

RADIOLOGY REQUEST FORMS
AND
THE INTERPRETATION OF RADIOGRAPHS
AT
THE KENYATTA NATIONAL HOSPITAL

A DISSERTATION SUBMITTED IN PART FULFILMENT
FOR THE DEGREE OF MASTER OF MEDICINE IN
DIAGNOSTIC RADIOLOGY
UNIVERSITY OF NAIROBI

BY DR. DHARSEE, JAFFER.G.

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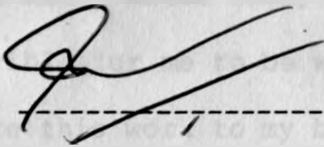


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DECLARATION**CANDIDATE**

This dissertation is my original work and has not been presented for a degree in any other University.

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DEDICATION

I wish to dedicate this thesis to my parents, and to my beloved Aunty whose love, support and prayers have made it possible for me to be what I am today. I also dedicate this work to my brother Murtaza, for his quiet encouragement and support throughout my medical career.

ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to Dr. M.N. Wambugu, my supervisor, for her constant advice, suggestions and guidance throughout the preparation of this dissertation.

I gratefully acknowledge the inspiration and assistance received from Dr. A. Aywak in the preparation of this thesis, and for help in obtaining relevant literature and material.

I also wish to thank the rest of the academic staff of the Department of Diagnostic Radiology, University of Nairobi, for their contribution towards this work.

My thanks are also due to Mr. Muniu of the Kenya Medical Research Institute for his guidance and expertise in the statistical analysis of the data.

I would also like to express my appreciation to my niece, Malika, for her continuous 'technical' assistance, and finally, to my wife, Dr. Nazima and my daughter Sayyada, for bearing with me, and being a source of support and encouragement always.

CONTENTS

| | |
|--|-----|
| TITLE | i |
| DECLARATION | ii |
| DEDICATION | iii |
| ACKNOWLEDGEMENTS | iv |
| CONTENTS | v |
| LIST OF ABBREVIATIONS | vi |
| SUMMARY | 1 |
| AIM AND OBJECTIVES | 2 |
| INTRODUCTION | 3 |
| LITERATURE REVIEW | 5 |
| RATIONALE | 13 |
| MATERIALS AND METHODOLOGY | 15 |
| ETHICAL AND MEDICOLEGAL CONSIDERATIONS | 16 |
| RESULTS | 17 |
| DISCUSSION | 33 |
| CONCLUSION | 46 |
| RECOMMENDATIONS | 47 |
| SAMPLE FORMS | 50 |
| REFERENCES | 58 |
| APPENDIX I | 64 |
| APPENDIX II | 65 |
| APPENDIX III | 67 |

LIST OF ABBREVIATIONS

CL.HX = Clinical History

CX SPINE = Cervical Spine X-ray

CXR = Chest X-ray

KNH = Kenyatta National Hospital

KUB = Kidney, Ureters, Bladder Plain Film X-ray

KV = Kilovolts

L/S SPINE = Lumbosacral Spine X-ray

LMP = Last Menstrual Period

N/A = Not Applicable

PN SINUSES = Paranasal Sinuses X-ray

PN SPACE = Post Nasal Space X-ray

SXR = Skull X-ray

TH SPINE = Thoracic Spine X-ray

SUMMARY

A total of 491 X-ray request forms together with their accompanying radiographs were analyzed over a three month period at the Radiology Department of Kenyatta National Hospital, Nairobi, from January to March 2000.

Patients covered in the study had been referred from various departments including the casualty, wards, general clinics and private clinics. They ranged from 5 weeks to 78 years in age.

The study found that 334 (68%) of request forms were inadequately filled. Of the different parameters requested for on the forms, filling in of menstrual history (LMP) was the poorest (10.4% LMP given), while age and sex were relatively well filled in.

Analysis of the various departmental referrals showed that patients referred from private clinics had the most inadequately filled forms, while provision of clinical history was also the poorest for these patients.

Of the films that were not reported, 46.5% were due to radiographic faults including film-fog, poor exposure and processing, while 30.2% were returned due to inadequate patient information.

AIM:

To determine the limitations posed by inadequately filled radiology request forms on the interpretation of radiographs by radiologists at the Kenyatta National Hospital.

SPECIFIC OBJECTIVES:

- 1) To determine the prevalence of inadequately filled radiology request forms at Kenyatta National Hospital.
- 2) To determine the prevalence of recording of patients' age, sex, menstrual history and relevant clinical history on radiology request forms at Kenyatta National Hospital.
- 3) To determine the limitations posed by inadequate/irrelevant clinical history on the interpretation of radiographs.

INTRODUCTION:

It was as early as 1920 when the realization came that 'film reading' was an art, and that radiology was not just a technical procedure that could be performed by technicians (1). This ultimately led to the development of radiology as a specialty.

Although with time, newer screening procedures and imaging techniques have been developed, plain-film radiology still remains the mainstay in all diagnostic imaging procedures- "over 80% of the procedures performed in most radiology departments consist of radiographs made using conventional film-screen methods"(2), and the interpretation of radiographs even today takes a large and important section in the various tasks of the radiologist.

With current developments in technology, and the growth of newer imaging techniques, there is an increasing frequency with which clinicians depend on diagnostic imaging to formulate or support a diagnosis and management. Hence the correct reading and interpretation of these images has grown to form a crucial step in the management of the patient. As Dr. Harold Jacobsons, Chairman Emeritus of Department of Radiology at Montefiore Medical Centre puts it, "the technical revolution in medicine has just begun, but no number of machines, scanners, lasers, catheters, digitizers or phosphor plates will replace the radiologist who must, with

unique experience and keen visual perception, make an analysis and judgement that could mean life or death to the patient"(3).

It is imperative, however, that the radiologist always works hand-in-hand with the clinician; it is the clinician who has all the detailed knowledge about the patient, the type and extent of his illness, and the specific body response to the disease and to its management.

Regardless of the technology used, and the type of images produced, the clinician's information is considered like a compass in the wide realm of disease management, directing the health team towards the correct diagnosis. This hypothesis is assumed in many places.

In our set-up, the importance of clinical information in assisting the radiologist's interpretation of diagnostic images has never been investigated. It is hoped that this study comes up with important revelations.

LITERATURE REVIEW

Over the last two decades, radiology has grown to enjoy an enviable position amongst the medical specialties. Not only have there been enormous developments in new technology which have impacted diagnostic radiology far more than most other medical sub-specialties, but the volume of radiological procedures has increased far more than the overall growth in health-care services (4).

With health care costs rising, and with it, the attendant increase in spending on radiological services, there is a worldwide concern to cut back on unnecessary and inefficient imaging procedures which have little effect on a patients overall management. Hence doctors are increasingly being asked to justify the use of diagnostic imaging. In USA, diagnostic imaging accounted for an estimated annual expenditure of 22 billion USD in 1991 alone (5,15).

Whereas in the past, information about the diagnostic accuracy of imaging tests was sufficient; in the future, information about the impact of diagnostic imaging on disease outcomes will be needed (6). Hence, in addition to performing and interpreting imaging procedures, radiologists too, must learn to work as efficient managers of health care services, and to

organize their practices for effective contracting and service delivery for patients in health care systems (4).

There is a lot that radiologists can do in the way of effectively managing their imaging services. To begin with, the evaluation of a few basic facts about the use of radiological services can help. For example, the essential question: whether a particular diagnostic procedure is really necessary?

Studies have shown that many radiological procedures, although requested for by clinicians, render little, if any useful information to supplement a particular diagnosis, and therefore management of the patient. Of these, plain radiographs form the majority. In addition to being a waste of scarce resources, unnecessary examinations are considered the largest form of unnecessary radiation exposure to patients (7).

A study conducted by Nicolas M.A and Morate F.J to "Analyse the use of Radiology in Primary Health Care" found that radiology was requested for in 12% of patients seen; in these, bone and thoracic radiologies accounted for almost 70% of requests. "Despite the high percentage of pathological radiographies, only 19% of these X-rays caused any change in the doctors' attitude"(8).

Other causes of unnecessary examinations include pre-employment physicals, periodic health examinations and routine examinations on hospital admissions (7), all of which the radiologist should be able to refuse to perform should he/she find it unnecessary or of little or no help to the patients overall management, although this should be done with extreme care in view of the increasing medico-legal implications. Hence the ever-increasing importance of consultations between clinicians and radiologists.

Where a certain diagnostic procedure is considered necessary, it is worthwhile considering the methods by which to maximize it's effectiveness both in order to provide the most benefit to the patient, at the least risk, and in order to reduce the frequency of repeat examinations. This is an area over which the entire team of personnel in radiology have considerable influence .The frequency of repeat examinations has been variously estimated to range as high as 10% of all examinations; in the typically busy hospital facility, repeat examinations will not normally exceed 4%. Examinations with the highest retake rates are lumbar spine, thoracic spine, KUB and abdomen (7). Causes of repeat examinations include equipment malfunction, radiographer errors, improper positioning and poor radiographic techniques resulting in a

film too light or too dark. Motion and improper collimation are other causes (7).

A good contributing factor to the repeats is the absence of adequate and relevant clinical information on the request forms. Radiographers are trained to alter their techniques depending on the given provisional diagnosis in order to facilitate the proper interpretation of the film. Example: a High KV technique for chest X-ray in a suspected cardiac condition (17). Correct filling of radiology request forms will be a step towards ensuring a correct radiographic technique, easy interpretation of films and hence the reduction of unnecessary repeats and delays in patient management.

The presence of adequate and relevant patient information to the radiology staff is important for many reasons other than to reduce repeat examinations. Often the only direct source of patient information available to the radiologist is the radiology request form. This usually contains everything from the patients name, age, sex, LMP (where applicable), relevant clinical history and diagnosis to the requesting doctors name and signature. Given the emphasis laid today on effectively managing the radiological services, reducing unnecessary

patient exposure and performing and interpreting radiology procedures to positively influence patient management and outcome, this form takes an important position in the link between clinician and radiologist in the overall management of the patient, and has in recent research, come under considerable scrutiny. Is this form being correctly filled and adequately utilized by requesting clinicians? Does it contain enough relevant patient clinical information to facilitate the necessary radiological procedure and its interpretation without any unnecessary delay?

A study conducted by Martinez et al in 1996 to study "The degree of compliance with radiology requests from primary care" evaluated the filling in of various sections of the radiology request form. They discovered that although patient's name, age and sex were well filled in, there was poor compliance in the address section; while the clinical data (symptoms, investigations) and suspected diagnosis were also insufficient, forming 56% (9).

In another study "The 'Ten day rule' and its implementation at KNH" Wambugu MN found that of 1062 requests forms of women examined, 789 (74.3%) had correct age filled in, and only 28 (2.6%) had the LMP indicated on the form. Seven women were found to be pregnant just before the X-ray examination, and

the investigation not done with instructions from the radiologist (10), who had to check with the patients on clinical suspicion. The radiologist or the technician in the department may not have enough time to converse with the patient for detailed clinical information. Hence it is important for the clinician to fill all the necessary information on the form.

In addition to easing the imaging procedure itself, adequate patient information, particularly the clinical history has been found to have a considerable influence on the interpretation of radiographs. It was as early as 1963 when Schreiber demonstrated the improved interpretation of films in the presence of clinical history (11), and since then several other studies have been performed to confirm this fact. Potchen et al (12) investigated the effect of irrelevant or directive chief complaint clues on normal and abnormal films; they report that there was a statistically significant increase in detection of abnormalities with a suggestive as opposed to irrelevant or no patient history. No differences were found in the interpretation of normal films. They concluded that these data support the use of patient clinical history in chest film interpretation (12).

Since the above studies were conducted in experimental settings, that is where the radiologists were asked to read films with and without knowledge of clinical history, further studies were performed to determine whether these findings would apply in the real life clinical setting. Doubilet and Herman undertook a study to determine the effect of clinical history on interpretation of radiographs, in which test films were included in the daily work of 'readers' (radiologists), who were unaware that a study was being carried out. Eight subtle but unambiguous abnormalities were included on test films; for each there were four readings with a suggestive and four with a non-suggestive clinical history. They found that there was a statistically significant increase in the rate of true positive readings in the presence of a suggestive as compared to a non-suggestive history (13).

Swensson R et al carried a study to determine the effect of 'focused search conditions' on the interpretation of radiographs. They reported an increase in the percentage of true abnormalities reported under these conditions. In their discussion, they note that the 'focused search condition' can be viewed as an experimental simulation of procedures that focus the radiologists' attention on specific areas of the film. In a clinical setting, a similar focus may be given by

the patients' history, clinical symptoms or the interest of the physician requesting the exam. They argue that clinical history would not only focus viewing attention on particular anatomic regions of the film, but would also provide a complementary source of diagnostic evidence about the likelihood that particular abnormalities are present. Hence, clinical history may improve the radiologist's decision because it helps him to judge more accurately which ambiguous radiographic features may be significant to account for the patient's symptoms (14).

RATIONALE:

Studies have shown that some basic clinical information regarding the patient is essential in order to make the maximum and most effective use of diagnostic procedures in the management of the patient. This involves making the correct choice for the type, method, timing and technique of the investigation, and, more importantly, for the radiologist to correctly view the given images towards a correct diagnosis to positively influence the patients management. The radiology request form, when completely and accurately filled by every requesting doctor, goes a long way towards fulfilling this need.

Unfortunately, in a busy setting like the Kenyatta National Hospital, it is common to find non-compliance with even these basic request forms. Inadequately filled, illegibly written forms, and sometimes unjustified requests for procedures make the work of the radiologist in performing and interpreting these images very frustrating and difficult, often adding unnecessary delay to the patient's management. Often, close follow-up may reveal a furious clinician who does not understand the radiologists hesitance in reading a particular

film without the required information.

This study was carried out to determine the frequency with which these omissions occur in filling out radiology request forms, and whether they had any effect on the interpretation of the radiographs.

MATERIALS AND METHODOLOGY:

This was a prospective study that was carried out at the Radiology Department of the Kenyatta National Hospital, Nairobi.

At KNH, X-ray request forms (Appendix I) that are filled in by clinicians from the various departments are kept alongside the film after processing, for reporting by the radiologist.

A total of 491 request forms were randomly selected and analyzed over a three month period from January 2000 to March 2000. The accompanying radiographs were also investigated. All relevant data from the radiology request forms was recorded on the data collection form (Appendix II). It was also noted whether the film requested for was reported by the radiologist, and if not, the reason for not reporting was recorded. Copies of request forms that highlighted findings of this study are included.

ETHICAL AND MEDICOLEGAL CONSIDERATIONS:

All the forms and X-ray films that were investigated in this study belonged to patients for whom X-rays were requested by their respective clinicians as part of their overall management. Inclusion into the study was only after the requested procedure had been performed, hence in no way influencing the management of the patient or exposing him/her to unnecessary radiation.

The X-ray number was used to identify each patient and his/her request form and film, ensuring confidentiality.

The findings were handled by the investigator alone, and were used for the intended purpose of this thesis only.

RESULTS

The total number of cases covered was 491. These patients ranged from 5 weeks to 78 years in age (where age was provided on the request forms). The distribution of these cases by age and sex is shown in the following tables:

TABLE 1

DISTRIBUTION OF CASES BY AGE IN YEARS

| AGE IN YEARS | FREQUENCY | PERCENT |
|---------------------|------------------|----------------|
| <= 5 Years | 73 | 14.9 |
| 6 - 12 Years | 17 | 3.5 |
| 13 - 45 | 174 | 35.4 |
| Above 45 | 63 | 12.8 |
| Not Given | 164 | 33.4 |
| TOTAL | 491 | 100.0 |

TABLE 2**DISTRIBUTION OF CASES BY SEX**

| SEX | FREQUENCY | PERCENT |
|--------------|------------------|----------------|
| Male | 270 | 55.0 |
| Female | 205 | 41.8 |
| Not Given | 16 | 3.3 |
| TOTAL | 491 | 100.0 |

Referring Departments were classified into four categories: private clinics, casualty, general clinics and wards. The majority of patients came from casualty (45.2%) and the least from private clinics (5.3%) as shown in Table 3 below.

TABLE 3**DISTRIBUTION OF CASES BY REFERRING DEPARTMENT**

| DEPARTMENT | FREQUENCY | PERCENT |
|-------------------|------------------|----------------|
| Private Clinics | 26 | 5.3 |
| Casualty | 222 | 45.2 |
| General Clinics | 151 | 30.8 |
| Wards | 92 | 18.7 |
| TOTAL | 491 | 100.0 |

The prevalence of inadequately filled forms was 68.0% that is these were forms in which either one or more of the requested patient details including age, sex, menstrual history and clinical history were missing

TABLE 4

PREVALENCE OF INADEQUATELY FILLED FORMS

| WHETHER ADEQUATELY FILLED | FREQUENCY | PERCENT |
|------------------------------|-----------|---------|
| YES | 157 | 32.0 |
| NO | 334 | 68.0 |
| TOTAL | 491 | 100.0 |

Regarding filling in of the different patient details, as shown in Table 5 overleaf, most of the patients (96.7%) had their sex recorded on the request forms. However, recording of adequate clinical information was only in 53.8% of forms, while only 17 out of a possible 162 forms (10.4%) had LMP filled in.

TABLE 5**PREVALENCE OF RECORDING OF AGE, SEX, LMP AND CLINICAL HISTORY**

| FREQUENCY | AGE | SEX | CL. HX | LMP |
|------------------|----------------|----------------|----------------|----------------|
| GIVEN | 327 (66.6%) | 475 (96.7%) | 264 (53.8%) | 17 (3.5%) |
| NOT GIVEN | 164 (33.4%) | 16 (3.3%) | 227 (46.2%) | 126 (25.7%) |
| N/A | | | | 328 (66.8%) |
| NOT KNOWN | | | | 20 (4.1%) |
| TOTAL | 491 | 491 | 491 | 491 |

This information is summarized in Figure 1 overleaf:

FIGURE 1: PREVALENCE OF RECORDING OF PATIENT

DETAILS

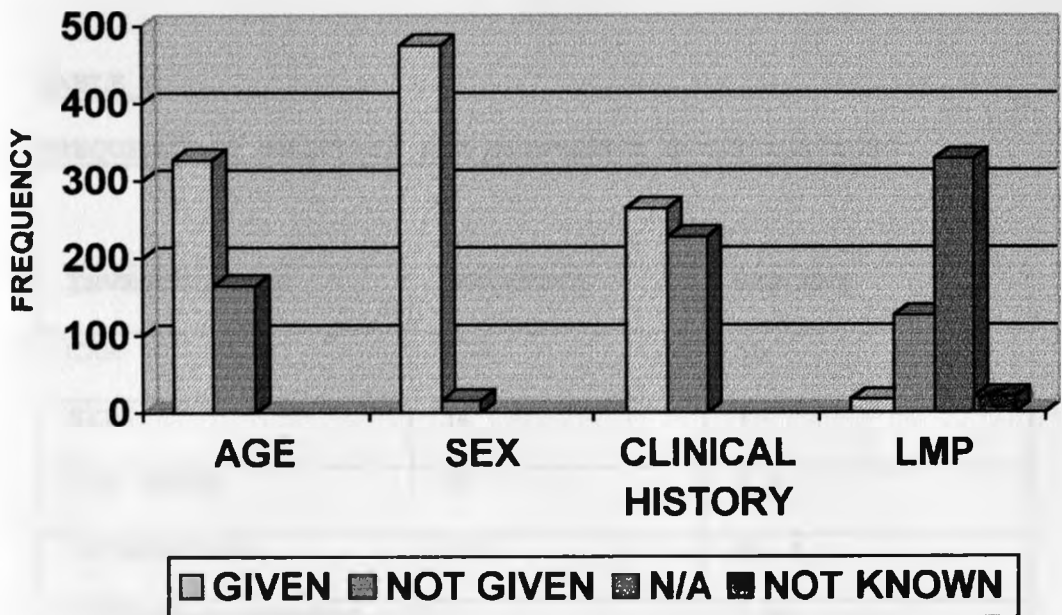


Table 6 below shows the frequency with which different investigations were requested. Chest X-rays were the most frequent (55%) followed by X-rays of the extremities (21.4%) and skull X-rays (7%).

TABLE 6

FREQUENCY OF REQUESTS FOR DIFFERENT INVESTIGATIONS

| INVESTIGATION | FREQUENCY | PERCENT |
|-------------------|-----------|---------|
| CXR | 270 | 55 |
| SXR | 34 | 7 |
| L/S SPINE | 18 | 3.7 |
| EXTREMITIES | 105 | 21.4 |
| PARANASAL SINUSES | 5 | 1.0 |
| PELVIS | 10 | 2.0 |
| TH SPINE | 5 | 1.0 |
| CX SPINE | 7 | 1.4 |
| PN SPACE | 15 | 3.1 |
| ABDOMEN | 10 | 2.0 |
| OTHERS | 12 | 2.4 |
| TOTAL | 491 | 100.0 |

There was a marked difference in filling in of forms by the different departments. Forms referred by private clinics were the least adequately filled (7.7%), while those referred from general clinics had the highest rate of adequate filling in of the various patient details (55%).

TABLE 7

DISTRIBUTION OF ADEQUATELY/INADEQUATELY FILLED FORMS BY REFERRING DEPARTMENTS

| DEPARTMENT | ADEQUATELY FILLED | INADEQUATELY FILLED | TOTAL |
|-------------------|------------------------------|--------------------------------|--------------|
| PRIVATE CLINICS | 2 (7.7%) | 24 (92.3%) | 26 |
| CASUALTY | 35 (15.8%) | 187 (84.2%) | 222 |
| GENERAL CLINICS | 83 (55%) | 68 (45.0%) | 151 |
| WARDS | 37 (40.2%) | 55 (59.8%) | 92 |
| TOTAL | 157 | 334 | 491 |

This information is summarized in Figure 2 overleaf:

**FIGURE 2: DISTRIBUTION OF ADEQUATELY/INADEQUATELY
FILLED FORMS BY REFERRING DEPARTMENT**

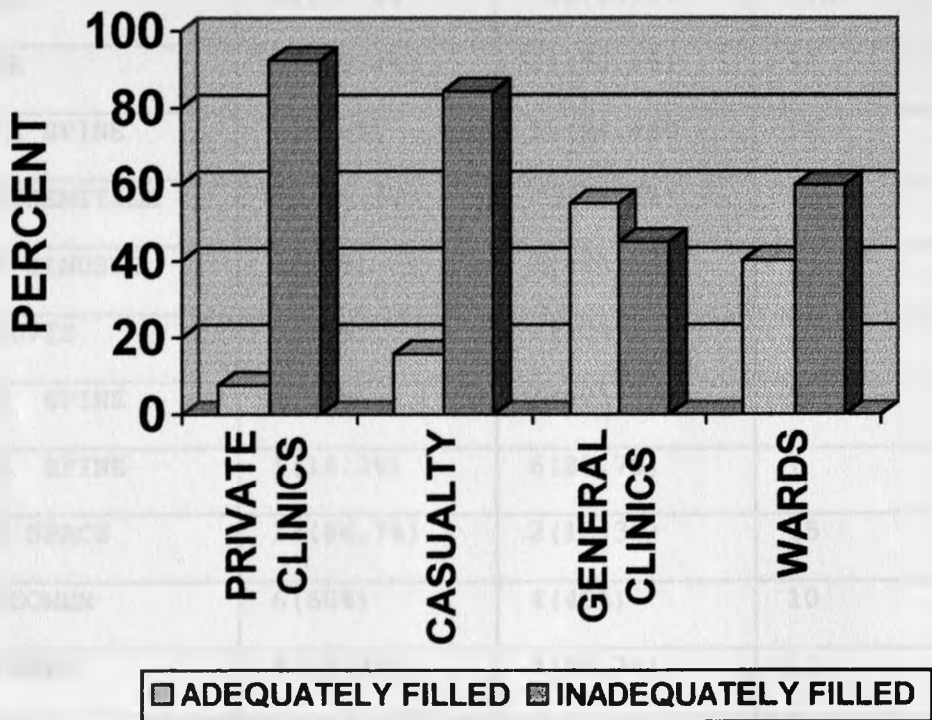


TABLE 8

**DISTRIBUTION OF ADEQUATELY/INADEQUATELY FILLED FORMS BY TYPE
OF INVESTIGATION REQUESTED**

| INVESTIGATION | ADEQUATELY FILLED | INADEQUATELY FILLED | TOTAL |
|----------------------|------------------------------|--------------------------------|--------------|
| CXR | 82 (30.4%) | 188 (69.6) | 270 |
| SXR | 10 (29.4%) | 24 (70.6%) | 34 |
| L/S SPINE | 1 (5.6%) | 17 (94.4%) | 18 |
| EXTREMITIES | 33 (31.4%) | 72 (68.6%) | 105 |
| PN SINUSES | 3 (60%) | 2 (40%) | 5 |
| PELVIS | 3 (30%) | 7 (70%) | 10 |
| TH SPINE | 1 (20%) | 4 (80%) | 5 |
| CX SPINE | 1 (14.3%) | 6 (85.7%) | 7 |
| PN SPACE | 13 (86.7%) | 2 (13.3%) | 15 |
| ABDOMEN | 6 (60%) | 4 (40%) | 10 |
| OTHERS | 4 (33.3%) | 8 (66.7%) | 12 |
| TOTAL | 157 (32%) | 334 (68%) | 491 |

As table 9 below shows, provision of adequate clinical history was again affected by the referring department. Referrals from private clinics had clinical history given in only 23.1% of cases, while the greater proportion of referrals from general clinics had adequate clinical information provided (76.8%)

TABLE 9

DISTRIBUTION OF RECORDING OF CLINICAL HISTORY BY REFERRING DEPARTMENT

| DEPARTMENT | CL. HX GIVEN | CL. HX NOT GIVEN | TOTAL |
|-------------------|-------------------------|-----------------------------|--------------|
| PRIVATE CLINICS | 6 (23.1%) | 20 (76.9%) | 26 |
| CASUALTY | 80 (36.0%) | 142 (64.0%) | 222 |
| GENERAL CLINICS | 116 (76.8%) | 35 (23.2%) | 151 |
| WARDS | 62 (67.4%) | 30 (32.6%) | 92 |
| TOTAL | 264 (53.8%) | 227 (46.2%) | 491 |

TABLE 10

**DISTRIBUTION OF RECORDING OF CLINICAL HISTORY BY INVESTIGATION
REQUESTED**

| INVESTIGATION | CL. HX GIVEN | CL. HX NOT GIVEN | TOTAL |
|----------------------|---------------------|-----------------------------|--------------|
| CXR | 144 (53.3%) | 126 (46.7%) | 270 |
| SXR | 15 (44.1%) | 19 (55.9%) | 34 |
| L/S SPINE | 5 (27.8%) | 13 (72.2%) | 18 |
| EXTREMITIES | 59 (56.2%) | 46 (43.8%) | 105 |
| PN SINUSES | 5 (100.0%) | - | 5 |
| PELVIS | 5 (50.0%) | 5 (50.0%) | 10 |
| TH SPINE | 3 (60.0%) | 2 (40.0%) | 5 |
| CX SPINE | 1 (14.3%) | 6 (85.7%) | 7 |
| PN SPACE | 14 (93.3%) | 1 (6.7%) | 15 |
| ABDOMEN | 7 (70.0%) | 3 (30.0%) | 10 |
| OTHERS | 6 (50.0%) | 6 (50.0%) | 12 |
| TOTAL | 264 (53.8%) | 227 (46.2%) | 491 |

Despite the high percentage of inadequately filled forms, the majority of films were reported as shown in Table 11 below:

TABLE 11

FREQUENCY OF REPORTING OF RADIOGRAPHS

| REPORTED | FREQUENCY | PERCENT |
|-----------------|------------------|----------------|
| YES | 448 | 91.8 |
| NO | 43 | 8.8 |
| TOTAL | 491 | 100.0 |

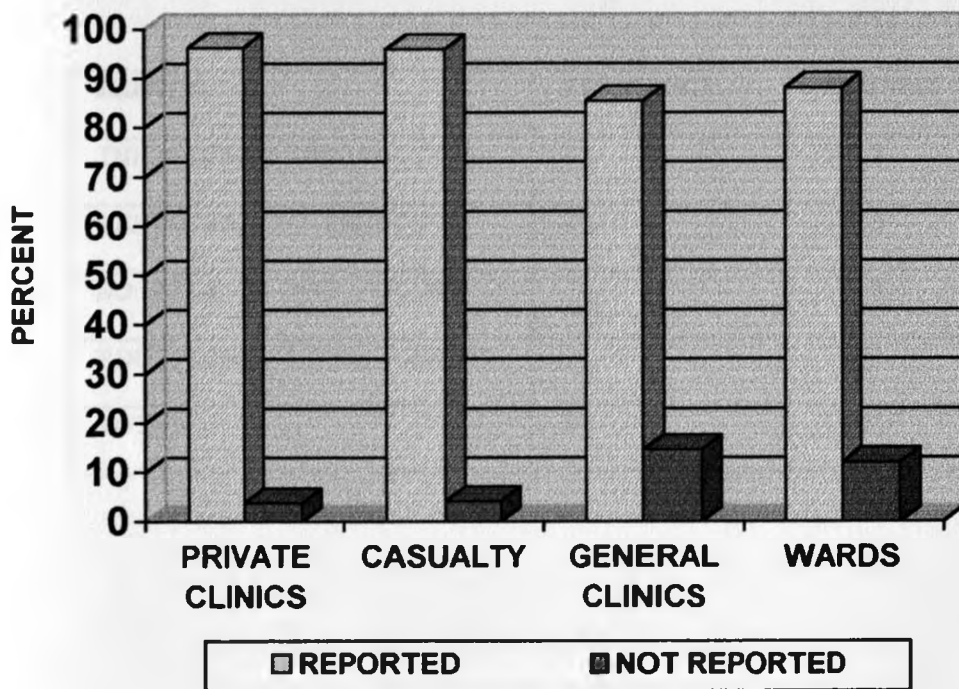
The majority of films requested from private clinics were reported, as Table 12 shows below. On the other hand, referrals from general clinics had the poorest rate of reporting of radiographs.

TABLE 12

**DISTRIBUTION OF REPORTED/ UNREPORTED FILMS BY REFERRING
DEPARTMENT**

| DEPARTMENT | REPORTED | NOT REPORTED | TOTAL |
|-------------------|-----------------|---------------------|--------------|
| PRIVATE CLINICS | 25 (96.2%) | 1 (3.8%) | 26 |
| CASUALTY | 213 (95.9%) | 9 (4.1%) | 222 |
| GENERAL CLINICS | 129 (85.4%) | 22 (14.6%) | 151 |
| WARDS | 81 (88%) | 11 (12%) | 92 |
| TOTAL | 448 | 43 | 491 |

**FIGURE 3: DISTRIBUTION OF REPORTED/UNREPORTED FILMS BY
REFERRING DEPARTMENT**



Among the reasons for not reporting radiographs, radiographic faults were the commonest reasons (46.5%) followed by inadequate patient information (30.2%).

TABLE 13

REASONS FOR NOT REPORTING RADIOGRAPHS

| REASON | FREQUENCY | PERCENT |
|-------------------------|------------------|----------------|
| INADEQUATE INFORMATION | 13 | 30.2 |
| RADIOGRAPHIC FAULTS | 20 | 46.5 |
| NO FILM IN THE FOLDER | 7 | 16.3 |
| ADDITIONAL VIEWS NEEDED | 3 | 7.0 |
| TOTAL | 43 | 100.0 |

There was a high rate of reporting of both adequately and inadequately filled forms-91.7% and 91.1% respectively, as shown in Table 14 below:

TABLE 14

REPORTING OF ADEQUATE/ INADEQUATELY FILLED FORMS

| | REPORTED | NOT REPORTED | TOTAL |
|------------------------|-----------------|---------------------|--------------|
| ADEQUATELY FILLED | 144 (91.7%) | 13 (8.3%) | 157 |
| INADEQUATELY FILLED | 304 (91.1%) | 30 (8.9%) | 334 |
| TOTAL | 448 | 43 | 491 |

DISCUSSION

As pointed out in the introduction, the radiology request form acts as the link between clinician and radiologist in patient management, and has been shown to aid the radiologist in correctly interpreting radiographs when filled with adequate clinical information. Poor compliance with filling in of these forms by clinicians has however been a common matter of concern.

This study found that 68% of forms were inadequately filled. These had one or more of the patient details missing. Out of 491 forms analyzed, age was given in 66.6%, sex was given in 96.7%, while adequate clinical history was provided on only 53.8% of forms. These results are comparable with other studies. Wambugu M.N in her study " 'The Ten day rule' and its implementation at KNH" found that of 1062 forms investigated, 74.3% had correct age filled (10) while in 1996, Martinez found insufficient (56%) filling in of clinical history and provisional diagnosis sections (9).

Despite the well-known implications of irradiating a potentially pregnant female, and therefore, the importance of knowing and providing information about the LMP to the radiology staff, this appears to be one section that continuously suffers from the neglect of the clinicians. In

1982, Wambugu found in her study (10) that only 2.6% of women had their LMP indicated on the request form. Since Kenyatta National Hospital's X-ray forms (Appendix III) did not then have a specific section requesting the menstrual history, it was recommended that a space be included for menstrual history and to this end, a new form bearing this change was proposed. This proposal was eventually implemented (Appendix I) and since then clinicians have been required to fill in the LMP for a woman in reproductive age being sent for any radiological investigation. It is sad to note that eighteen years later, there is little if any change in the clinicians' compliance with this section. This study found that, of 491 forms investigated, out of which 163 were potentially in their reproductive age (the other 328 were either males, or out of the reproductive age), only 17 (10.4%) had the correct LMP filled in. The dangers of this are all too evident, as illustrated by the case below.

Form A1 belongs to a female patient for whom a lumbosacral and hip X-ray were taken as requested (for investigation of lower back pain), but with no LMP included on the form. When the same patient was again sent with a request for a radiculogram, the investigator found, upon inquiring, that she actually had a history of amenorrhoea of 8 weeks and four days.

A pelvic ultrasound was done and confirmed the presence of a gestational sac with cardiac activity seen.

Under normal circumstances, such a patient would have most likely undergone the fluoroscopy without knowing the terrible effects it may have caused on the foetus. Such effects are only too well known: prenatal death, neonatal death, congenital abnormalities, malignancy induction, general impairment of growth, genetic effects, and mental retardation are some of the better known consequences (19).

"During the period of major organogenesis, from the second through the tenth week, skeletal and organ abnormalities can be induced, andabnormalities of the central nervous system can be observed if the pregnancy is carried to term". The first trimester, which is the most sensitive period, is the one of greater concern "because an X-ray exposure often occurs when pregnancy is unknown"(20).

Due to the great dangers of irradiating a pregnancy in the first trimester, it must be emphasized time and again that all females in their reproductive age have their LMP indicated when sent for a radiological investigation. The radiographers and radiologists in turn, should consider it their responsibility not to carry out a particular investigation until they are satisfied about the menstrual status of a

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particular patient, and should reserve the right to refuse to perform a particular procedure if they feel the potential harm to the foetus outweighs the benefit to the expectant mother.

The Radiology Department of Kenyatta National Hospital receives patients from various sources. The majority of these are from the casualty, wards and the general clinics while a small proportion (5.3% in this study) are referred from private clinics. When considering the distribution of inadequately filled forms from the various departments (Table 7), it is interesting to note that it is the private referrals which have the greatest percentage of inadequately filled forms (92.3%), followed by the casualty (84.2%), while referrals from the general clinics have the least proportion of inadequately filled forms (45%). This is true for the recording of clinical history as well. Table 9 shows that doctors from private clinics are the poorest providers of clinical history for their patients (23.1% history given) whereas patients referred from the general clinics have the highest percentage of adequate clinical history on their forms (76.8%). These findings are statistically significant, (21) meaning that being a private patient is associated with a greater chance of having an inadequately filled form or having no clinical history provided on the request form.

It would be expected that in a busy hospital like KNH, casualty doctors would have the most acceptable excuses for not providing adequate patient information on the forms- excessive workload, emergency situations, and a general time constraint being among the common reasons for this. On the other hand, private doctors are generally in a much more relaxed and accommodating environment when dealing with patients and would therefore be expected to have greater access to, and hence to provide more patient information. Our results are contrary to this, and this may be due to the reason that private patients are often "over-investigated" by their doctors. This is both in keeping up with the patients' expectations of adequate management by their private clinicians (Many patients do not feel satisfied until they have undergone several tests, some of which may be totally unnecessary) and in continuing the demand for services (radiology being one of them) which provides a source of income to many private settings.

As a result of this, a chain of tests, including radiological procedures, is therefore carried out as part of the 'work-up' that is often done on such patients.

Since many of these patients are heading for senior consultants eventually, the referring clinician who requests the investigation often has little knowledge about, and little

interest regarding such patients. On the other hand, many of these patients genuinely have no supporting evidence in their signs and symptoms necessitating a particular investigation. Hence, unnecessary examinations, and inadequate knowledge regarding the patients may be the causes of such poorly filled request forms.

Of the various investigations that were requested for, chest X-rays formed the majority(55%) followed by X-rays of the extremities(21.4%) and Skull X-rays(7%) as shown in Table 6. Table 8 shows the distribution of adequately filled forms with the requested investigation. Requests for X-rays of the postnasal space were the most adequately filled (86.7%) followed by requests for X-rays of paranasal sinuses (60%) and abdomen (60%). Recording of clinical history follows a similar trend; requests for paranasal sinuses X-rays were accompanied by 100% adequate clinical history, followed by those for postnasal space. (Table 10). In both these Tables, it is requests for X-rays of the spine (lumbosacral spine, cervical spine, and thoracic spine) which have the least adequately filled forms and the least adequate clinical history provided. Again, this is an interesting, but not unexpected finding. It is well known that diagnosing and treating back disorders is a challenging task, and this is an area which most general

physicians and surgeons have difficulty in dealing with. More often than not, the patients also give vague histories and non-specific clinical symptoms. Hence, it is not unusual to find inadequate history and clinical findings on such forms. The examination of the spine and nervous system is complicated, and the radiologic evaluation and diagnosis of low back pain and sciatica is considered, in well-developed orthopaedic centres, a specialty in itself. However, since there is "no correlation between degenerative changes on radiographs and clinical symptoms and signs", it is common to find patients with "severe degenerative changes on radiographs and minimal to no symptoms, and conversely patients with marked symptoms and normal radiographs"(22). It is obviously dangerous to depend entirely on the radiologist's opinion of the spinal X-ray to base one's diagnosis and treatment. This is bound to happen, when, having no patient information, the radiologist reports any abnormality showing on the film as the possible cause of the symptoms and pathology.

Since pain, and in particular low back pain, has been found to have a strong 'functional' component in addition to the 'organic' component, the outcome of this is obvious ".....on treating pathologies through approaches like surgery, the patients continue to maintain their pain complaints,.....or to

develop chronic patterns of pain resistant to another series of treatments"(23).

Despite the high prevalence of inadequately filled forms (68%) and the poor provision of clinical history on forms (53.8% history given), the study found that the majority (91.8%) of radiographs were actually reported. (Table 11). Of the few films that were not reported, the majority (46.5%) were sent back for repeats due to radiographic faults. Only 13 (30.2% of unreported films) were referred back to the clinicians due to inadequate patient information (Table 13). This says a lot for the commitment and dedication of the radiologists who continue to dutifully read and report films despite the obvious difficulty due to such inadequately filled forms and often total absence of clinical history.

Why would radiologists at KNH continue to report films accompanied by illegible, poorly filled forms (Examples of which are Forms A5-A8), while their colleagues in the wards, casualty and private practice continue to ignore requests for adequate patient information on these forms? Often the reason is that this is done entirely in the interest of the patients. Knowing the time it takes to get a second appointment with a

doctor, or the delay in management that would be caused by sending a form back, most radiologists consider the benefit to the patient to be greater, and his/her management quickened if they report the films regardless of the information available to them. Sometimes the radiologist opts to get the needed clinical information directly from the patient. At this juncture the radiologist may request more investigations to complete the report, but this is complicated by the fact that every film taken must be paid for. This is an issue that must be addressed to avoid delays in diagnosis and hence patient management.

Reporting films regularly without the necessary patient information may be acceptable if the films radiologists were dealing with were all obvious trauma and fractures; however this is not the case. Radiologists come across many 'subtle abnormalities' and 'ambiguous lesions' on films when reporting. These can only be reported correctly when additional supporting information about the clinical picture is available. "A finely tuned interpretation of the radiograph in the context of the history and physical signs will often provide a high index of suspicion to the most likely diagnoses or at least a short list of possibilities." (24)

The worries of negligence and malpractice in medicine, although unknown to most African countries a few years ago,

are becoming a matter for concern nowadays. There may be medicolegal implications associated with an incorrect diagnosis or reporting of a film. It is therefore high time that doctors, and radiologists in particular, became aware of this. Instead of enhancing the management of a particular patient by reporting a certain film, (however inadequate the accompanying form), this practice may be harming the patients management if certain pathology or disease is overlooked or unreported, at the same time placing the radiologist in a position liable to facing a malpractice suite. (25)

On comparing the reported films from the different departments, (Table 12) it is found that films requested by doctors from private clinics have the highest rate of reporting (96.2% reported), while those from the general clinics have the lowest rate (85.4% reported). This difference is again statistically significant (21), which means that the film belonging to a private patient has a significantly greater probability of being reported than that of a patient from the general clinics, wards or casualty. Keeping in mind that it is the private patients that have the least adequately filled forms, and the poorest clinical history, one may wonder why it is *their* films that are reported the most.

One reason for this may be that since most of these patients are investigated on a 'routine' basis, and their films show little, if any pathology, it is simpler for the radiologist to report them as 'normal' rather than sending them back for further information. In addition to this, the total absence of any patient information may result in many films being reported on a 'routine' basis as well, with little attention being paid to looking for any hidden pathologies, probing for further information or requesting further views/procedures or repeats to complement a particular diagnosis. The dangers of this have been expounded at length above. This can be further understood by noting that it is films from the general clinics, which usually have the most adequate patient information and clinical history, that have the poorest rate of reporting. It may be derived, therefore, that a well-written form with adequate patient information and clinical history may gain the radiologist's attention towards a certain pathology or possible diagnosis. This may not be easy to interpret without first obtaining further clinical or radiologic information. Although this study has not investigated the actual rate of reporting of certain pathologies in the presence or absence of clinical information, it would be interesting to follow up these cases

and find out whether the unreported films sent back for further patient information did actually result in a diagnosis that would have been missed out if the films had been reported at the initial reading. Swensson et al reported this when they found an increase in percentage of reporting of true abnormalities under 'focused search conditions'. They discuss that such conditions may be given in a clinical setting by the patient's history, clinical symptoms or the interest of the physician requesting the examination (14).

In addition to the results shown in the various Tables and discussed above, the following outstanding findings regarding filling in of these forms have been noted:

- Many requests for radiologic procedures were unjustified or irrelevant to the suspected diagnosis. This may be caused by the clinicians' negligence or lack of knowledge about the appropriate radiologic techniques/views for a particular investigation. Examples of these are requests for Waters view for a suspected pituitary adenoma (Form A2), pelvis, skull and chest X-rays for age assessment (Form A3) and X-ray of the left hand for a leg ulcer (Form A4)

- Some forms did not only have inadequate patient details, but were practically illegible. Others were completely missing of any clinical information. The use of unconventional abbreviations for suspected diagnoses (TOF for Tetralogy of Fallot/tracheo-oesophageal fistula, CC for chronic cough, COM for? Chronic osteomyelitis, TOCS for ?) was also a common encounter. Examples of these are shown in Forms A5, A6, A7 and A8.

CONCLUSION

This study found that the rate of filling in of patient details on X-ray request forms by clinicians is very poor. The menstrual history, although extremely important for female patients undergoing radiological examinations, was given in a very small percentage of patients. In addition to this, the majority of forms are sent with little or inappropriate clinical history.

These findings are commonest with films requested by doctors from private clinics, while patients referred from general clinics have better filled in forms and more adequate clinical history provided.

Despite the high percentage of inadequate forms and poor clinical information, the majority of films are reported by the radiologists. Of those that are not reported, most are sent back for repeats due to radiographic faults.

RECOMMENDATIONS

This study investigated the availability of patient information to the radiologists, and its effects on reporting of radiographs. Since the forms investigated were restricted to those requesting for plain radiographs only, the following recommendations are being drawn:

- 1) A follow-up study should be carried out to investigate the effects caused by the presence or absence of clinical information on the actual reporting of abnormalities on radiographs. In addition to plain radiographs, these effects should be applied to other radiodiagnostic procedures as well, including fluoroscopy and computed tomography.

- 2) A consensus should be reached amongst the various departments regarding the use of accepted abbreviations for clinical diagnoses and requesting investigations or procedures. Once agreed upon, these abbreviations could then be applied to the various request forms in use around the hospital.

- 3) The dangers of radiation (even scatter radiation, which many physicians appear to be unaware of) and in particular to a potentially pregnant female, should be communicated to the clinicians by reminders through memos and in medical conferences and meetings. The use of posters in different languages, (especially outside the X-ray department) to draw patients' attention should also be considered. The current request form, which only shows the date of reporting of the film, should be revised to include a date for requesting the examination, which is usually when the LMP is also filled in. Hence, any delay between requesting and performing the procedure can be taken into account when considering the LMP.

- 4) Clinicians should be informed of the various diagnostic procedures and techniques in current use, as well as their applications, and should be encouraged to discuss with radiologists regarding the most appropriate investigation for a particular disease.

5) Clinicians and radiologists should be made aware of current concerns regarding medicolegal issues. Adequate filling of patient information should be stressed. Where, as has been pointed in previous studies carried out at KNH (29,10) the information is considered inadequate, the referring clinician should be consulted rather than perform a procedure or report a film that could adversely affect the management of the patient.

SAMPLE FORMSFORM A1

A PATIENT WITH AMENORRHOEA OF OVER EIGHT WEEKS SENT WITH A REQUEST FOR A RADICULOGAM. ULTRASOUND SHOWED A GESTATIONAL SAC; CARDIAC ACTIVITY WAS SEEN.



KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

| | | | | | |
|--|-------|---------|-------------------|--------------------------------|--------------|
| TYPE OF INVESTIGATION REQUESTED <i>Radiculogram</i> | | | | NAME <i>ANN MUTHONI</i> | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX <i>F</i> | AGE <i>A</i> |
| APPOINTMENT <i>18/5/00</i> | | | TIME <i>8 AM</i> | HOSPITAL No. <i>0656658</i> | |
| L.M.P. <i>17/7/99</i> | | | IF PERIODS MISSED | X-RAY No. <i>+ 25753/00</i> | |
| IS EXAM STILL NECESSARY.....(Yes / No.) | | | | REPORT TO BE SENT TO <i>6D</i> | |
| BRIEF CLINICAL SUMMARY <i>Lumbosacral osteoarthritis</i> <i>7. p. 17</i> | | | | PREVIOUS X-RAY No. | |
| REQUESTING DOCTOR (Print Name) <i>A. Muthoni</i> SIGNATURE <i>[Signature]</i> | | | | OFFICIAL USE ONLY | |
| RADIOGRAPHER NAME | | | | No. of Films | Charges |
| DATE..... | | | | Comments | |

18/5/00: Pts Lmp 20/3/00.

9:20am Please do u/s to establish G/S

*9:35 am an ultra sound was done
an early gestational sac was
seen.*

*9:45am: Radiculogram not done as pt has
an early G/S (7wks by CRU)
Cardiac activity seen.*

*7am
18/5/00: BP - 110/70 mmHg*

FORM A2

REQUEST FOR A SKULL X-RAY, WATERS VIEW, IN A PATIENT SUSPECTED OF HAVING A PITUITARY ADENOMA. DID THE PHYSICIAN ACTUALLY MEAN 'PITUITARY FOSSA VIEW' ?



W/No 111975 - 708/-
KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

| | | | | | |
|---|-------|------------------------------|-------------------|--|---------------------|
| TYPE OF INVESTIGATION REQUESTED <i>SX ray - Waters view</i> | | | | NAME <i>Sylvia Tesica</i> | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX <i>F</i> | AGE <i>15 years</i> |
| APPOINTMENT | | | TIME | HOSPITAL No. <i>0367543</i> | |
| L.M.P. <i>March last year</i> | | | IF PERIODS MISSED | X-RAY No. <i>836/00</i> | |
| IS EXAM STILL NECESSARY | | | (YES / No.) | | |
| BRIEF CLINICAL SUMMARY <i>20 Ammonia with poor vision 14/20. Pituitary adenoma</i> | | | | REPORT TO BE SENT TO <i>ADPC (18)</i> | |
| | | | | PREVIOUS X-RAY No. | |
| OFFICIAL USE ONLY | | | | | |
| REQUESTING DOCTOR (Print Name) <i>K4-8A</i> | | SIGNATURE <i>[Signature]</i> | | No. of Films | Charges |
| RADIOGRAPHER NAME | | | | Comments | |
| DATE..... | | | | | |

FORM A3

REQUEST FOR MULTIPLE X-RAYS (PELVIS, SKULL AND CHEST) IN A PATIENT REQUIRING AGE ASSESSMENT.



KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

7.5
7.5
27/5
27/5

| | | | | | |
|--|-------|--------------------|----------|--------------------------------------|----------|
| TYPE OF INVESTIGATION REQUESTED <i>pelvis x-ray</i> | | | | NAME <i>VICTOR OMONDI OENYOLA</i> | |
| <i>SXR - AP</i> <i>CXR - PA</i> | | | | <i>left both femur x-ray</i> | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX | AGE |
| | | | | <i>M</i> | <i>A</i> |
| APPOINTMENT | | | TIME | | |
| | | | | | |
| L.M.P. | | | | IF PERIODS MISSED | |
| | | | | | |
| IS EXAM STILL NECESSARY | | | | (YES / NO.) | |
| | | | | | |
| BRIEF CLINICAL SUMMARY | | | | X-RAY No. | |
| <i>Age Assessment</i> | | | | <i>4026/02</i> | |
| | | | | REPORT TO BE SENT TO | |
| | | | | <i>CAS</i> | |
| | | | | PREVIOUS X-RAY No. | |
| | | | | | |
| OFFICIAL USE ONLY | | | | | |
| REQUESTING DOCTOR (Print Name) | | SIGNATURE | | No. of Films | |
| <i>Urisa</i> | | <i>[Signature]</i> | | | |
| RADIOGRAPHER NAME | | | | Charges | |
| | | | | | |
| DATE..... | | | | Comments | |
| | | | | | |

FORM A4

REQUEST FOR X-RAY OF THE CHEST AND LEFT HAND IN A PATIENT WITH LEG ULCERS.



KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

No. 018380-9057

| | | | | |
|---|-------|------------------------------|--|--|
| TYPE OF INVESTIGATION REQUESTED <i>c x r @ hand xray</i> | | | | NAME <i>Michael Njoroge</i> |
| WALKING | CHAIR | TROLLEY | PORTABLE <input checked="" type="checkbox"/> | SEX <i>m</i> AGE <i>25</i> |
| APPOINTMENT | | | TIME | HOSPITAL NO. <i>063354</i> |
| L.M.P. IF PERIODS MISSED | | | | X-RAY NO. <i>9535700</i> |
| IS EXAM STILL NECESSARY (YES / NO.) | | | | REPORT TO BE SENT TO <i>SA</i> |
| BRIEF CLINICAL SUMMARY <i>gangrene leg ulcers</i> | | | | PREVIOUS X-RAY NO. |
| <i>No septic emboli</i> | | | | OFFICIAL USE ONLY |
| REQUESTING DOCTOR (Print Name) | | SIGNATURE <i>[Signature]</i> | | No. of Films |
| RADIOGRAPHER NAME <i>DA KATIUKI</i> | | DATE <i>22/2/00</i> | | Charges |
| | | | | Comments <i>Buy Pt for x-ray left.</i> |

CTR not in the folder
[Signature]

The history and the requested x-ray do not correspond. Please specify numbers
25702/2000

23/2/00
38

FORM A5

PATIENT REFERRED BY A PRIVATE CLINICIAN. THERE IS ABSOLUTELY NO CLINICAL INFORMATION ON THE FORM.



**UNIVERSITY OF NAIROBI
FACULTY OF MEDICINE
DEPARTMENT OF DIAGNOSTIC RADIOLOGY**

2772

P.O. Box 19676,
Tel/Fax: 724722
Nairobi

REQUEST FORM FOR X-RAY, ULTRASOUNDS, C.T. or M.R.I. EXAMINATION

NAME OF PATIENT Munyao Mutulya AGE: 8yrs SEX: M

Examination Required: LA Humerus

Any known hypersensitivity Yes No

If yes give details:

Brief clinical history and provisional diagnosis

Previous X-rays Yes No

P.....

e of requesting Doctor

ature Date 25-1-2000

Radiographers Use:

X-ray No: 887

Report sent to: _____

No of Films Size

| No of Films | Size |
|-------------|------|
| | |
| | |
| | |

Charges

Comments:

Name of Radiographer:

Signature Date

RADIOLOGIST REPORT

LA humerus X-ray

Fat Pad sign is positive
indicating injury, but there
is no supra condylar fracture

logist Name

Signature

Date

Shawon

[Signature]

FORM A6

AN EXAMPLE OF A NON-STANDARD ABBREVIATION. THE CLINICAL HISTORY SAYS "COM" WHICH IS SUPPOSED TO MEAN CHRONIC OSTEOMYELITIS.



**KENYATTA NATIONAL HOSPITAL
X-RAY REQUEST/REPORT FORM**

K.N.H. 206

| | | | | | |
|---|-------|---------|-----------|---|---------------|
| TYPE OF INVESTIGATION REQUESTED <i>X-ray 4 femur L^{AD} distal</i> | | | | NAME <i>DORCA NAFULA</i> | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX <i>F</i> | AGE <i>12</i> |
| APPOINTMENT | | | TIME | HOSPITAL No. <i>059 2127</i> | |
| L.M.P. IF PERIODS MISSED | | | | X-RAY No. <i>424</i> | |
| IS EXAM STILL NECESSARY (YES/NO) | | | | REPORT TO BE SENT TO <i>Ortho Clinic</i> | |
| BRIEF CLINICAL SUMMARY: <i>COM</i> | | | | PREVIOUS X-RAY No. | |
| OFFICIAL USE ONLY | | | | | |
| REQUESTING DOCTOR (Print Name) | | | SIGNATURE | NO. OF FILMS | CHARGES |
| RADIOGRAPHER NAME | | | | COMMENTS: | |
| DATE..... | | | | | |

FORM A7

ANOTHER EXAMPLE OF A NON-STANDARD ABBREVIATION. IN THIS CASE, THE RADIOLOGIST COULD NOT UNDERSTAND WHAT "TOCS" WAS SUPPOSED TO MEAN!

R/100.6087/5 = 520/10



KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

| | | | | |
|------------------------------------|-------|-------------------|----------|--|
| TYPE OF INVESTIGATION REQUESTED | | | | NAME |
| Thoracic Inlet \leftarrow AP Lat | | | | Eunice Oguta |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX <input checked="" type="checkbox"/> F AGE 22 |
| APPOINTMENT | | TIME | | HOSPITAL No. 0630527 |
| L.M.P. | | IF PERIODS MISSED | | X-RAY No. X-1314/00 |
| IS EXAM STILL NECESSARY | | (YES / NO.) | | REPORT TO BE SENT TO Oguta an |
| BRIEF CLINICAL SUMMARY | | | | PREVIOUS X-RAY No. |
| TOCS (RT) | | | | OFFICIAL USE ONLY |
| REQUESTING DOCTOR (Print Name) | | SIGNATURE | | No. of Films |
| Oguta | | [Signature] | | 15x6 2 |
| RADIOGRAPHER NAME | | DATE | | Comments |
| [Signature] | | [Signature] | | |

FORM A8

HERE THE CLINICAL HISTORY IS PRACTICALLY ILLEGIBLE. IS IT SUPPOSED TO READ "METATARSALS" OR "METASTASIS"?

PIN 530198 = 5507



KENYATTA NATIONAL HOSPITAL

KNH 206

X - RAY REQUEST / REPORT FORM

| | | | | | |
|---|-------|---------|-------------------|------------------------------------|--------------|
| TYPE OF INVESTIGATION REQUESTED (LT) foot < no cut | | | | NAME David Ki'ong'o | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX M | AGE A |
| APPOINTMENT | | | TIME | HOSPITAL NO. 02 85824 | |
| L.M.P. | | | IF PERIODS MISSED | X-RAY No. 8813/00 | |
| IS EXAM STILL NECESSARY | | | (YES / No.) | REPORT TO BE SENT TO Dr/ka. | |
| BRIEF CLINICAL SUMMARY Metatarsals | | | | PREVIOUS X-RAY No. | |
| OFFICIAL USE ONLY | | | | | |
| REQUESTING DOCTOR (Print Name) | | | SIGNATURE | NO. of Films | Charges |
| RADIOGRAPHER NAME | | | DATE | Comments | |

22/2/2000 Janu films. No date, no side marker. Please repeat. Dr. inf.

24/2/2000 repeated by Murgai

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APPENDIX I

A COPY OF KENYATTA NATIONAL HOSPITAL'S X-RAY REQUEST FORM


KENYATTA NATIONAL HOSPITAL
X-RAY REQUEST/REPORT FORM

K.N.H. 206

| | | | | | |
|---|-------|-----------|----------|----------------------|---------|
| TYPE OF INVESTIGATION REQUESTED | | | | NAME | |
| WALKING | CHAIR | TROLLEY | PORTABLE | SEX | AGE |
| APPOINTMENT | | | TIME | HOSPITAL NO. | |
| L.M.P. IF PERIODS MISSED | | | | X-RAY NO. | |
| IS EXAM STILL NECESSARY (Yes/No) | | | | REPORT TO BE SENT TO | |
| BRIEF CLINICAL SUMMARY: | | | | PREVIOUS X-RAY NO. | |
| | | | | OFFICIAL USE ONLY | |
| | | | | | |
| REQUESTING DOCTOR (<i>Print Name</i>) | | SIGNATURE | | NO. OF FILMS | CHARGES |
| RADIOGRAPHER NAME | | | | COMMENTS: | |
| DATE | | | | | |

RADIOLOGIST NAME

SIGNATURE

DATE

DATA COLLECTION FORM

KEY TO DATA FORM-APPENDIX II

Age: Figures[yr/mnt], If not given=NIL, If given as A/Adult=A

Sex: 1=Male, 2=Female, 3=Not Given

LMP: 1=Given, 2=Not Given, 3=Not applicable, 4=Not Known

Missed Period: 1=Yes, 2=No

Investigation: 1=CXR, 2=SXR, 3=L/S Spine, 4=Extremities[Specify], 5=PN Sinuses

6=Pelv, 7=Th. Spine, 8=Cx Spine, 9=PN Space, 10=Abdomen, 11=Others[Specify]

Cl.Hx: 1=Adequate, 2=Inadequate

Adequately Filled: 1=Yes, 2=No

Findings: 1=Not reported(specify), 2=reported(Normal/Pathology-specify)

Radiologists Opinion: 1=satisfied, 2=Prompt/probe for further information, 3=Other investigations suggested

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APPENDIX III

A COPY OF THE OLDER VERSION OF KNH'S X-RAY REQUEST FORM WHICH DID NOT HAVE ROOM FOR THE LMP

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| | | | |
|---|-------------------------|-----------------------|---------------|
| X-ray Request Report Form | | NAME | NUMBER |
| Walking Chair Trolley Portable | | Wanjouu Kang'ethe | 72256 |
| Appointment: | Date: | ADDRESS | AGE SEX |
| Time: | | | 24 yrs F |
| TYPE OF INVESTIGATION REQUESTED: | | REPORT TO BE SENT TO: | |
| X-ray Pelvis \leftarrow AP \leftarrow Lateral | | FR | |
| X-ray Number: 72609 | | LMP 30/1/80 | |
| IS PATIENT ENTITLED TO A FREE X-RAY: YES | | | |
| HAS PATIENT BEEN PREVIOUSLY X-RAYED: YES/NO | | | |
| PROVISIONAL DIAGNOSIS: ? OA | | NUMBER | |
| CLINICAL SUMMARY: (Does patient suffer from any allergy or sensitivity to iodine) | | | |
| Painful @ Hip 3/12. No h of trauma ok No swelling in tenderness slight limitation of movement | | | |
| DOCTOR'S NAME: J. Mboriwe | | TIME: | DATE: 6/12/80 |
| SIGNATURE: [Signature] | | | |
| X-RAY REPORT: | | | |
| X-ray Pelvis | | | |
| No markers on the film. | | | |
| No bone lesion seen | | | |
| hip joint spaces appear normal. | | | |
| [Signature] | | | |
| 21/1/81 | | | |
| X-ray Investigation | Radiologist's Signature | Date | Time |

Please report -