A Retrospective Study to Audit Nursing Documentation of NICU Patients of Shri Vinoba Bhave Civil Hospital, Silvassa, Dadra and Nagar Haveli.

Mr. Amar Mulla[1], PhD Scholar, Assistant Professor, Shri Vinoba Bhave College of Nursing, Silvassa, DNH.

Mrs. Nevina Virmani[2], M. Sc. (N), Nursing Tutor, Shree Nootan Kelavani Mandal College of Nursing, Valsad, Gujarat.

Abstract: - The purpose of this study was to evaluate the nursing documentation through auditing with a view to prepare nursing documentation protocol.

Objectives of the study were to audit nursing documentation of NICU patients' bed side charts, to ascertain nursing documentation in relation to the variables like: duration of hospitalization, months of nursing documentation records and to prepare nursing documentation protocol.

The present study was conducted to audit nursing documentation of NICU patients' bed side charts. The area selected for the study was Medical Record Office of Shri Vinoba Bhave Civil hospital, Silvassa, DNH. Retrospective approach was used in the study. Sample were selected using random sampling technique, time spent to audit each NICU patients' bed side charts was of 15-20 min. Structured nursing documentation audit tool was used to collect required data. Reliability of the tool was 0.79. Descriptive and inferential statistics were employed to analyse the data. Bar diagrams and pie charts were used to depict the findings. Findings revealed that nursing documentation of NICU patients' bed side charts need improvement and protocol for nursing documentation need to be administered.

Keywords- Nursing documentation, Audit, Discharge, NICU patients' bed side charts, NICU patient, Protocol

I. INTRODUCTION

Documentation is professional responsibility of all health care practitioners. It addresses the client's needs, probabilities and limitations. It provides written evidence of the practitioner's accountability to the client, the institution, the profession and society. Nurses need adequate documentation to provide direction and guidance for sound record keeping practices and appropriate charting pattern. Writing about care is a primary activity of the discipline of nursing and, as such, documenting the care provided and the client's response is an important component of the nurse's role. It provides written evidence of the nurse's contribution to client care. Many legal decisions are still based on the percepts that "if it was not charted, it was not done.''

Research showed that shortcomings in maintenance of documents by nurses as errors including illegibility, incomplete entries, entry at inappropriate space and use of unstandardized abbreviations were found (**Chattopadhyay S, 2003)[7]. N**o perfect chart with complete nursing and physician documentation existed **(Bonace AL, 2000)[8].**

In Neonatal intensive Care Unit (NICU) of Shri Vinoba Bhave Civil Hospital, Silvassa, and the current method of nursing documentation has been in place for several years. There is lot of errors and lack of consistency recorded. It is possible to assume that where documentation is incomplete, this indicates that action have not been taken even though they may be mandatory.

PURPOSE OF THE STUDY

The purpose of this study was to evaluate the nursing documentation through auditing with a view to prepare nursing documentation protocol.

OBJECTIVES OF THE STUDY

- To audit nursing documentation of NICU patients' bed side charts.
- To ascertain nursing documentation in relation to the variables like: duration of hospitalization.
- To prepare nursing documentation protocol.

II. METHODOLOGY

RESEARCH APPROACH- In this study retrospective survey approach was used which was considered to be appropriate for the present study as it was aimed at audit nursing documentation of NICU patients' bed side charts of SVBCH, Silvassa, Dadra and Nagar Haveli.

RESEARCH DESIGN-True - For the present study, the non-experimental research design was utilized to audit nursing documentation of NICU patients.

The independent variable: Nursing documentation

The dependent variable: Nursing Audit

RESEARCH SETTING-The study was conducted in Shri Vinoba Bhave Civil Hospital, Dadra & Nagar Haveli.

POPULATION- The target population of the study was records of nursing documentation of discharged NICU patients of SVBCH, Silvassa, Dadra and Nagar Haveli.

SAMPLE & SAMPLE SIZE- Sample size was 100 discharged NICU patients' bed side charts.

SAMPLING TECHNIQUE- Random sampling technique (every 10th chart) was used to select sample. The serial numbers of the discharged NICU patients were collected from IHMS of last 4 months kept in medical record room. The serial number of discharged NICU patients was more than 1000. Every 10th chart was selected as a sample likewise 25 charts from each month were selected. Investigators wrote the selected unit numbers on paper. List of selected unit numbers had given to Medical Record Office to obtain NICU patients' bed side charts. Likewise, 25 NICU patients' bed side charts were selected from each 4 months.

DESCRIPTION OF TOOL:

A structured nursing documentation audit tool was developed to audit nursing documentation of NICU patients**.** Maximum score of nursing documentation audit tool was 56 in final study. The tool was divided into 2 parts,

Part – 1: Sample characteristics

This part consisted of duration of hospitalization, month of nursing documentation records

Part- 2: Nursing documentation audit tool

This part is a structured nursing documentation audit tool consists of 56 items on audit of nursing documentation of NICU patients' bed side charts.

Areas of the tool were:	**Items**
Clinical Graphic Record (Temperature, pulse/heart rate and respiration)	16
Vital signs chart	18
Intake output record	11
Treatment sheet	11

Scoring for each item:

With respect to the items assessed, investigator used the following scoring system:

- If nurse recorded nursing documentation of NICU patient ≥ 80% among all days of hospitalization, then that item was considered in YES category in nursing documentation audit tool and score given to it was 1.
- If nursing documentation of psychiatric patient was recorded < 80% among all days of hospitalization, then that item was considered in NO category and score given to it was 0.

Criterion measure

The criterion measure used in the study was as follows

Maximum score = 56

Minimum score = 0

Nursing documentation audit tool

Description	**Score**	**(%) Percentage**
Standards met	≥ 45	≥80%
Need improvement	< 45	<80%

III Result

The major findings of the study were based on 100 sample size of NICU patients' bed side charts of Shri Vinoba Bhave Civil Hospital, Silvassa, DNH. 25% of NICU patients' bed side charts fall in each month of December, January, February and March. Among 100 NICU patients' bed side charts 75% of the charts were having duration of hospitalization of 1-10 days whereas 25% of the charts were having 11-20 days of hospitalization. No charts were having >20 days of hospitalization.

According to objective 1: To audit nursing documentation of NICU patients' bed side charts

- 100% of charts were written ward, charted with blue/ black pen for charting were found on 100% of ward, document legible, number of post-operative days mentioned. Other items as time, number of hospitalization days, time, and weight of the baby recorded 97%, 9o%, 88% respectively. In more than half of the TPR graphic charts i.e. 63% MRD NO, 54% documents were legible and clear marking of temperature on TPR graph was entered.51% of clear marking of heart rate and respiration on TPR graph.47% date with month and year. 45% of total intake of 24 hours recorded, 42 % of number of stool output and 37% of urine output recorded.
- Other items as MRD NO, legible documentation, clear marking of temperature on TPR graph, clear marking of heart rate and respiration, date with month and year, total intake of 24 hours, number of stool output and urine output record need improvements.

- In vital signs chart items such as respiration recorded at regular interval, date with month and year, incubator/ warmer number, date of admission, SpO_2 recorded at regular interval, temperature recorded with unit, heart rate recorded with unit and respiration recorded with unit need improvement.
- Half of the items of intake output record i.e. vomit and aspiration, type, amount, time of IV fluid, time of oral intake, type of oral intake, time of urine output met standards of nursing documentation.
- Nursing documentation most of the items of intake output chart met standards of nursing documentation whereas the items such as total no of stool passed in 24 hours, amount of urine output in ml, total of intake in ml, total output of 24 hr. in ml of NICU patients' need improvement.
- Majority of items of treatment sheet met standards of nursing documentation. Whereas mentioning antibiotic day, signature of the staff, route of drug administration need more attention

According to objective no. 2: To ascertain nursing documentation in relation to the variables like: duration of hospitalization, months of nursing documentation records.

- Mean nursing documentation score was highest (42.56) in month December as compared to mean nursing documentation score (42.32) of month January, (41.6) of month March, and (39.48) of month February. The tabled F value for (3, 96) degree of freedom was 3.15 at 0.05 level and calculated value of F between and within the group was 3.435, which was more than the tabled value. Therefore, there was significant difference in audit score of nursing documentation in respect to months of nursing documentation
- Mean audit score was higher (42.64) among duration of hospitalization of 11-20 days followed by duration of hospitalization 1-10 days (41.1). The table Z value was 0.673 at 0.05 level and calculated value of Z was 0.42, which was less than the tabled value. Therefore, there was no significant difference in audit score of nursing documentation in respect to duration of hospitalization.

According to objective no. 3: To prepare nursing documentation protocol.

- The nursing documentation deficit areas in NICU patients' bed side charts. The nursing documentation of vital signs sheet had the lowest mean percentage of 68.33% (Rank I) among other NICU patients' bed side charts as TPR graphic chart 69.75% (Rank II), intake output record 77.9% (Rank III). The highest nursing documentation mean percentage obtained was of treatment sheet 86% (Rank IV).
- The most deficit area of nursing documentation was vital signs chart and least deficit area was treatment sheet.

TABLE–1: Frequency and Percentage Distribution of Nursing Documentation Audit of NICU Patients' Bed Side Charts According to Items of TPR Graphic Chart.

N=100

S.No.	Items of TPR graphic chart	N	f	%

1.	MRD NO.	100	63	63%
2.	Date with month and year	100	47	47%
3.	Time	100	90	*90%
4.	Ward	100	100	*100%
5.	Use blue pen for charting temperature and black pen for respiration graphic chart	100	100	*100%
6.	Heart Rate charting with red ink	100	100	*100%
7.	Document is legible	100	54	54%
8.	Number of hospitalization days mentioned	100	97	*97%
9.	Number of post operation days mentioned	100	100	*100%
10.	TPR graph sheet shows clear markings of temperature	100	54	54%
11.	TPR graph shows clear markings of heart rate	100	51	51%
12.	TPR graph shows clear markings of respiration	100	51	51%
13.	Total intake of 24 hrs. written in ml on TPR graphic chart	100	45	45%
14.	Urine output of 24 hrs. written on TPR graphic chart	100	37	37%
15.	Number of stool output of 24 hrs. written on TPR graphic chart	100	42	42%
16.	weight of baby recorded with units on TPR graphic chart	100	88	*88%

* Standards met

Table 2: Frequency and Percentage Distribution of Nursing Documentation Audit of NICU Patients' Bed Side Charts According to Items of Vital Signs Chart.

N=100

S.No.	Items of vital signs chart	N	F	%
17.	Patient's name recorded	100	99	*99
18.	Age of patient recorded	100	98	*98
19.	Sex of patient recorded	100	99	*99
20..	Date with month and year recorded	100	61	61
21.	Date of admission recorded	100	53	53
22.	Time of charting recorded	100	82	*82
23.	Ward mentioned	100	99	*99
24.	MRD Number written	100	84	*84
25.	Incubator / Warmer Number	100	58	58

26.	Using blue/black pen for charting vital signs chart	100	97	*97
27.	Temperature recorded with units	100	14	14
28.	Temperature recorded regular interval	100	85	*85
29.	Heart rate recorded with units	100	9	9
30.	Heart rate recorded at regular interval	100	84	*84
31.	Respiration recorded with units	100	7	7
32.	Respiration recorded at regular Interval	100	67	67
33.	SPO_2 recorded	100	86	*86
34.	SPO_2 recorded at regular interval	100	48	48

*Standards met

Table 3: Frequency and Percentage Distribution of Nursing Documentation Audit of NICU Patients' Bed Side Charts According to Items of Intake Output Record.

N=100

S.No.	Items of intake output record	N	F	%
35.	Time of oral intake	100	90	*90%
36.	Type of oral intake	100	93	*93%
37.	Time of IV fluid administration	100	90	*90%
38.	Type of IV fluid administration	100	95	*95%
39.	Amount of IV fluid administration in ml	100	98	*98%
40.	Time of urine output	100	91	*91%
41.	Amount of urine output in ml	100	75	75%
42.	Vomit/aspirate/drain	100	100	*100%
43.	Total intake of 24 hrs. recorded in ml	100	33	33%
44.	Total output of 24 hrs. recorded in ml	100	30	30%
45.	Total no. of stool passed in 24 hrs. recorded	100	64	64%

* Standards met

Table 3: Frequency and Percentage Distribution of Audit Nursing Documentation of NICU Patients' Bed Side Charts According to Items of Treatment Sheet.

N=100

S.No.	Items of treatment sheet	n	f	%
46.	Time of drug administration	100	93	*93%
47.	Types of drug	100	96	*96%
48.	Name of the drug is clear and legible	100	98	*98%
49.	Name of the drug written correctly	100	99	*99%
50.	Name of the drug same as that of doctors order	100	100	*100%
51.	IV fluids and antibiotic injections charting with red ink	100	80	*80%
52.	Mention antibiotic day	100	78	78%
53.	Dosage	100	100	*100%
54.	Frequency	100	100	*100%
55.	Route	100	34	34%
56.	Signature of the staff	100	68	68%

* Standards met

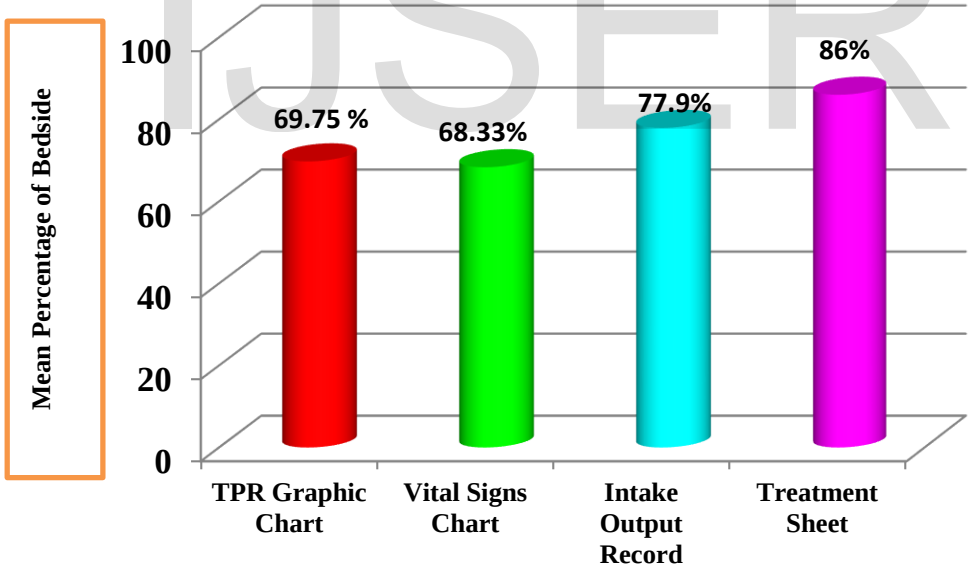

Fig. 1 Mean percentage score of NICU patients' bed side charts according to Nursing Audit

IV. Interpretation and Conclusion

- The findings of research have been discussed in accordance with objectives of the research. Mean nursing documentation score was highest (42.56)

in the month of December for documentation records as compared with mean nursing documentation score (42.32) of month January, (41.6) of month March, and (39.48) of month February. There was statistical significant difference in the mean score. On the basis of mean it can be said that nursing documentation had reduced as years advanced.

- There was no significant difference in audit score of nursing documentation in respect to duration of hospitalization. Duration of hospitalization had no significant impact on nursing documentation.
- The nursing documentation of vital signs sheet had the lowest mean percentage of 68.33% (Rank I) among other NICU patients' bed side charts as TPR graphic chart 69.75% (Rank II), intake output record 77.9% (Rank III). The highest nursing documentation mean percentage obtained was of treatment sheet 86% (Rank IV).
- The most deficit area of nursing documentation was vital signs chart and least deficit area was treatment sheet.
- Twenty six NICU patients' bed side charts met standards of nursing documentation.

V. References

1. Potter Patrica, Perry Anne G. Fundamental of Nursing- Concepts process and practice, St. Louis Missouri, 4th edition, Mosby Company Publication .1997: 476-99
2. Ehrenberg Anna, Birgersson Christina . Nursing documentation of leg ulcers: Adherence to clinical guidelines in a Swedish primary health care district. Scandinavian Journal of Caring Sciences. 2003; 17 (3): 278-84
3. Phaneuf, MC. A nursing audit method. Nurse Outlook. May 1974; 12 (5): 42-45.
4. Phaneuf C. Maria.The nursing audit self regulation in nursing practice. 2nd edition. 1976 35,33
5. Hatton Paul, Renvoize B. Edward. Psychiatric Audit. Psychiatric Bulletin. 1991; 15: 550-51
6. Joyce Good Henderson. Nursing: The importance of documentation and charting. 2009. Available from http://www.helium.com.
7. Chattopadhyay S. A study on documentation system and factors influencing documentation practices among nurses working in selected wards of Nehru Hospital, PGIMER, Chandigarh. Unpublished Msc. (N) thesis. National institute of Nursing education 2003Enguidanos SM, Brumley RD. Risk of medication errors at hospital discharge and barriers to problem resolution. 2005; 24(1-2):123-35.
8. Bonace A.L. Documentation's effect on reimbursement for rapid treatment status patients. Journal of nursing administration. 2000; 30(6): 295-97
9. Socialstyrelsen. Omfattningen av administration I verden. The Swedish national Board of Health and Welfare: the administerative task in health care.2000
10. Wood La Bindo Geri, Habes Juditch. Nursing Research methods, critical appraisal and utilization. 4th edition, St. Louis, Mosby Company. 1998
11. Fawcett. Conceptual Model of Nursing. 2nd edition, Philadelphia, FA Davis Company. 1989
12. Enguidanos SM, Brumley RD. Risk of medication errors at hospital discharge and

barriers to problem resolution. Home Health Care Services Quarterly. 2005; 24(1-2): 123-35

13. Graff Micheal, Soriano Cecilia, Rovell Kris, Hiatt Mark, Hegyi Thomas. Undetected apnea and bradycardia in infants. Pediatric Pulmonology 2005; 11 (3): 195-97
14. Weber Martin, Huber Christopher. Documentation of Severe Pain, Opioid Doses, and Opioid-Related Side Effects in Outpatients with Cancer. Journal of Pain and Symptom Management. 1999; 17 (1): 49-54
15. Wendy Chaboyer , Lukman Thalib, Michelle Foster Carol Ball, Brent Richards. Predictors of Adverse Events in Patients After Discharge From the Intensive Care Unit., American Journal of Critical Care. 2008;17: 255-63
16. Oliver A, Powell C, Edwards D, Mason B. Observations and monitoring: routine practices on the ward. Paediatric Nursing. 2010 ;22(4):28-32.
17. Saranto Kaija, Kinnunen M. Ulla. Evaluation nursing documentation- research design and methods: systematic review. Journal of advanced nursing. 2009; 65 (3): 464- 476
18. Kemp D, Tabaka N. Postoperative urinary retention. Journal of Post Anesthesia Nursing. 1990;5 (6): 397-400
19. Setz G. Vanessa, Innocenzo D Maria. Evaluation of the quality of nursing documentation though the review of patient medical records. Acta paul enferm. 2009; 22(3): 14-17
20. Sally Smith, Jayne Fraser, Catherine Plowright, Louise Dennington, Paul Seymour, Gemma Oliver, Claire MacLellan. An audit of nursing observations on ward patients. Nursing Times. 2008; 104 (30) :28-29
21. McGain F,Cretikos MA, Jones D, Van Dyk S, Buist MD, Opdam H, Pellegrino V, Robertson MS, Bellomo R. Documentation of clinical review and vital signs after major surgery. Medical Journal of Australia.

2008 ;189(7): 380-83

22. Nordström G, Gardulf A. Nursing documentation in patient records. Scandinavian Journal of Caring Sciences. 1996; 10(1) :27-33
23. Valerie F. Kiefer, Robert J. Schwartz, Lenworth M. Jacobs The effect of quality assurance on flight nurse documentation. Air Medical Journal.1993;12 (1-2):11-14
24. Kaur Kuldeep, Vati Joginder, Kalia Raman. A descriptive study on maintenance of intake and output documents at Nehru Hospital. Nursing and midwifery research journal. 2005; 1 (2): 115-122
25. Cheater FM. Retrospective document survey: identification, assessment and management of urinary incontinence in medical and care of elderly wards. Journal of Advance Nursing. 1993;18: 1734-46.
26. McGain F,Cretikos MA, Jones D, Van Dyk S, Buist MD, Opdam H, Pellegrino V, Robertson MS, Bellomo R. Documentation of clinical review and vital signs after major surgery. Medical Journal of Australia. 2008 ;189(7): 380-83
27. Elioart L. How to implement an audit to improve records. Nursing Times. 1994; 90(35): 48-50.
28. Dalri MC, Rossi LA, de Carvalho EC. Ethical and legal aspects of the nursing records of organ donors for transplant. Rev Esc Enferm USP 1999; 33(3): 224-30
29. Isabelle Crossan, David Curtis, Yong-Lok Ong. Audit of psychiatric discharge summaries:

completing the cycle. Psychiatric Bulletin. 2004; 28: 329-31

30. Elaine Soude. Nursing documentation versus standardized assessment of cognitive status in hospitalized medical patients. Applied Nursing Research. 2000; 13 (1): 29-36
31. Voutilainen P, Isola A, Muurinen S, Nursing documentation in nursing homes- state - of - the - art and implications for quality improvement. Scandinavian Journal of Caring Sciences. 2004; 18 (1): 72-81
32. Davis BD, Billing JR, Ryland RK. Evaluation of Nursing process documentation. Journal of Advance Nursing. 1994; 19:960-68
33. Neilson T, Peet M, Ledsham. Does the nursing care plan help in management of psychiatric patient. Journal of Advance Nursing. 1996; 24: