

## IMPROVING MEDICAL RECORDS FILING IN A MUNICIPAL HOSPITAL IN GHANA

E.A.A TEVIU<sup>1</sup>, M. AIKINS<sup>2</sup>, T. I. ABDULAI<sup>1</sup>, S. SACKKEY<sup>2</sup>, P. BONI<sup>3</sup>, E. AFARI<sup>2</sup> and F. WURAPA<sup>2</sup>

<sup>1</sup>Municipal Hospital, Goaso, P. O. Box 27, Goaso, Ghana <sup>2</sup>School of Public Health, P. O. Box LG13, Legon-Accra, Ghana, <sup>3</sup>Human Resource Unit, Ghana Health Service, Accra, Ghana

*Corresponding Author: Dr Moses Aikins*

*E-mail: [maikins57@yahoo.com](mailto:maikins57@yahoo.com)*

*Conflict of Interest: None declared*

### SUMMARY

**Background:** Medical records are kept in the interest of both the patient and clinician. Proper filing of patient's medical records ensures easy retrieval and contributes to decreased patient waiting time at the hospital and continuity of care. This paper reports on an intervention study to address the issue of misfiling and multiple patient folders in a health facility.

**Design:** Intervention study.

**Setting:** Municipal Hospital, Goaso, Asunafo North District, Brong Ahafo Region, Ghana.

**Methods:** Methods employed for data collection were records review, direct observation and tracking of folders. Interventions instituted were staff durbars, advocacy and communication, consultations, in-service trainings, procurement and monitoring. Factors contributing to issuance of multiple folders and misfiling were determined. Proportion of multiple folders was estimated.

**Results:** Results revealed direct and indirect factors contributing to issuance of multiple patient folders and misfiling. Interventions and monitoring reduce acquisition of numerous medical folders per patient and misfiling. After the intervention, there was significant reduction in the use of multiple folders (i.e., overall 97% reduction) and a high usage of single patient medical folders (i.e., 99%).

**Conclusion:** In conclusion, a defined medical records filing system with adequate training, logistics and regular monitoring and supervision minimises issuance of multiple folders and misfiling.

**Keywords:** Medical records filing, continuity of care, OPD, multiple folders, Ghana.

### INTRODUCTION

Health information and evidence is one of the critical blocks of the health system strengthening.<sup>1</sup> Health information system cannot be ignored since health policies and planning in any country are mostly dependent on the correct and timely information on various health issues.<sup>2</sup> Health facilities throughout the world keep consistent records of patients/clients. These medical

records are normally kept confidential and in confined places such as records unit or offices.

Medical record is a chronologically written account of a patient's examination and treatment that includes the patient's medical history and complaints, the physician's physical findings, the results of diagnostic tests and procedures, and medications and therapeutic procedures.<sup>3</sup>

In effect, medical record of a patient is the clinical representation of the patient that is built over a period of time by various clinicians with the consent, trust, privacy and confidence of the patient. It enables continuity of care and again, overtime, it becomes a comprehensive, clinical database from which various and salient clinical information is gathered through research. Moreover medical records serve many functions but their primary purpose is to support patient care<sup>4</sup>, and in almost all public health facilities in Ghana, they are kept in folders. Structuring the record can bring direct benefits to patients by improving patient outcomes and doctors' performance. On the side of patients, the records function as medical identification.<sup>5</sup>

Proper filing of patient's medical records ensures easy retrieval and contributes to decreased patient waiting time at the hospital and ensures continuity of care. It is therefore, imperative, that medical records are always kept in the interest of both the clinician and the patient. The medical folder must always be in the custody of the health facility while the patient enjoys the right of information. Studies in other developing countries have observed their record keeping systems to be inadequate with about half (52.2%) of the records retrievable within one hour<sup>6</sup>, some of the records were poorly designed and there is use of multiple patient health records by patients.<sup>7</sup> In Ghana, the existing recordkeeping systems of some hospitals were found not designed to collect information on some diseases.<sup>8</sup> This affects monitoring, supervision and decision-making on these diseases.

Other authors have also noted staff training, monitoring and regular supervision are important to successful improvement in records keeping.<sup>8,9</sup> Some studies found that problems of poor record keeping practices in health care facilities such as duplication, incomplete data, and inaccuracies in data made it difficult for health administrators and researchers to accurately and reliably identify and define health problems.<sup>9</sup>

Therefore the strengthening of the medical records in general and the health electronic record in particular, could contribute to its position as a valuable source of information for health care delivery, public health and policy making.<sup>10</sup> Furthermore change in public administration culture and good governance among others are all essential for the devolution of Health Management Information System (HMIS) to health decision making.<sup>11</sup>

As attendance in the health facilities increases with time, the volume of medical records becomes a big challenge to health facility management. This is no different in Ghana. Of late most of our public health facilities are confronted with filing of medical records especially with the introduction of the national health insurance scheme which brought in its wake the introduction of new folders and NHIS identification cards (ID cards). Anecdotal evidence from most public health facilities indicates that facilities are saddled with old and new folders for out-patient and in-patient department as well as a sizeable number of the patients having more than two folders due mainly to misfiling or patient forgetting their ID cards when visiting the facility.

In 2010, the School of Public Health, University of Ghana, during an annual summer short course in Improving Management for Public Health Interventions (IMPHI), a number of district health directors identified misfiling and multiple patient folders as a major problem in their facilities. This paper reports the results of an intervention in medical record filing system of a municipal hospital in Ghana.

## METHODS

This study was conducted in two phases: between January and December, 2009 was the pre-intervention stage and post-intervention phase was from April to October, 2010. The objectives of the study were to assess the situation of medical records filing in the hospital and put in measures to reduce misfiling.

### *Study area*

The Municipal Hospital, Goaso, a referral hospital in the Asunafo North District, is a 106 bed capacity hospital and a National Health Insurance Scheme accredi-

ed facility. The 2009 annual average outpatient department attendance was about 5,750, annual average admissions about 710 with an average length of stay of three days and bed occupancy rate of four. The Asunafo North District was made a municipality in the year 2008 and has five sub-districts with 365 communities. The district's estimated population was 124,685 according to 2010 Housing and Population Census. Goaso town is municipal capital. The hospital provides the following services: outpatients, inpatients, 24-hour emergency, general surgical, obstetrics and gynaecology, reproductive and child health, general medical, dental, eye, laboratory, x-ray, ultrasound, ECG, and mortuary. Other services include general administration, and catering.<sup>12</sup>

### **Pre-intervention data collection**

*Records review:* Medical records are kept in medical folders. Medical folders of 2009 in the Records Unit of the hospital were all reviewed for a week by checking whether they have been properly shelved in their correct places or were left lying about. Multiple folders occur when a patient acquires more than one functional folder. Multiple folders by index number, name, age and sex were also checked. A medical folder was classified misfiled if the folder is found in an inappropriate shelf by its index number and for inpatient cases if the folder is placed in the wrong month in the shelf by any reason.

### **Interventions**

The following interventions were instituted in the hospital:

*Staff durbar:* A staff durbar was held to inform all staff of the hospital about the filing situation, and to solicit their inputs and promote ownership.

*Advocacy and communication:* The public address system of the hospital, the local radio stations and the chief's palace were used for advocacy. There was a 30-minute daily public education on the importance of the patients ID cards and the need to carry these ID cards to the hospital at each visit to avoid double folders. Staffs were also reminded of the role they should play in the medical records management. Public announcements were also carried out on the local FM radio stations for two weeks on the importance of patients ID cards.

*Consultations:* Consultations were held with various experts on medical records to develop training material for the in-service training and supervision and monitoring system for records management.

*Study tours:* Study tours were conducted to all hospitals in Brong Ahafo region reputed with good medical

record system by the record staff to under study their best practices. The hospitals visited were St. John of God Hospital, Duayaw Nkwanta, St. Elizabeth Hospital, Hwidiem and Kintampo North Hospital, Kintampo.

*In-service training:* An in-service training was conducted for all hospital staff. The purpose was to inform all staff about the records policy of the Ghana Health Service and the role of staff in the management of patients' medical records as a collective responsibility. The resource persons were drawn from the Health Information Unit of the Ghana Health Service, Regional Health Directorate and the Regional Hospital, Sunyani.

*Procurement:* New folders, shelves and folder holding cardboards and a computer for the records unit were procured by the hospital administration. Funds were sourced from the internally generated funds of the hospital with approval from hospital management and the procurement was conducted by the Tender and Evaluation Committee of the hospital using the tenets of the national procurement act.

*Monitoring:* Monitoring and supervision programme was instituted in the records unit. There was a daily duty roster for all records. Retrieval of folders from the wards, consulting rooms, theatre, diagnostics and pharmacy back to the records unit were recorded daily. Individual drop-in boxes were provided and labelled with the names of all records staff. These drop-in boxes contain medical records to be filed every day. The boxes were inspected daily by the Records Unit In-Charge and verified by the Health Service Administrator. Records staff, who failed to file their records, were required to explain their actions and possibly sanctioned. Sanctions range from verbal warnings, written queries to forfeiture of part of monthly allowance.

#### **Post-intervention data collection**

Two main methods were employed for data collection. These methods were: direct observation and tracking of folders.

*Direct observation:* Direct observation was conducted at the records office for one week by two health service administrator housemen to identify the direct and indirect factors contributing to misfiling of medical records. The patient flow of the hospital out-patient department was also mapped out.

*Tracking of folders:* A notebook was placed at the records unit to keep track of patients whose medical folders could not be retrieved irrespective of whether they possessed their hospital ID cards or not. This was to keep track of missing patients' folders, and the need to issue new folders to these patients.

#### **Data analysis**

*Direct observations:* This analysis was manually conducted with the structured guide – direct and indirect factor matrix of types and issues. Similar themes were first grouped into direct and indirect factors contributing to misfiling were further classified into direct and indirect factors stating clearly the emerging issues involved and tabulated. The patient flow of the out-patient department was also mapped out manually from the gathered observations.

*Records review:* The Microsoft Excel 2007 software was used to compile and analyse all the reviewed records in two main groups – post-intervention period (January – December 2009) and pre-intervention (June to October 2010). Data was compiled for patients with only one folder, patients with two folders, patients with three folders and patients with four or more folders. Descriptive analysis of percentages and charts were used to assess multiple folders. The proportion of multiple folders was obtained by dividing the number of multiple folders in a group by the total number of patients seen at OPD during the period.

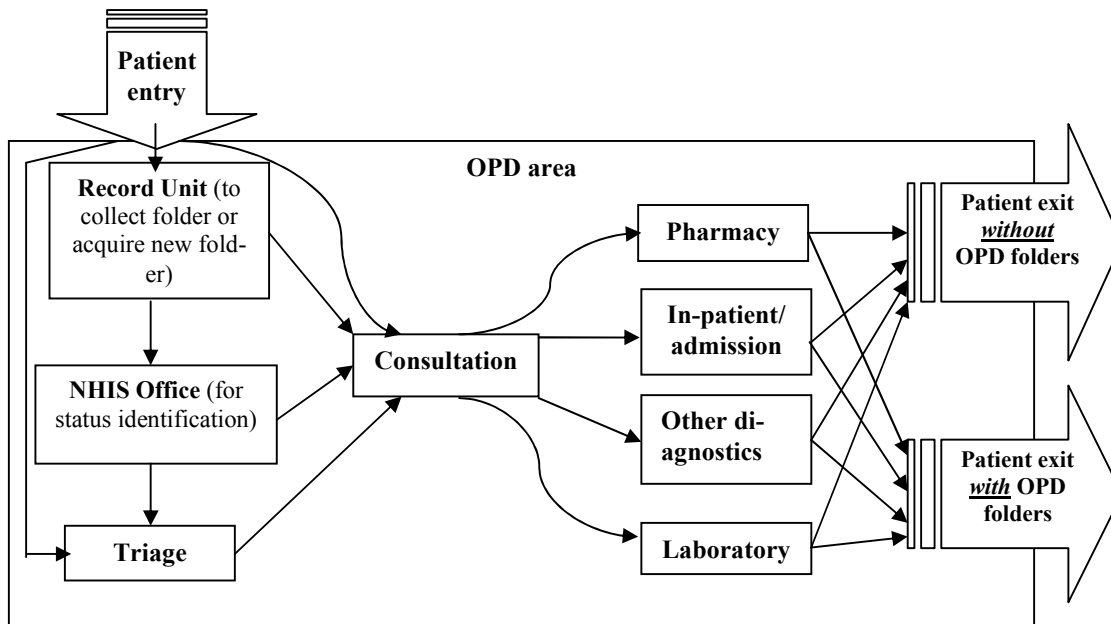
## **RESULTS**

### **Patient flow in the hospital**

Figure 1 shows a typical patient flow in the out-patient department of the hospital. This flow diagram demonstrates the complex relationship existing between the different flow entities: records unit, NHIS Office, triage, consultation, pharmacy, laboratory, other diagnostics and in-patient/admission. Patients entering the out-patient department have three choices: they either go to the Records Unit for their folders or by-pass it to triage or consultation if they came in with their folders from home. Some patients may by-pass this normal triage-consultation to the other services or will do so incompletely since each of these services implies additional treatment time and cost, however this is not captured in the diagram.

Table 1 shows the direct and indirect factors leading to misfiling of medical records in the hospital. The direct factors were made up of shelving and space, staff, patient and logistics. Whilst the indirect ones were: OPD opening time, record unit staff and filing system.

The issues identified under the four types of direct factors ranges from size of the new folders, staff indifference to filing, and patient indiscriminate access to records office to lack of computer for records keeping. Whilst for the issues identified under the three types of indirect factors also covers staff non-compliance to opening hours, no training in records keeping and lack of defined filing system.



**Figure 1** Patient flow in a typical day in Goaso Municipal Hospital, 2009

**Table 1** Direct and indirect factors contributing to misfiling in Goaso Municipal Hospital, 2009

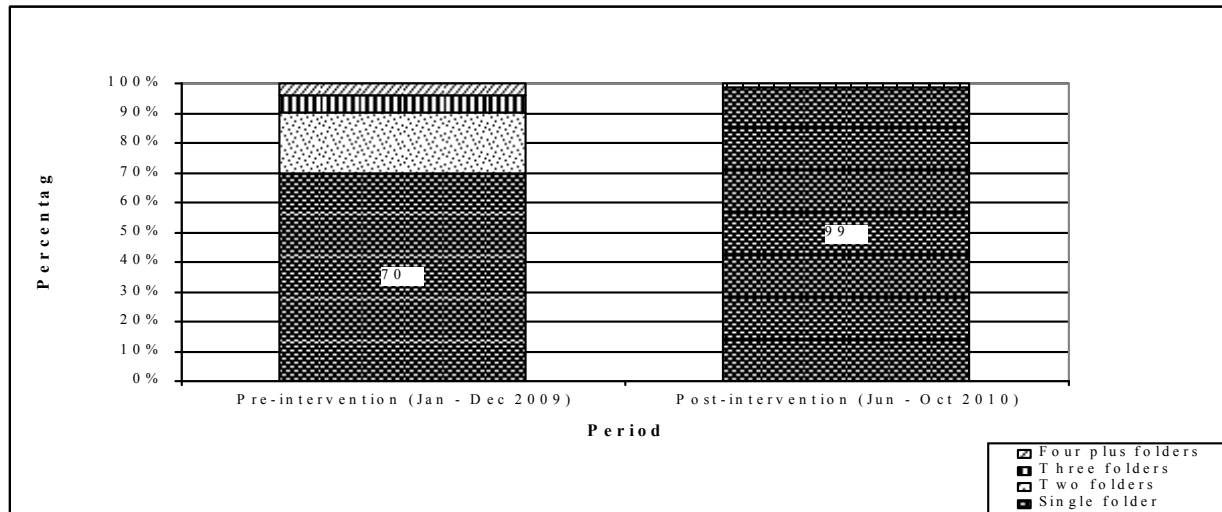
Factors	Types	Issues
Direct	Shelving and space	<ul style="list-style-type: none"> <li>New folders are too big for current filing space.</li> <li>Unavailability of space for OPD folders</li> <li>Using one folder for both outpatient and inpatient</li> </ul>
	Staff	<ul style="list-style-type: none"> <li>Staff indifference to filing folders</li> <li>Staff errors in filing</li> </ul>
	Patient	<ul style="list-style-type: none"> <li>Indiscriminate access to records office</li> <li>Patients attending hospital without ID cards leads to issuance of new folders</li> <li>Patients attending hospital with temporary NHIS cards with no folder numbers leads to issuance of new folders</li> </ul>
	Logistic	<ul style="list-style-type: none"> <li>Lack of computer for records keeping</li> <li>Inadequate number of ladders for rapid retrieval of folders</li> </ul>
Indirect	OPD opening time	<ul style="list-style-type: none"> <li>Staff non-compliance to opening hours leads to compromise of closing time. This leads to delays and long waiting time</li> </ul>
	Records unit staff	<ul style="list-style-type: none"> <li>Untrained support staff resulting in wrong indexing and filing</li> </ul>
	Filing system	<ul style="list-style-type: none"> <li>Lack of defined filing system; i.e., inpatients folders are filed according to months and the others differently</li> </ul>

### Magnitude of multiple medical records

Figure 2 show the medical records situation for both pre- and post-intervention periods. During the pre-intervention period 70% of the total patient folders (55,596) in the facility were single patient folders with the remainder 30% being multiple folders. Of these, 20% were double patient folders, 6% were three folders and 4% were four or more folders. After the interven-

tion period, 99% of the total patient folders (2,000) in the facility were single patient folders with only 1% being multiple folders (i.e., double patient folders). There was therefore overall 97% reduction in multiple folders: 95% reduction in double patient folders and 100% reduction in three and four or more patient folders.

**Figure 2** Percentage distributions of hospital folders per patient in Goaso Municipal Hospital, 2009



## DISCUSSION

The study presents some noteworthy points of importance in medical records filing in health facilities. The first is that patient flow in the out-patient department is a complex relationship between the different flow entities: records unit, NHIS Office, triage, consultation, pharmacy, laboratory, other diagnostics and in-patient/admission. This is a determinant of medical records retention and the creation of multiple folders in the health facility (i.e., patients leave the facilities with or without their medical folders). Health facilities keep consistent records of patients/clients. As other studies have shown, medical records serve many functions but their primary purpose is to support patient care<sup>4</sup>, and for the patient they function as medical identification.<sup>5</sup>

Secondly, there are direct and indirect factors leading to misfiling of medical records in the hospital. The direct provider factors were shown to be shelving and space, staff and logistics, whilst direct patient factors, invariably led to the issuance of new patient medical records. This in most cases resulted in multiple patient folders and led to misfiling. Almost all the indirect factors namely late OPD opening time, untrained record unit staff and lack of defined filing system can be addressed if the direct factors are properly handled. Similar results of poor records design and use of multi-

ple patient health records by patients were also observed in South Africa<sup>7</sup> and in Ghana.<sup>8</sup>

Finally, there was significant reduction in the use of multiple folders for the five-month intervention period. The high usage of single patient medical folders (i.e., 99%) with an overall 97% reduction in multiple folders after the intervention period requires commendation given the short intervention period. Thus it should also be recognised that the multiplicity of interventions such as staff durbars, advocacy and communication, consultations, staff tours, in-service training, procurement and monitoring had the required impact. Other authors have also observed that staff training, monitoring and regular supervision are important to successful improvement in records keeping.<sup>8,9</sup>

## CONCLUSION

In conclusion, a defined medical records filing system with adequate training, logistics and regular monitoring and supervision minimises issuance of multiple folders and misfiling.

## RECOMMENDATIONS

In all, lessons learnt from this study show clearly that health facilities must first assess the situation of the medical records by carrying out a situation analysis to

obtain the direct and indirect factors leading to issuance of multiple folders and misfiling. This then is followed by a clear definition of filing system for the facility in terms of storage and folder identifications. Moreover, management should remember that monitoring and supervision are critical to the process of effective medical records system, thus they should put in place a monitoring process and provide the necessary logistics. This will almost eliminate the staff and institutional factors contributing to the problem of issuance of multiple folders and misfiling. To maintain the system, periodic staff training in records keeping and documentation should be instituted for the staff of the health facility administration and records sections.

### ACKNOWLEDGEMENT

We thank the Management of the Municipal Hospital, Goaso, Asunafo North District, Brong Ahafo region and the entire staff for their contribution to this study. Our special thanks go to the management of St. John of God Hospital, Duayaw Nkwanta, St. Elizabeth Hospital, Hwidiem and Kintampo North Hospital, Kintampo for their assistance during the study tours.

### REFERENCES

1. World Health Organization. Sound Choices: Enhancing Capacity for Evidence-informed Health Policy. Edited by Andrew Green and Sara Bennett. 2007, ISBN 978 92 4 159590 2 (NLM classification: WA 540).
2. Ali M and Horikoshi Y. Situation analysis of health management information system in Pakistan. *Pakistan J. Med. Res.* 2002; 41:(2): 64 – 69.
3. Houghton Mifflin Company. The American Heritage® Medical Dictionary 2004.
4. Mann R and Williams J. Standards in medical record keeping. *Clin. Med.* 2003; 3(4): 329 – 32.
5. Norden AL, Martinowitz GJO and Fehrsen GS. Patients' thoughts on patient-retained medical records. *SA Fam. Pract.* 2004; 46(7): 30 – 33.
6. Aziz S and Rao MH. Existing Record Keeping System in Government Teaching Hospitals in Karachi. *J. Pak. Med. Assoc.* 2002; 52(4): 163 – 74.
7. Kerry TP. Improving The Use Of Patient-held Records in the Emtshezi Subdistrict. *SA Fam. Pract.* 2006; 48 (1) 16 – 16f.
8. Danquah JB, Appah EK, Djan JO, Ofori M, Essegbey IT and Opoku S. Improving Recordkeeping For Maternal Mortality Programs, Kumasi, Ghana. The Kumasi PMM Team. *Int. J. Gynaecol. Obstet.* 1997; 59(2): S149 – 55.
9. Ali M and Kuroiwa C. Accurate Record Keeping in Referral Hospitals in Pakistan's North West Frontier Province and Punjab: A Crucial Step Needed To Improve Maternal Health. *J. Pak. Med. Assoc.* 2007; 57: 443 – 46.
10. Kamadjeu, RM, Tapang, EM and Moluh RN. Designing and Implementing An Electronic Health Record System In Primary Care Practice In Sub-Saharan African: A Case Study From Cameroon. *Informatics in Primary Care.* 2005; 13: 179 – 86.
11. Qazi MS, Ali M and Kuroiwa C. The Health Management Information System Of Pakistan Under Devolution: Health Managers' Perceptions. *Biosci. Trends.* 2008; 2(2): 75 – 80.
12. Teviu, EAA (Unpublished). Improving Medical Records Filing at the Municipal Hospital, Goaso, Project report 2010.