AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
11:00	11:05															
11:05	11:10															
11:10	11:15															
11:15	11:20															
11:20	11:25															
11:25	11:30															
11:30	11:35															
11:35	11:40															
11:40	11:45															
11:45	11:50															
11:50	11:55															
11:55	12:00															
12:00	12:05															
12:05	12:10															
12:10	12:15															
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12:20	12:25															
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13:25	13:30															
13:30	13:35															
13:35	13:40															
13:40	13:45															
13:45	13:50															
13:50	13:55															
13:55	14:00															
TOTAL(3HRS)																
TOTAL(6HRS)																

NAME -		GENDER -		EMP. ID -		ICU -		SHIFT -									
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDL. PRE. & ADMINISTRAT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
14:00	14:05																
14:05	14:10																
14:10	14:15																
14:15	14:20																
14:20	14:25																
14:25	14:30																
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16:10	16:15																
16:15	16:20																
16:20	16:25																
16:25	16:30																
16:30	16:35																
16:35	16:40																
16:40	16:45																
16:45	16:50																
16:50	16:55																
16:55	17:00																
TOTAL(3HRS)																	

TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MED. PRE. & ADMINISTRATION	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
17:00	17:05															
17:05	17:10															
17:10	17:15															
17:15	17:20															
17:20	17:25															
17:25	17:30															
17:30	17:35															
17:35	17:40															
17:40	17:45															
17:45	17:50															
17:50	17:55															
17:55	18:00															
18:00	18:05															
18:05	18:10															
18:10	18:15															
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18:20	18:25															
18:25	18:30															
18:30	18:35															
18:35	18:40															
18:40	18:45															
18:45	18:50															
18:50	18:55															
18:55	19:00															
19:00	19:05															
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19:25	19:30															
19:30	19:35															
19:35	19:40															
19:40	19:45															
19:45	19:50															
19:50	19:55															
19:55	20:00															
TOTAL(3HRS)																
TOTAL(6HRS)																

NAME -		GENDER -		EMP. ID -		ICU -		SHIFT -									
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS		
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR. AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME	
20:00	20:05																
20:05	20:10																
20:10	20:15																
20:15	20:20																
20:20	20:25																
20:25	20:30																
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20:40	20:45																
20:45	20:50																
20:50	20:55																
20:55	21:00																
21:00	21:05																
21:05	21:10																
21:10	21:15																
21:15	21:20																
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21:35	21:40																
21:40	21:45																
21:45	21:50																
21:50	21:55																
21:55	22:00																
22:00	22:05																
22:05	22:10																
22:10	22:15																
22:15	22:20																
22:20	22:25																
22:25	22:30																
22:30	22:35																
22:35	22:40																
22:40	22:45																
22:45	22:50																
22:50	22:55																
22:55	23:00																
TOTAL(3HRS)																	

TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTR. AT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
23:00	23:05															
23:05	23:10															
23:10	23:15															
23:15	23:20															
23:20	23:25															
23:25	23:30															
23:30	23:35															
23:35	23:40															
23:40	23:45															
23:45	23:50															
23:50	23:55															
23:55	0:00															
0:00	0:05															
0:05	0:10															
0:10	0:15															
0:15	0:20															
0:20	0:25															
0:25	0:30															
0:30	0:35															
0:35	0:40															
0:40	0:45															
0:45	0:50															
0:50	0:55															
0:55	1:00															
1:00	1:05															
1:05	1:10															
1:10	1:15															
1:15	1:20															
1:20	1:25															
1:25	1:30															
1:30	1:35															
1:35	1:40															
1:40	1:45															
1:45	1:50															
1:50	1:55															
1:55	2:00															
TOTAL(3HRS)																
TOTAL(6HRS)																

TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTRAT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
2:00	2:05															
2:05	2:10															
2:10	2:15															
2:15	2:20															
2:20	2:25															
2:25	2:30															
2:30	2:35															
2:35	2:40															
2:40	2:45															
2:45	2:50															
2:50	2:55															
2:55	3:00															
3:00	3:05															
3:05	3:10															
3:10	3:15															
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3:50	3:55															
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4:00	4:05															
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4:10	4:15															
4:15	4:20															
4:20	4:25															
4:25	4:30															
4:30	4:35															
4:35	4:40															
4:40	4:45															
4:45	4:50															
4:50	4:55															
4:55	5:00															
TOTAL(3HRS)																

		CCFS	EXCEPT-CCFS	ADMISSION	DISCHARGE	VITAL SIGNS	MEDI. PRE. & ADMINISTRAT.	HYGIENE	SAMPLING & TESTING	WITH PATIENT & FAMILY	WITH STAFF	WITH DOCTOR	COMPUTER	ICU DEVICE	PERSONAL	NON VALUE ADDED TIME
TIME INTERVAL		DOCUMENTATION				PATIENT MONITORING				COMMUNICATION			TECHNICAL WORK		MISCELLANEOUS	
5:00	5:05															
5:05	5:10															
5:10	5:15															
5:15	5:20															
5:20	5:25															
5:25	5:30															
5:30	5:35															
5:35	5:40															
5:40	5:45															
5:45	5:50															
5:50	5:55															
5:55	6:00															
6:00	6:05															
6:05	6:10															
6:10	6:15															
6:15	6:20															
6:20	6:25															
6:25	6:30															
6:30	6:35															
6:35	6:40															
6:40	6:45															
6:45	6:50															
6:50	6:55															
6:55	7:00															
7:00	7:05															
7:05	7:10															
7:10	7:15															
7:15	7:20															
7:20	7:25															
7:25	7:30															
7:30	7:35															
7:35	7:40															
7:40	7:45															
7:45	7:50															
7:50	7:55															
7:55	8:00															
TOTAL(3HRS)																
TOTAL(12HRS)																

MICU I & II, CCU, HDU		SICU I & II		SICU III & IV		NG&SW	
ELE. NO.	NAME	ELE. NO.	NAME	ELE. NO.	NAME	ELE. NO.	NAME
8	VITAL SIGNS	4A	HEMODYNAMICS DOCTOR'S NOTES	8	VENTILATION AND ABG	1	PATIENT INFORMATION
8H	CVP	5A	RESPIRATORY SYSTEM DOCTOR'S NOTES	8F	AIRWAY PRESSURE	1N	ANAESTHETIST
8I	PA	6A	NERVOUS SYSTEM DOCTOR'S NOTES	15	DRAINAGE	4	BACTERIOLOGY AND VIROLOGY
8J	WEDGE	7A	RENAL SYSTEM DOCTOR'S NOTES	15A	SURGICAL SITE	4B	BLOOD C/S
8K	IABP	8A	OTHERS DOCTOR'S NOTES	15B	PLEURAL	4C	ET C/S
8L	AUG PRESSURE	9A	IV LINES	15C	HOURLY	4D	OTHERS C/S
9	VENTILATION	9B	SITE	15D	TOTAL	7	NEUROLOGICAL DEPARTMENT
9E	MAP	9C	SIZE	16	OTHERS	7B	INSULIN
9G	A/V _p H	9D	DATE/TIME	16A	GASTRIC ABG	11	INTRAVENOUS
9H	PCO ₂ /TCO ₂	9E	IV LINES	16D	TOTAL OUTPUT	11A	CRYSTALLOIDS
9I	PO ₂ /SAT	9F	SITE	26	INVASIVE LINES	11B	BLOOD C/S
9J	HCO ₃ /SBE	9G	SIZE	26B	CANNULA SIZE	11C	BLANK
10	INVESTIGATION	9H	DATE/TIME	26C	SWANGANZ	11D	DOPA
10A	Na ⁺	28	REPIRATORY PARAMETERS	26D	IABP	11E	DOBU
10B	K ⁺	28J	PCO2	28	INITIAL INFUSION RATE	11F	ADR
10D	Hb	28K	PO2	28A	INITIAL INFUSION RATE	11G	N.ADR.
10E	Hct	28L	SaO2	29A	INITIAL DRUGS CONC.	14A	TOTAL
12	INTAKE	28M	HCO3	11	INTRAVENOUS	15	DRAINAGE
12B	DPM	29	LAB	11K	BLANK	15B	PLEURAL
12D	EPI	29A	Hb/Hct	17A	BALANCE	15C	HOURLY
12L	BLANK COLUMN	29B	Ca ⁺⁺ /Mg ⁺⁺	26	INVASIVE LINES	15D	TOTAL
13	OUTPUT	29C	Na	26E	PACEMAKER	16	OTHERS
13A	OUTPUT-TOTAL-CUM	29D	K ⁺	26F	ETT:ORAL/NASAL	16A	GASTRIC AGP
13B	OUTPUT-TOTAL-HOURLY	36	NURSING CARE	1	PATIENT INFORMATION	17A	BALANCE
13E	OUTPUT-URINE-RT	36D	ELEMENTS (2)	1M	BLOOD	19	RESPIRATORY EQUIPMENTS
17	INVASIVE LINES	36E	FREQUENCY (2)	1N	ANAESTHESIST	19B	VENTILATION TYPE
17C	SWANGANZ	36F	TIME (2)	4	BACTERIOLOGY & VIROLOGY	19C	MODE
17D	IABP	37	NURSING CARE	4C	ET C/S	19D	ETT/TRACH SIZE
17E	PACEMAKER	37E	DEVICE CHANGED ON	11	INTRAVENOUS	19E	PRESSURE
17F	ETT-ORAL/NASAL	37F	INITIALS WITH ID	11A	CRYSTALLOIDS	19F	ETT EXIT MARKINGS
17I	NSG-CARE LEGENDS	37G	DEVICE REMOVED ON	11B	BLOOD	26	INVASIVE LINES
19	LAB INVESTIGATION	37H	INITIALS WITH ID	1	PATIENT INFORMATION	26B	CANNULA SIZE
19A	TIME	30	INTAKE	1F	OPERATION	26C	SWANGANZ
19B	Hb	30J	COLLOID	1I	HEIGHT	26D	IABP
19C	TLC	35	NURSING ASSESSMENT	4	BACTERIOLOGY & VIROLOGY	26E	PACE MAKER
19D	CALCIUM	35G	BACK CARE	4B	BLOOD C/S	26F	ETT: ORAL/NASAL
19E	UREA	35H	POSITION CHANGE	4D	OTHERS C/S	26G	NGT
19F	CREATININE	35I	PRESSURE ULCER DRESSING	8	VENTILATION AND ABG	28A	INITIAL INFUSION RATE
19G	OTHERS			8B	TV	29A	INITIAL DRUGS CONC.
22	X-RAY INVESTIGATIONS			8E	PEEP	1	PATIENT INFORMATION
22A	X-RAY INVESTIGATIONS			11	INTRAVENOUS	1I	HEIGHT
23	PHYSIOTHERAPY			11D	DOPA	1J	WEIGHT
23A	PHYSIOTHERAPY			11H	NTG	1K	BSA
3	RESPIRATORY EQUIPMENT			11J	BLANK	1M	BLOOD C/S
3D	CUFF			12A	ORAL	2	MEDICATION COURSE
3F	ETT PRESSURE			19	RESPIRATORY EQUIPMENT	2G	STAT DRUGS
4	BACTERIOLOGY AND VIROLOGY			19B	VENTILAION TYPE	2H	DOSE
4C	CVP TIP			26	INVASIVE LINES	2I	CRD. BY
4D	BLOOD			26G	NGT	2J	TIME
9	VENTILATION			1	PATIENT INFORMATION	11	INTRAVENOUS
9B	TV/RATE			1K	BSA	11H	NTG
9D	PIP/PEEP			4	BACTERIOLOGY & VIROLOGY	15	DRAINAGE
12	INTAKE			4A	URINE C/S	15A	SURGICAL SITE
12C	DOBU			8	VENTILATION AND ABG	16	OTHERS
12J	BLANK COLUMN			8G	PH	16D	TOTAL OUTPUT
12K	BLANK COLUMN			8H	PO2	18A	REMARKS
13	OUTPUT			8J	HCO3	30A	CHANGE IN RATE

13F	DRAINS-HOURLY			11	INTRAVENOUS	1	PATIENT INFORMATION
13G	DRAINS-CUM			11E	DOBU	1F	OPERATION
1	PATIENT INFORMATION			11F	ADR	4	BACTERIOLOGY AND VIROLOGY
1H	IPD NO.			18A	REMARKS	4A	URINE C/S
1I	DATE OF ADMISSION			19	RESPIRATORY EQUIPMENT	16	OTHERS
3	RESPIRATORY EQUIPMENT			19D	ETT/ TRACH SIZE	16C	TOTAL
3E	ETT/TRACH SIZE			19E	PRESSURE	19	RESPIRATORY EQUIPMENTS
6	SYRINGES,BOTTLE,CHANGE TIME			19F	ETT EXIT MARKINGS	19A	OXYGEN DELIVERY DEVICE
6A	SYRINGES,BOTTLE,CHANGE TIME					20A	INVESTIGATIONS
12	INTAKE					31	NURSING CARE
12F	NTG					31A	BED BATH
13	OUTPUT					31B	MOUTH CARE
13I	OUTPUT-OTHERS					31C	BACK CARE
13J	OUTPUT-OTHERS					31E	CATHETER CARE
17	INVASIVE LINES					31F	ET SUCTION
17B	CANNULA SIZE					31G	ET SECRETIONS
1	PATIENT INFORMATION					31H	IV SITE
1B	NAME					31I	SKIN CARE
1C	UHID					31K	EYE PATCHES
1F	AGE					31L	RESTRAINTS
3	RESPIRATORY EQUIPMENT					31D	POSITION CHANGE
3B	VENTILATION TYPE					31J	SIDE RAILS
3C	MODE					31M	PAIN SCALE
1	PATIENT INFORMATION					31N	INTERVENTION
1A	DATE					31O	PAIN EFFECTIVENESS
1G	SEX					31P	WAVE FORM
4	BACTERIOLOGY AND VIROLOGY					31Q	VISIT BY FAMILY
4B	URINE C/S					31R	PATIENT/FAMILY EDUCATION
17	INVASIVE LINES					31S	PRESSURE RELIEVING ADS
17G	NGT					31T	BLANK
2	PROFILE						
2B	PRECAUTIONS						
4	BACTERIOLOGY AND VIROLOGY						
4A	DATE						
12	INTAKE						
12H	BLANK COLUMN						
12I	BLANK COLUMN						
2	PROFILE						
2C	WEIGHT						
2D	DOS						
12	INTAKE						
12E	NOR EPI						
18	NURSING CARE						
18B	MOUTH CARE						
18C	BACK CARE						
18H	IV SITE						
18I	SKIN CARE						
18J	SIDE RAILS						
18A	BED BATH						
18D	POSITION CHANGE						
18E	CATHETER CARE						
18K	EYE PATCHES						
18M	PAIN SCALE						
18O	PAIN EFFECTIVENESS						
18Q	VISIT BY FAMILY						
18F	ET SUCTION						
18G	ET SECRETIONS						
18L	RESTAINTS						
18N	INTERVENTIONS						
18P	WAVE FORM						