



IFHIMA
International Federation of
Health Information Management Associations

Education Module for Health Record Practice

Module 8 - Planning a Health Record Department

Health record officers are acutely aware of the need for proper facilities for the efficient and effective operation of the health record services. In fact, it has been recognised for some time that architects, health facility planners, administrators and heads of departments, should plan for construction of specialty areas together, as a team. Although in many instances this has in fact happened, for a number of departments there has been little participation by health record officers (MROs). The reasons for non-participation are varied and range from the MROs not being consulted or involved because the planning authorities do not realise their ability in this area, or the MRO has not been interested or has felt incapable of involvement in such a daunting task.

OBJECTIVES:

At the conclusion of this unit participants should be able to:

1. explain the functions of a health record department for planning purposes
2. identify the most suitable place for a health record department
3. calculate space required for defined functions, staff and health record storage
4. communicate effectively with architects and hospital administration to ensure departmental needs are recognised.

INTRODUCTION:

The hospital administration is responsible for seeing that the health record services of their institution have adequate facilities and equipment for the efficient day-to-day operation of the service. The criteria to meet this standard includes:

1. the health record department/office should be located in such a place as to facilitate the rapid retrieval and distribution of health records
2. the Office and work space should be sufficient for health record staff to perform

their duties and for other authorised personnel to work with health records, including records on microfilm or computer

3. there should be sufficient storage space for health records to allow for future storage needs. This includes:-
 - a) an active storage area with sufficient space to include all health records currently in use by hospital staff, and
 - b) available space to provide for both active and inactive health records being stored under statutory guidelines
4. areas for active and inactive health record storage should be sufficiently secure to protect records against loss, damage, or use by unauthorised persons (ACHS,1992).

The planning of a health record department, whether for a new hospital or relocation within an existing hospital, should develop from the interaction of three people: the health record officer, the facility's planning co-ordinator and the architect. The MRO contributes ideas especially on the detailed functions of the proposed department; the planning co-ordinator has an understanding of the total requirements within the facility and co-ordinates all departmental planning and the architect is responsible for defining, both verbally and graphically the building or complex to meet a specified objective.

To design a department which will offer both efficient and effective services, the planning team must clearly define the functions of the department and the inter-relationships of the proposed department with other departments/areas of the facility. For example, will the health record department be responsible for transporting health record, for ordering and storing health record forms, for cleaning the department or will these functions be the responsibility of another department. This involves looking at procedures to be performed, staff requirements for the performance of these procedures, the flow of work planned for the department and the hours of services offered. This information should be stated in clear, logical writing, with sufficient detail for an architect to understand what is required. (Greenlaw & Biggs, 1979).

The six phases determined by the architects (Lindell, 1974) which they believe should be observed when designing a new hospital department are as follows:

- A. **Definition** phase, that is the definition of the precise need the design of the department is to meet
- B. **Brief** phase, is a detailed nomination of the estimated facilities to meet the defined need
- C. **Department** phase, the integration of one specific area or department into the greater complex of the total facility. In this phase the key people in the facility along with the architect and planning co-ordinator establish ideal working relationships with other departments

- D. **Total facility** phase which looks at wants, as compared to needs, compared to available resources. A total hospital proposal is prepared to enable the selection of the most viable scheme for the department

E. **Process** phase - at this stage attention is focused on the actual function of the individual departments. This means that each proposed procedure to be performed in a department is thoroughly analysed and assessed. Diagrams illustrating the various processes and procedures, most of which were completed in the definition phase, are extremely useful as graphic expressions of physical requirements and associated services. It is at this phase that attention must be paid to the welfare, comfort and health of workers in the proposed requirements for the department.

F. **Department design** phase is the stage where the architect prepares final proposals to enable an optimum design to be prepared and selected. Detailed drawings of each department are prepared, including all special requirements. There must be a systematic means of assessing and comparing the various schemes to enable the planning team to reach a final decision.

In this Unit we will concentrate on the first two phases since these require the greatest participation by the health record officer and also have the greatest applicability in improving the layout of an existing department.

A. DEFINITION PHASE

When preparing for this first phase in the planning of a health record department, there are five major points to be considered. These are:

1. location of the department in regard to services and inter-relationship of service areas
2. space requirements for records, for personnel and for equipment
3. functional design and logical placement of key work areas
4. system of communication within the health record department and between the department and other areas of the facility
5. system to be used to transport health records within the department and to other departments and wards.

1. Location

When determining location consideration must be given to the need for the department to be centrally located where it will provide:

- prompt service for all patients - inpatients, outpatients and emergency
- ready accessibility for medical officers and other users, and
- easy availability for administrative use.

That is it should be:

- adjacent to the Admission Office, the Accident and Emergency Department (A&E), the Outpatient Department (OPD)
- close to wards
- close to the administrative and business offices
- close to other service departments, e.g. x-ray, pathology, etc.

While it is desirable to have the health record department centrally located, it is accepted that this is not always possible. If this is the case and the department cannot be logistically situated near all these areas, the first three should have top priority and, in most situations, the proximity to the outpatient and accident and emergency departments would have the highest priority, as these two areas usually have the greatest utilisation of records with speed of access often essential.

2. Space

Regardless of the type of facility, when planning for space requirements for records, personnel and equipment, the health record administrator must consider the following:

- population of the district served by the hospital
- hospital services proposed
- number and type of beds
- current and projected number of discharges/deaths and outpatient and emergency registrations and attendances
- major functions to be performed in the department
- number of personnel required to perform proposed functions
- equipment most suitable for the work to be done
- extent of computerisation anticipated
- type of filing system to be used
- the numbering system
- whether the record services are to be centralised or decentralised
- whether emergency/casualty records are to be included in the main record
- number of years of active storage
- length of time original records are to be preserved and whether inactive records will be selectively culled or microfilmed,
- type of secondary storage required
- special services to be offered by the department.

a) Space for records

Before calculating file space required, decide how many years of health records should be kept in active filing and estimate the number of records generated per year.

The retention schedules recommended by the local health authority for health records should be considered when determining record activity. These retention schedules usually take into consideration:

- the statute of limitations for legal protection, and
- state regulations

Retention for longer periods than determined by health authorities, however, could be influenced by:

- available storage space, and
- the clinical and/or research value of the records.

Once the proposed number of records and the activity rate have been determined the estimated number of health records over the number of years of active filing can be calculated. The steps required are as follows:

- Given the number of annual discharges/deaths and OPD registrations (+ A&E new patients if to be filed in main health record) and the number of years required for active storage, e.g. 7 years, you can determine the number of records to be generated over a 7 year period, e.g.

Annual OPD registrations	3000	
Annual discharges/deaths (No A&E)	23000	
	26000	records per year

26000 per year for 7 years = 26000 x 7 = 182000 health records in 7 years

It should be noted that these figures overestimate the number of actual records as discharges will include readmissions. However, this is a better figure to use as it allows space for the expansion of the file with each re-admission plus the work space needed for efficient filing and retrieval.

- The next step is to determine the average size of each health record e.g. one record = 2cms of linear shelf space
- Determine how many records to 1 metre of linear shelf space, i.e. $\frac{100}{2} = 50$ records to 1 metre
- The total filing space required, therefore, for these health records can be calculated as follows:

$$\frac{\text{annual discharges/deaths} + \text{OPD reg}}{\text{records per metre}} \times \text{storage years required}$$

e.g. using the above example:

$$\frac{23000 + 3000}{50} \times 7 = \frac{182000}{50} = 3640$$

Therefore for 182,000 health records, 3,640 metres of shelving is required.

- As well as determining what is adequate to meet the needs of the present, the needs of the future, i.e. in 10 or even 20 years, should also be considered. This can be achieved by an estimate, for example a 10% increase in discharges/deaths and OPD registrations over the next 10 years. This will change the filing space required to:

$$10\% \text{ of } 3640 = 3640 + 364 = 4004 \text{ metres required.}$$

- To calculate the total number of units required:

determine the number of metres of storage per unit,
e.g. each unit = 6 shelves high x 2 metres wide
= 12 metres of storage per unit

$$\frac{4004}{12} = 333.66 \text{ or } 334 \text{ units of 6 shelves}$$

- To calculate the number of bays required where 5 units = 1 bay the following calculation should be used:

$$\frac{\text{total number of units required}}{\text{number of units per bay}}$$

$$= \frac{334}{5} = 66.8$$

= 67 bays with 5 units per bay and 6 shelves per unit

- For terminal digit filing, to calculate the number of metres of shelving required for each primary digit the following formula should be used:

$$\frac{\text{metres of shelving required}}{\text{number of sections in file}}$$

$$\frac{4004}{100} = 40 \text{ metres per primary section}$$

Each terminal digit will therefore occupy 20 full shelves. Should, however, the calculations show that each terminal digit will occupy only a portion of a shelf one might want to adjust the number of shelving units to be acquired (or reduce the space allotted to each terminal digit).

b) Secondary storage

If a secondary storage area is considered it should ideally be located within the department, or immediately adjacent to it, or directly underneath with its own stairway. There are a number of advantages for keeping non-active health records readily accessible and available, two of which are that:

- it is time saving for staff, and
- offers easy access for refiling.

If storage space is a problem and microfilming of inactive records is being considered a special room for microfilming will need to be planned.

To calculate the space required for secondary storage, divide the total number of records to be stored by the number of records to 1 metre, i.e. 150,000 inactive records to be stored and there are 50 records to 1 metre divide 150,000 by 50. Health records, however, are generally filed in serial order in secondary storage allowing for shelves to be packed to capacity, and this could allow for 80 records to 1 metre. The reason you can get more records/metres is (i) no need to allow for growth of individual record and (ii) no need for working space since there will be little movement. The calculation would then be:

$$\begin{array}{l} \text{storage} \\ \frac{150000}{80} = 1875 \text{ metres of shelving required for secondary} \end{array}$$

c) Patients' master index

Consideration must be given to the space the patients' master index will occupy. When all or part of the PMI is on cards, the space requirements can be considerable. The steps to be followed in calculating the space needed to file the index cards and guides are the same as those for the health record files.

d) Planning space for personnel and equipment

When planning for personnel and equipment requirements, consideration must be given to the functions to be performed within the department and the services offered by the department to other areas.

The floor space is determined by the number of staff, desks, files and other equipment necessary, and ample room must be provided for each employee. Huffman (1994) recommends that the minimum space allocated for each

office worker should be 5.57m², although this estimation may vary, it is still a good guideline.

It is generally accepted that the staff of a health record department are responsible for the initiation, completion and maintenance of a health record for every person attending the facility as an inpatient, outpatient or accident/emergency patient. The major functions of a health record department usually include:

- the initiation of health record documentation and the design and control of all record forms
- initiation and maintenance of a unique patient identification system and patients' master index (PMI)
- preparation of new outpatient and accident and emergency health records and the update of records of returning patients
- assembly, completion and control of incomplete records for discharged/died inpatients
- classification of diseases and the collection of morbidity/ mortality statistics for all hospital discharges/deaths
- collection of health facility statistics relating to discharges/deaths, length of stay, occupancy rates for administrative and health department use
- filing and retrieval of all inpatient and outpatient health records with an inbuilt record control system
- medical secretarial services covering discharge summaries, operation reports, outpatient letters and medico-legal correspondence (using word processing facilities)
- services to medical and other health professionals for the retrieval of health records for research and teaching purposes
- in some situations the functions of the health record services includes patient reception and processing in the outpatient department, admission office and accident and emergency centres.

3. Staff required

Once the functions of the department have been determined, consideration should be given to the number of staff required. Hospital policy regarding the number of hours in the work week and the hours of service for the health record department (24 hours a day, seven days a week versus some other schedule) will be a major factor in this determination along with the functions to be performed, the number of annual discharges/deaths, OPD and A&E

attendances (if A&E reports are incorporated in the unit record) and research undertaken by medical staff.

(a) Forecasting:

Once the MRO has:

- determined the predicted number of discharges/deaths, and OPD/A&E registrations and attendances, and predicted specialised work, e.g. research, quality assurance, etc.
- determined the functions of the department and services to other departments
- determined the hours of service eg 24 hours x 7 days per week or less
- defined each function and determined the tasks to be performed
- defined how each task is to be divided into manageable work units or jobs
- analysed each job to determine the content, skills, knowledge and responsibilities, and
- prepared a job description and job specification for each job,

the next step is to forecast the number and type of staff required to perform each job. That is, the MRO needs to be able to predict the number of direct employee hours required to cover the jobs outlined in each job description. There are a number of forecasting techniques used to cope with the problems involved with human resource forecasting. For our purposes, traditional statistical projection, could be used by using the correlation of staff to patient discharges/deaths and attendances. The time to process one health record of a discharged patient can be estimated as suggested in the following hypothetical example:

· Collection of records from designated collection area		3 minutes
· Pulling of work cards from the hospital box	1 "	
· Assembling record into correct order		3 "
· Checking record for deficiencies and retrieval of loose sheets	3 "	
· In case of re-admission, retrieval of old notes or if new patient, preparation of new folder		3 "
· Assigning record to appropriate doctors for completion	2 "	
· Filing record in incomplete file area		2 "
· Filing work card in work box	1 "	
· Filing outguide on file	<u>2 "</u>	
		20 minutes

By the above calculations, it is estimated that the discharge procedure for each record takes 20 minutes. If there are 70 discharges/deaths per day for seven days, the total time to process these records would be:

70 x 20 x 7 = 9800 minutes or 163.3 hours
 If each clerk worked 7.5 hours per day for five days, the number of staff required for this process would be:

$$\frac{163.3}{37.5} = 4.35$$

That is, 4.5 full-time equivalent staff members would be required to complete the discharge procedure in a hospital with approximately 25,480 annual discharges/deaths.

A similar procedure could be undertaken for each job within the department using the prepared job descriptions.

Alternatively, another method would be to use a work distribution chart as illustrated below. By this method, previous information relating to departmental functions and jobs can be used to estimate the time each job takes. That is, by listing the work activities performed and the estimated time it takes to perform them, we can estimate the number of staff required.

<u>Activity</u>	<u>Hours per week</u>	<u>Activity</u>	<u>Hours per week</u>
Record assembly	106	Retrieval of	
Record analysis	50	records for Clinics	76
Admissions	57	Typing discharge	
Filing recent discharges	18	summaries	114
Telephone/enquiries		16 Medico-legal	
Statistics	19	correspondence	40
Coding	13	Filing	38
Indexing	<u>25</u>	Research	<u>36</u>
	304		304

Based on a 37.5 hour week calculate staff as follows :

$$\frac{608}{37.5} = 16.2$$

The MRO could then indicate the actual staff required for each job, e.g.

Clinics & Filing	3
Typing Discharge Summaries	3
Medico-legal & Research	2
Separations & Enquiries	5
Coding & Indexing	1
Admission & Statistics	<u>2</u>
	16

Relief staff based on estimated absences such as recreation leave, sick leave, etc. should also be determined, as should supervisory and professional staff requirements.

e) Health record officer's office space

Since privacy is desirable for the chief health record officer (for talks with personnel, doctors, lawyers, administrators), a private office may be necessary. However, in smaller hospitals the MRO may prefer to be with the staff in the main department area.

f) Other special areas

- A section of the health record department should be provided away from the flow of traffic for the medical staff so that they can complete their records or review records for research in reasonable quiet and comfort.
- A special area is often required for typists/word processors. Medical transcription should be confined to one area because of noise - sound proof booths or partitions help reduce the noise of typewriters/printers.

4. Equipment

The number of staff and the functions of the department will determine the equipment required.

As well as planning space requirements for records and personnel, consideration must also be given to the allocation of sufficient space for the equipment required to cover the defined functions of the department.

The major areas for consideration are:

a) Filing

Type of shelving to be used is important and it is generally accepted that open shelving is the most practical. It utilises less floor space than other forms of filing equipment, allows for faster filing and retrieval and lends itself to any type of filing system used. Once the amount of shelving required is calculated, the amount of floor space required for the shelving can also be calculated using the width and length measurements of each bay of shelving.

The space should also be allocated for aisles and it is generally accepted that main aisles should be 150-155 cms wide and secondary aisles 90-95 wide.

b) Computer facilities

The level of initial computerisation would have been defined in the determination of functions and job analysis and sufficient space must be planned for terminals and ergonomically sound work areas. If the entire department is not air conditioned, provision should be made to protect the computers from excessive heat and dust.

c) Dictating/transcription

Appropriate space for dictating and transcription services needs to be carefully planned to allow for ergonomically sound facilities and work areas. The use of a dictating service with a central receiving unit encourages doctors to dictate reports and discharge summaries promptly. Word processors are now widely used in health care facilities and appropriate space must be allocated to ensure efficiency and also the health and well being of the staff.

d) General

The number and therefore, space requirements, of desks, chairs, typewriters, telephones, filing cabinets and other office equipment will be based on the jobs to be performed and the number of personnel required. Staff working different shifts can occupy the same work area.

Department personnel should have a place to store their belongings (handbags, umbrellas, coats, etc) safely. A tea or lunch room should be available for staff to take their break so that they do not eat and drink at their desk. Convenient access to hand-washing and toilet facilities is needed.

e) Special space

Space requirements for a photocopier, storage cabinet (for supplies and folders, etc), book shelves, and any other special equipment should also be defined at this stage. If microfilming is planned, space for the necessary equipment, e.g. microfilm camera, reader-printer, jacket-filler, filing cabinets and work area must be considered in the planning stage.

The predetermined departmental functions, job descriptions and number of proposed staff, however, will enable the MRO to determine the equipment and furniture needed and the approximate space required for the work area.

5. Functional design and logistical placement of key work areas

When considering functional design and layout, a key consideration is work flow. At this stage of definition, the MRO should prepare work flow diagrams to indicate the work flow from procedure to procedure or desk to desk.

Keeping in mind that:

- desks should be arranged so that paper moves in a straight line and only a short distance at a time
- desks should be next to each other for procedures performed in sequential steps
- amount of floor space required will depend largely on record activity and whether or not data processing or microfilm programs are established, and
- equipment should be chosen for reasons of both efficiency and appropriateness.

The use of a movement diagram (Stoner, Collins & Yelton 1985) which is an overlay of the flow of work through the layout, can assist with determining that furniture and equipment are placed effectively.

When preparing a layout for the architect, the MRO should be able to use appropriate terminology and blueprint symbols to illustrate the essential features such as columns, lifts, doors, windows, furniture and equipment, etc. This will give everyone including the MRO, a visual image of the proposed department.

6. System of communication

During the definition stage, consideration must be given to the communication system to be used within the department and between the health record department and other departments or areas.

Most health record departments require numerous telephones placed at strategic points within the department. In addition, some hospitals also prefer intercom systems between A&E and the MRD, or the OPD and the MRD.

If computer terminals are to be used, both as communication devices between the MRD and other areas and for the input and output of data, the cabling for such devices is an important part of the planning process. If the entire department is not air conditioned, consideration must be given to air conditioning the area where the terminals are located not only to prevent them from overheating but also to protect them from excessive dust.

7. Transport

Consideration must be given to how the health records are to be transported both within the MRD and to other areas. If trolleys are to be used within the department they have to be able to be pushed freely between desks and files. If a dumb waiter or pneumatic tube or other automated device is to be used, special space provision in the appropriate place must be made. Some

hospitals use motorised trolleys which need to be stored in the MRD when not in use. Provision for all these needs must be considered in the definition phase of filing.

8. Layout

In determining the physical layout the following points should also be considered (Wakely, 1974, Huffman, 1990).

- it is important that full use be made of available space. Desks and files must be arranged to provide maximum efficiency, light and air
- to eliminate the hazard of electrical cords, attention should be given to the most convenient placing of electrical outlets for the use of any electrical equipment
- temperature control and circulation of air, i.e. adequate ventilation, fans, windows
- adequate lighting - i.e. well positioned lighting (experts should be consulted as to levels required and correct placement). Workers should not face glaring lights
- use of colour - walls, floors, furniture and equipment (light colours for walls - bright for accents and trims)
- to keep traffic flow in the health record department to a minimum, it may be desirable in many hospitals to have a reception and/or waiting area where an employee may attend to requests
- employees handling enquiries should be placed near the main entrance
- equipment should be near user and the doors wide enough for record trolleys
- desks should face the same direction with 1 to 1 1/2 metres between desks
- supervisors should be at the back of the people she/he is supervising - should be able to see all employees without leaving desk
- two desks placed side by side in the same direction is a compact arrangement
- it is best to place the file space to the back of the department - it should not be placed near the main entrance (for safe keeping)
- sufficient space for workers to stretch and move around.

B. THE BRIEF PHASE

At the completion of the definition phase the MRO should be ready to prepare a brief for the architects which will include the proposed functions and services of the

department, the preferred location, the capacity with regard to space, staff and equipment, relationship to other departments, and any other design features to be considered. Requirements may be illustrated by drawing a plan.

The brief should include work flow diagrams, and a proposed layout with specific reference to ergonomic consideration in all aspects of the design. If the MRO does not feel confident in making determinations on ergonomic issues an expert in this area should be consulted.

SUMMARY

Effective planning of a health record department for a new facility or in an existing one is an important responsibility which should be readily accepted by the health record officer. As discussed previously, the planning process **MUST** begin with clarification of the **FUNCTIONS** to be performed and **SERVICES** to be offered. The health record officer is the best person to undertake this important step and should be prepared to do so.

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JOB DESCRIPTION

. Job Title - Health record Officer-in-Charge

. General description

Administer the health record services of a health care facility, including the development, planning, implementation, evaluation and control of health care systems and services

. Functions

The primary function of the MRO is the organisation and administration of patient information systems in health care facilities

. Activities and responsibilities

Administer the health record services

Develop, plan, implement and control health record systems and services

Administer other areas of patient information services

Consult and advise on patient health information systems

Ensure achievement of accreditation standards

Protect health information from unauthorised access and produce health information for authorised access Provide in-service training for staff and supervise students

Retrieve, collect, compile and analyse data for internal and external statistical and reporting purposes and for use in patient care, clinical and health service research, evaluation and education

Represent the health record department on hospital committees Other duties as specified

. Minimal acceptable qualifications

M.R.O. qualifications

* Model Duty Statement for Health record Administrators,
Health record Association of Australia, 1985.

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