
QUALITY ASSURANCE IN U.S.A HEALTH CARE IN 1986

Report of a study trip in Autumn 1986 by Dr J.Bennett (Specialist in Community Medicine, Brighton Health Authority) and Mr G.Stevens (C.A.S.P.E Research Coordinator, Brighton Project).

READING THIS REPORT....

A Contents list appears on the next page, followed by a short Summary. Each of the remaining sections of the main report concludes with recommendations for ACTION in Brighton Health District; these are listed in the Summary.

Comparisons with the U.K scene are made in each section where this is meaningful, and relevant to our recommendations.

There are many appendices to the document, most of which are working papers. It is unlikely that any reader would want to see all of the appendices - they will be issued individually on request where copyright law permits.

10th March 1987

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Contents

1 SUMMARY AND RECOMMENDATIONS FOR ACTION

Purposes of the Trip and the Report

Dr Bennett's main objectives were to learn from Q.A practice with special reference to:-

Level of commitment of doctors to Q.A, and how it is maintained,
How doctors view (and use) the relationship of Q.A and budgeting,
The relevance to U.K of accreditation and other control methods.

She also wanted to study the development of policy in repect of A.I.D.S. (this is the subject of a separate report).

Mr Stevens' main objectives were to:-

Examine the hardware, software and procedures of computer based information systems used for Q.A and budgeting,
Study the management arrangements for clinical budgeting,
Discuss the uses made of Diagnosis Related Groups (DRGs), and views on alternatives.

Itineraries

Cities visited over the course of the twelve day trip were:-

J.Bennett only: Chicago
G.Stevens only: Ann Arbor, Michigan and Sewickley, PA.
Both of us: Washington D.C, Baltimore, Pittsburgh, New York.

Detailed itineraries are shown in Appendix I.

Some items of general note

These are opinions and practices we encountered in a number of centres. Many of them have led in this report to recommendations for action in Brighton.

* Q.A TO ALERT DOCTORS TO THE NEED FOR PEER REVIEW

Hospitals with QA experience, software suppliers, and respected academics, independently gave considerable support to approaches which select cases for DOCTORS to investigate further. Professor Donabedian said to GS, "Doctors know good and bad service, and can be mobilised to describe it, if we work with them. They know the key indicators that a patient is getting better".

Indicators, management systems and information systems based on Screening Criteria have been developed to help select hospital cases which should be investigated, rather than attempt to develop and apply rigorous detailed quality measures from the start.

* PROGRESSIVE FOCUS TO RESTRAIN THE COST OF Q.A

Typically, hospitals found it helpful to start with screening criteria or or other signposts for a few Diagnosis Related Groups (DRGs) or otherwise classified cases, and look for variances outside the range that could be explained by casemix differences. More detailed examination would then take place.

* SENTINEL HEALTH EVENTS (S.H.Es)

are occurences which suggest that the quality of care in the district concerned may deserve scrutiny. The occurences may be single events or rate events (unacceptable values), which cause:

unnecessary disease (e.g: Polio),

unnecessary disability (e.g: Down's Syndrome),

or avoidable death (e.g: Death following herniorraphy).

* ROLE OF NURSES IN Q.A

It was consistently and dramatically evident that nurses are given a lot of responsibility for:-

- coordinating medical Q.A
- extracting and abstracting medical data
- dealing direct with doctors on appropriateness of case management.
- for some insurance companies, changing doctors behaviour under financing systems.

* "TOTAL HOUSE" - ADMIN NEEDS AND Q.A

It was often observed that Q.A information systems were successful only when the data they handled were related to efficient administration of the hospital or department. Facilities were made available on hospital computers for ad hoc analysis and research.

* METHODS AND SYSTEMS WHICH SOLVE PROBLEMS WHILE CURRENT

There was considerable emphasis on speed of attention to problems. This was evident is a variety of ways:

- QA computer systems with data entered rapidly during the patient's stay,
- Presentation of patient activity daily to individual doctors,
- Budgeting systems in which hospital administrators pick up emergent cost variances and go out to departments in search of reasons,
- Planning systems with rapid response.

* TRENDING

Q.A practitioners would take action on adverse trends in quality indicators, even if standards for the indicators could not readily be defined.

* SEVERITY MEASURES

DRGs do not allow for different mixes of severity within the Group. For instance, "medical back problem" is a single DRG, but the clinical picture could vary widely within this diagnosis. Measures of severity were seen as needed for valid workload comparisons, and some were being developed. In the MEDISGRPS system, for instance, changes during episode in severity measures can be used as quality indicators.

* QUALITY AND COST CONTROL

There is increasing attention in the USA to the relationship between quality and cost of health care, but it appeared that Brighton is making as much progress as most U.S centres.

* CONSUMER AFFAIRS

Hospital managers in the USA work very hard at presenting a friendly, polite and welcoming service to consumers. British hospital managers can learn from their methods.

* Q.A IN NURSING

We were not in a position to study this topic, but it was impossible to ignore how much software, procedures, models, existed for Q.A in nursing.

* MEDICAL KNOWLEDGE SHOWN BY NON MEDICAL STAFF

Most hospital personnel, particularly nurses and administrators, demonstrated a high level of medical knowledge. Doctors reported that this added to their confidence that quality issues would be taken into account by the management.

Recommendations for Action in Brighton Health District

(These re-state the recommendations for ACTION at the end of each section of the report)

1 SUMMARY AND RECOMMENDATIONS FOR ACTION

(no recommendations)

2 Q.A IN THE U.S.A - RECENT TRENDS AND QUESTIONS

.1 Send copies of criteria for discharge planning for consideration by UGM I, consultant in A & E, and head of Social Services.

.2 Develop a ward round audit and planning form. Pilot this by asking several consultants to use the form.

.3 Send copies of "proctoring" article to Director of Personnel.

3 ORGANISATION OF QA

.1 Discuss role of nurses in Q.A with Chief Nursing Officer.

.2 Suggest a twice-yearly report to the District Q.A Committee on usage of whole blood and blood products, and on parenteral nutrition.

.3 Screening criteria for whole blood use to Dr Kenny.

4 HOSPITAL MANAGEMENT AND CONSUMER SERVICE

.1 Recommend that regular telephone surveys are carried out in Brighton H.D, and the results reported in the "Bulletin".

.2 Discuss with the Director of Consumer Affairs, the questionnaires shown in Appendices IV.2 and IV.3.

.3 Discuss with consultants, possible benefits from inviting administrators to attend some ward rounds. Discuss with the Director of Personnel, ways of providing time for non medical staff to enhance their medical knowledge.

5 QUALITY, COST AND COST CONTROL

.1 Consider using the DMMS classification of orders.

.2 Consider the Patterns of Care approach, and invite comment from selected consultants.

.3 Write to Edward Hines hospital, asking to be sent copies of a few Patterns of Care.

6 MANAGEMENT BUDGETING

.1 Copy of this report section with Johns Hopkins 1987 Planning Guidelines to Mr J. Henry, drawing Mr R.Prior's attention to its Section III on personal computer acquisition.

.2 Appendix VI.2 (example bill for patient stay) to Mr Henry.

.3 1987 Annual Operating Plan to Mr Henry for information, asking for it to be passed on to Miss L. Hyde.

7 ACCREDITATION

.1 The Brighton QA Department to assess itself using the criteria laid down for an acute hospital QA programme and possibly some of the others e.g. out-patient and long-term care.

.2 Recommend that Unit General Managers consider whether use of the process of accreditation would help them to evaluate the facilities they are providing, and to set priorities for action.

.3 Compare the facilities provided in some of our hospitals using one of the JCAH manuals, bearing in mind that not all of the manual may be relevant to a U.K hospital.

8 COMPUTER SYSTEMS

MMA:-

.1 Consider obtaining the MMA manual. This costs $300, could be used to develop our own ideas even if we cannot purchase the system.

.2 Investigate subscription to the MMA Information Service for Q.A directorate or postgraduate centre library. At $110 per annum, it is fairly costly, but could be of interest to a wide clinical readership.

.3 Ask QA Committee members for their views on the generic criteria, stressing that the whole point is to select cases for subsequent review by DOCTORS.

.4 Show a typical set of specific criteria, and invite (some) consultants to produce some of their own.

.5 Appraise review worksheets.

.6 Surgical screening criteria are being developed at MacGee for just the "top ten" procedures. We could try the same approach.

Note the Generic Quality Screens from Empire State Medical, Scientific and Education Foundation, Inc. One page of these is shown in Appendix VIII.10. It represents an attempt at codes to apply to all utilization reviews.

MEDISGRPS:-

.7 Tell MEDIQUAL we need more than this one example of KCF => severity in order to decide whether to buy.

.8 Compare notes with the Bristol district which sent two visitors to MEDIQUAL.

.9 Propose that we set up an experiment in one specialty to draw up KCFs.

C.P.H.A:-

.10 Study the form of QAM output, and steal ideas. Consider the C.P.H.A research reports.

OTHERS:-

.11 Send for details of the QA/Risk Management computer system and of SYN.OP.SYS, asking about demo disks.

.12 Copy of article on computer-assisted hospital infection screening to Clinical Nurse Manager (Infection Control).

9 RESEARCH

.1 Study, revise and expand C.P.H.A.'s list of tracers for possible use in Brighton.

.2 Contact C.P.H.A in mid 1987 for copy of second report.

10 MISCELLANY

.1 General purpose health questionnaire to DQA for discussion at regular QA directorate meeting.

.2 UHF health planning / needs monitoring report to Miss L. Hyde, inviting discussion of the consortium approach.

.3 Checklists and proformae for pharmaceutical services monitoring, to District Pharmaceutical Officer.

.4 Report on food - drug interactions to District Dietitian for information.

2 Q.A IN THE U.S.A - RECENT TRENDS AND QUESTIONS

Health Maintenance Organisations

Health Maintenance Organisations (HMOs) provide comprehensive health care services to a voluntarily enrolled population for a fixed, pre-paid fee. Clearly, HMOs have a financial incentive to provide high quality care throughout their delivery systems.

It was reported (National Center for Health Services Research, Newsletter April 1986) that members of HMOs use less hospital inpatient care than persons insured under conventional, fee-for-service health plans. According to the director of a study at University of Pittsburgh, 'HMO members are hospitalized 13 per cent fewer days a year than conventionally insured patients. Individually, the average hospital stay for a HMO member is nearly a fifth shorter..... Although the two groups differ in how they use health care, they are generally comparable in age, gender and health status'.

Impact of Prospective Payment Systems (PPS)

It was observed that PPS, especially Diagnosis Related Groups (DRGs) have led to more competitive pricing by hospitals, hospital organisations preferred by insurers, and HMOs. It will probably be their need for better information on severity of patients etc that will drive the search for better measures of quality.

Large insurers now deal with Preferred Provider Organizations (PPOs) - a list of hospitals preferred by the insurer, which can thus influence referrals by by the employing corporation. Employees can choose from a range of physicians, who have considerable incentive to participate.

Market effects on their own so far seem not to have reduced variations in the custom and practice of care. Opinions varied on the impact that PPS will have in this respect. There was wide agreement that DRGs needed to be weighted by age and severity - this is addressed in sections 6 and 8.

Not surprisingly, DRGs have led to further reductions in length of stay. We heard anecdotal evidence of situations where best quality is cheaper (appendicitis allowed to proceed to generalized peritonitis requires much longer stay, etc) and cases where excessive care leads to longer stay. But we found no broader major studies so far which demonstrate relationships between quality of care and length of stay.

We learned (at Metropolitan Life, Sewickley Valley Hospital, Health & Hospitals Corporation, and other centres) that third party payers are becoming more interested in explicit evidence of quality. Where large companies have block arrangements for insurance of their employees, they "want to know where their dollars are going" and what the quality of the results is likely to be. The mortality rates of hospitals are now published and compared in newspapers.

Research at the Commission on Professional and Hospital Affairs in Ann Arbor, Michigan (described in Section 9) compared data from 1980-83 with the 1984 (post-PPS) position. The first interim report suggests that:-

* PPS prompted a reduction in the proportion of Medicare patients discharged for whom the hospital considered the episode of care to be completed. Conversely, more patients were treated for whom further care was required.

* The results show a reduction in the proportion of patients who died in hospital.

* There have been fewer diagnostic tests, fewer laboratory tests, and fewer x-rays used.

A separate report from the same organisation concludes that:-

* consultation rates remained constant

* in-hospital deaths and readmission rates were consistent with previous trends for the Medicare population.

No other quality indicators were available from the CPHA database.

Has QA Proved itself?

The following distinction can be made :-

Quality of	patient care provider hospitals	assessment

Quality of Patient Care

This report will give some evidence of improvements in the PROCESS of care from Q.A. In the U.S.A, we found as much current concern with OUTCOME measurement as there is in the U.K, but no revolutionary progress. That said, we found a number of indicators that might be used in this country.

Quality of Provider Assessment

Several methods were found for assuring the quality of doctors, at the time of employment and therafter. For instance, the September 1985 issue of QRC Advisor presented forms and guidance for "Proctoring" - the formal assessment of medical staff capabilities at the time of employment. It was observed at the GWUH, however, that there only weak sanctions when poor performers are revealed. One quote was "a formal Q.A programme isn't going to identify bad guys until they're so far gone that either all is lost, or they've been recognised already". This view is pessimistic but familiar. In summary:

good practice ⇒ no action,
marginal practice ⇒ counselling,
bad practice ⇒ training,
outrageous practice ⇒ supervision, sanction or removal of doctor.

Quality of Hospitals assessment

The advent of HMOs exemplifies great competition now among hospitals, and associated growth in the importance of consumer satisfaction with facilities and services. We saw many adverts on TV, in newspapers, on billboards from hospitals vying for custom. Employees can change schemes every year. These effects add to the significance of what JCAH is already doing (see Section 7).

There is a potential problem of how to validate data supplied by hospitals. Metroplitan Life said they used internal consistency checks, external "realism" checks, but also sample audit services purchased from PROs.

Quality, Cost and Budgeting

This is the subject of section 5 of the report.

UTILISATION REVIEW

Definition: The process of evaluating the use of professional medical care services, procedures and facilities by comparison with pre-established criteria.

Utilisation review has no direct equivalent in the U.K, and has arisen from financial considerations. In this country it can be seen as related to Q.A and use of performance indicators and management budgeting by unit advisory boards.

In some hospitals, the Director of Utilisation Management:-

a) Oversees the QA Department.

b) Develops programs to provide high quality patient care efficiently i.e. keeps hospital costs down.

c) Monitors systems and procedures to operate successfully under the prospective payment system.

d) Liaises between administration, specific departments and medical staff in relation to patient case management.

Patients at McKeesport Hospital Pittsburgh are given a leaflet on utilization review. The leaflet explains that:-

1 Hospitals are working to assure that all admissions and in-patient stays are medically necessary and...

2 ...that in-patient stays are not unnecessarily prolonged.

3 A special team will keep a record of the patients progress towards recovery and assist in the discharge planning. This team also makes sure that no patient is sent home until he or she is no longer receiving acute care.

Stages of the review process are outlined. These are marked with an asterisk in the following passage:-

* ADMISSION REVIEW

A nurse co-ordinator reviews medical record on the day after admission to determine that hospitalization is medically necessary.

There are various guidelines which are used by the assessors:-

1. Criteria for Admission Appropriateness (Appendix II.1)

These are used to help the reviewer document a patient's condition and services required upon admission. These criteria are applied to the medical record for the first 24 hours only. The admission criteria are generic rather than diagnostic specific. There are two subsets :-

a) Patient Condition Criteria and
b) Nursing/Life Support Services Criteria.

2 Length of stay criteria (Appendix II.2)

A list of major services and procedures which justify a patient being in an acute hospital to receive them.

3 A.M. Procedure List (Appendix II.3)

Procedures for which the patient should be admitted the morning of surgery unless contra indicated.

* CONTINUED STAY REVIEW

The co-ordinator continues to review the record, by using standard guidelines required by state and federal government.

* OUTCOME OF REVIEW

If admission or continued stay as determined by the review team is not medically justified (that is the treatment no longer requires acute care) the physician will be notified. If the physician can justify further hospitalization to the Utilisation Review Committee, additional stay may be granted.

If the Committee determines that acute care is no longer needed and further care could be carried out in a skilled nursing facility, nursing home, or at home - extension of stay will be denied. The patient or a member of their family, their physician and insurance carrier are notified in writing and then the insurance may no longer pay for continuing hospitalisation.

Note: *Health care services for MEDICARE patients are subjected to further review by authorised physician organisations - to determine if the services are medically necessary, are of a quality which meets professionally recognised standards of health care and are appropriately furnished in a hospital. (see Appendix II.1). Thus the PRO collects and maintains information on hospital patients through a data system on the types and extent of health care services received. This often leads to two sets of reviewers looking at the patients notes, one from the hospital and and one from the PRO.*

The Utilisation Review Committee also acts as a surveillance system for the hospital as to an individual doctor's medical practice. For example at the McKeesport Hospital in Pittsburgh - doctors should try not to get more than 5 cases classified as denials per quarter or their total for a year should be less than 5% of all their admissions.

When a doctor does have a case classified as a denial the Utilisation Review department will work up the case and encourage the doctor to appeal, taking the patient to the appeal hearing as a witness, if necessary. For Blue Cross/Blue Shield, 100% of costs are reimbursed if the hospital maintains a less than 5% denial rate.

The Committee at McKeesport Hospital consists of the following persons and meets once a month:

Administrator,
Medical Records Representative,
Medical Director (physician or surgeon),
Finance Billing representative,
Social Service representative,
Head Nurse,
Discharge Planner.

DISCHARGE PLANNING

can be one of the responsibilities of the Utilisation Review Department. Referral to Social Services and community nursing for discharge planning is made on admission, and also at any time during concurrent review when a determination of the need for such a service is identified.

A list of criteria for referral to the Discharge Planning department is shown in appendix II.5.

The Utilisation Review department also sends the doctor concerned a reminder if the discharge summary is outstanding. At one hospital all summaries were sent out within 30 days. As a comparison a recent survey in Brighton has shown a range from 14 days to 60 days.

The following Appendices to this report show documents used in McKeesport Hospital:-

II.6 shows samples of small cards which are stuck on the front of the patients notes in order to catch the physician's eye. These cards indicate warning signs e.g. the patient is now an outlier as far as length of stay goes. This will alert the physician to document carefully the reasons for extended stay and possibly to consider ways of discharging the patient if this is appropriate.

II.7 shows an example of the Admission Review form / DRG Certification (Federal)

II.8 shows an example of the Hospital Admission Review form.

II.9 shows a confidential Request for Pre-Admission form.

ACTION

1 Send copies of criteria for discharge planning for consideration by UGM I, consultant in A & E, and head of social services.

2 Develop a ward round audit and planning form. Pilot this by asking several consultants to use the form.

3 Send copies of "proctoring" article to Director of Personnel.

3 ORGANISATION OF QA

The organisation of Q.A in the U.S.A is a response to reasons for carrying out Q.A which to a large extent differ from those present in the U.K. Table 3:1 summarises the differences we noticed in Q.A organisation, some of which are discussed further in this section.

TABLE 3:1

DIFFERENCES BETWEEN U.S.A AND U.K. FOR Q.A.

U.S.A.	U.K.
GENEROUS STAFF	ALMOST NONE
NURSES USED FOR MEDICAL Q.A	NURSES USED FOR CONSUMER AFFAIRS WORK
GOOD INFORMATION SYSTEMS	? POOR INFO. - OR NOT READILY AVAILABLE
REGULAR INFORMATION	AD HOC SURVEYS
LEGAL REQUIREMENT	- NO REQUIREMENT
FINANCIAL REQUIREMENT	- " "
COMPULSORY	VOLUNTARY
ULTIMATE SANCTIONS	NO SANCTIONS
REWARDS - FINANCIAL	? REWARDS
HIGH PROFILE	LOW PROFILE
DOCTORS PAID TO PARTICIPATE IN QA UNTIL 12 YEARS AGO. NOW GET SOME FINANCIAL BENEFITS FROM Q.A	DOCTORS NOT PAID TO DO Q.A
NURSES DO MOST GROUND WORK AND PRESENT TO DOCTORS, WORKED UP PROJECTS ON CASES TO BE AUDITED	DOCTORS HAVE TO DO THEIR OWN PROJECTS

Size and organisation of Q.A departments in U.S.A

Every accredited U.S hospital must have a department of Q.A, but the variety of ways in which this function is related to utilisation review, infection control, positive health programmes and risk management makes it hard to provide a direct comparison with what is appropriate in the U.K. Figures 3:3 and 3:4 at the end of this section show two examples of how Q.A is organised in the U.S, table 3:2 below shows the extent of variation in staffing levels for Q.A (depending on the remit of each department) in the hospitals we visited. Q.A departments have a high profile and were often headed by hospital chief executives.

TABLE 3:2

SIZE OF HOSPITAL (U.S.A.) & Q.A. DEPT

	BEDS	Q.A. STAFF
GEORGE WASHINGTON MEDICAL CENTER	(521) 430	14
GEORGE WASHINGTON HOSPITAL CENTER	821	5
NATIONAL REHABILITATION HOSPITAL	120	1
McKEESPORT HOSPITAL	(425) 330	6
JOHN HOPKINS HOSPITAL	(1000) 939	6
HEALTH AMERICA H.M.O.	80,000 POPULATION	3
ST LUKES/RUSH CHICAGO	(1300)1200	8
MACGEE HOSPITAL	400	8
SEWICKLEY VALLEY HOSPITAL	230	5

The number of (beds) in brackets was that before DRG's were introduced. Since then most hospitals have reduced their bed complement.

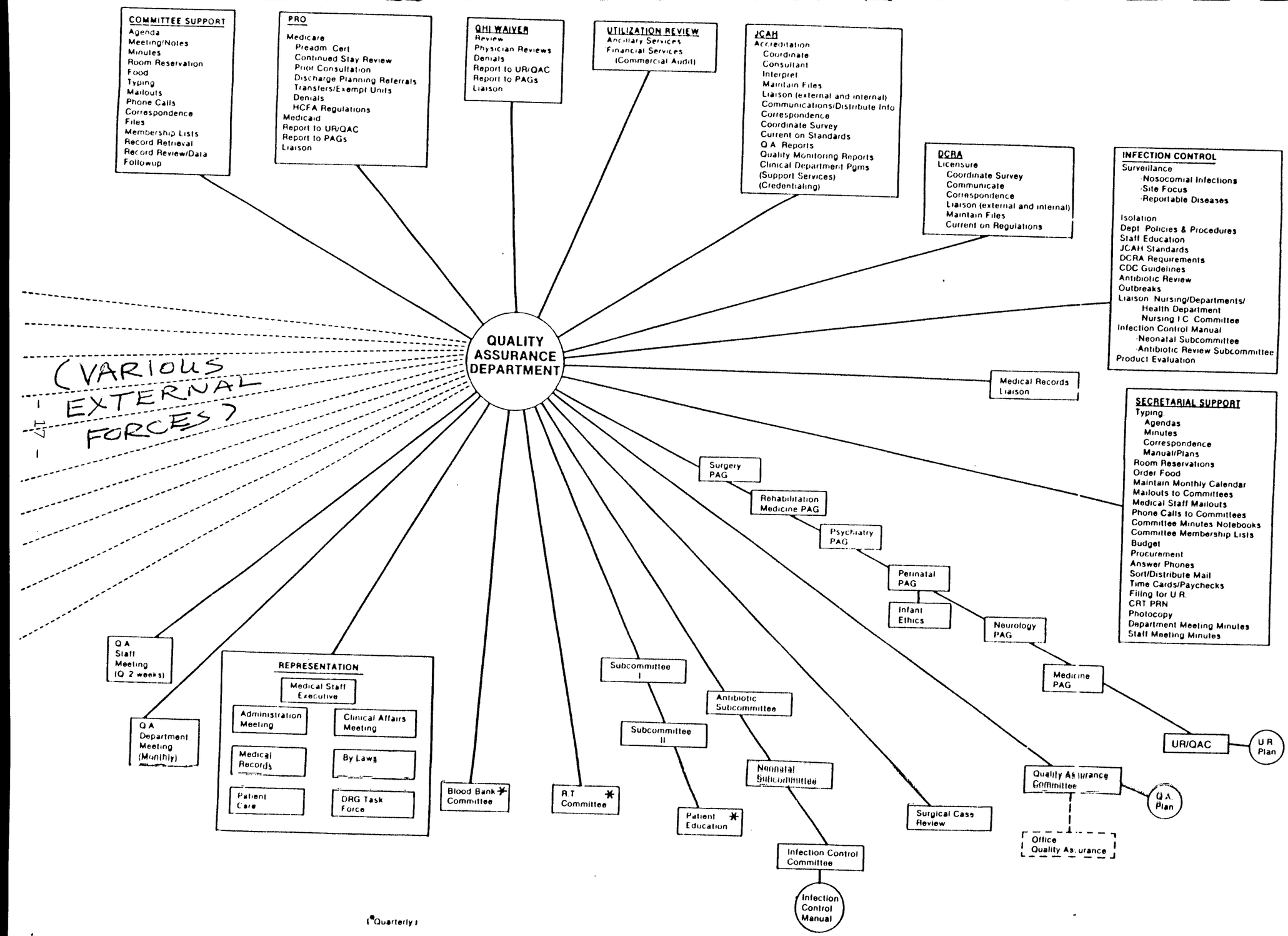


FIGURE 3.3: QA AT GEORGE WASHINGTON UNIVERSITY HOSPITAL

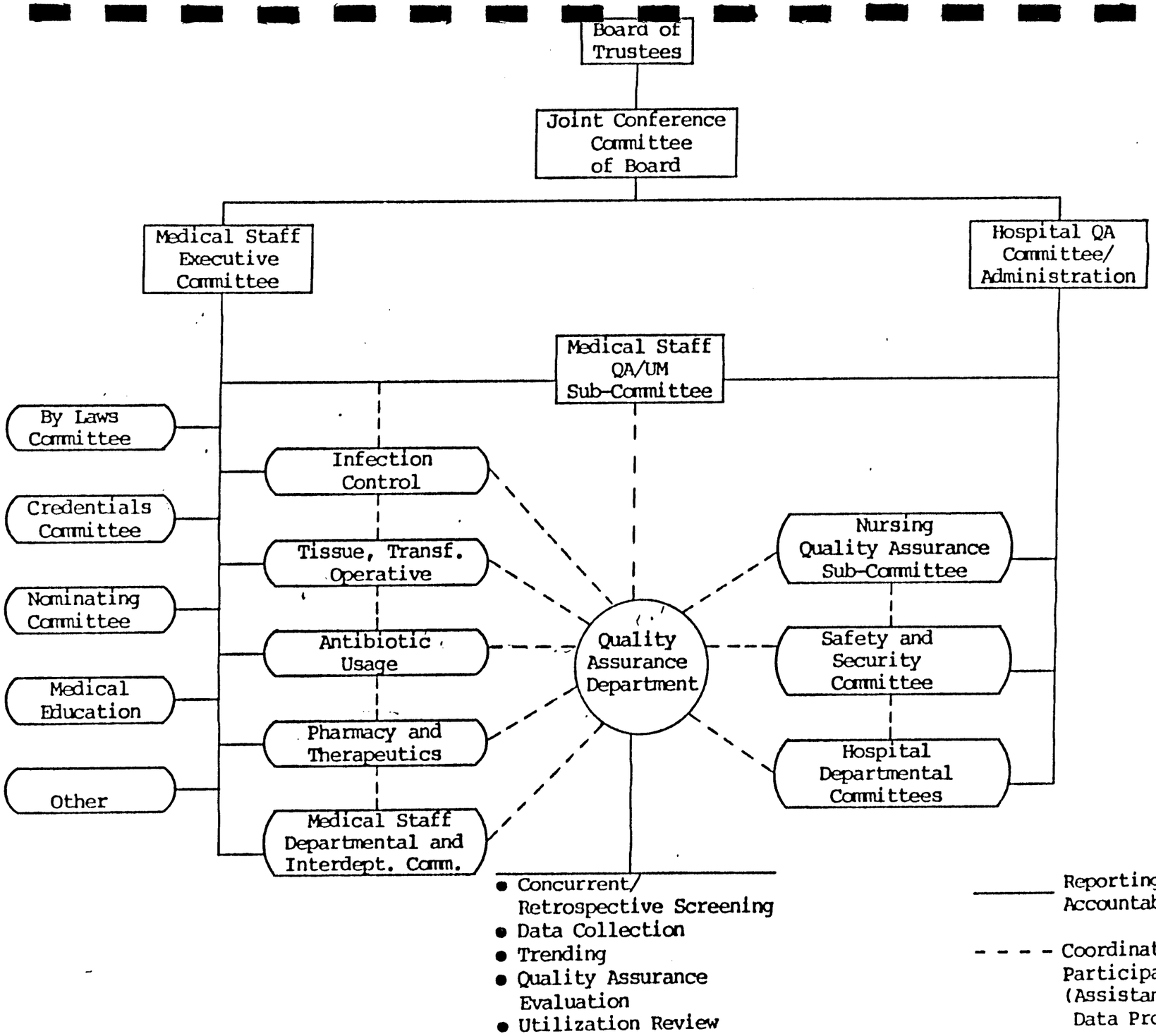


FIGURE 3.4: Q.A IN McGEE HOSPITAL, PITTSBURGH

Q.A roles of different professionals

Doctors

In most of the hospitals we visited (except one) a doctor was in overall charge of QA activity. In many cases this was a part-time job. The one exception was a lawyer.

In discussions with clinicians during the trip, JB asked what the reaction was to the "cook-book" approach to medicine in the USA. There were two views on protocols, the first was a familiar one - "a protocol becomes obsolete before it is written". The second was that protocols were welcomed - and were constantly reviewed and updated according to the latest information. In this way constructive criticism and consultation enabled everyone to keep up to date and ensured that protocols reflected current health care practice.

Nurses

A most striking feature of the U.S scene is that nurses are given considerable responsibility for medical QA. Some examples of this are:-

1 METRO PRE ADMISSION CERTIFICATION SCHEME

In a joint venture by Equitable Inc and Hospitals Corporation of America, a doctor intending to admit must phone in with data and answers to support. S/he will talk to a nurse, who will consult a computer system, and may use this conversational opportunity to "acquaint the doctor with the benefits available",

e.g: If you admit, then we'll pay 50%. If you treat outside hospital, then we'll pay 100%!

e.g: If you get the patient to have lab tests before admission, then we'll pay 100% of the cost. If you wait until the patient is admitted, then we'll pay 80%.

e.g: Do you really want to do these tonsils/this type of herniorraphy by same-day surgery? We have noted that complications are often reported

2 NURSES AS QA COORDINATORS

At MacGee hospital in Pittsburgh, all five of the coordinators appointed to liaise with doctors in departments on QA matters are nurses.

3 NURSES TO EXTRACT/ABSTRACT MEDICAL DATA

In implementating information systems for QA, it was found that nurses were often used for these functions.

4 NURSES TO CODE MEDICAL DATA

It was found (for instance at CPHA, at Sewickley Valley Hospital) that nurses were as quick and accurate as experienced medical records technicians. One opinion was that they found more codable items. The Health and Hospitals Corporation judged nurses as better than doctors at picking up medication errors.

5 NURSES JUDGE ADMISSION APPROPRIATENESS

For example, a utilisation nurse visits all inpatients admitted to hospital from a certain Health Maintenance Organisation. S/he checks all details of the admission to ensure that the doctor had admitted according to the set criteria agreed for that particular HMO.

Note: Patients at the Health America HMO receive up to 20 medical health visits per year and 60 hospital days per year within a specified cost.

6 NURSES TO PARTICIPATE IN SETTING SCREENING CRITERIA?

The Health and Hospitals Corporation judged this to be a plus point. There was no time to investigate further.

6 USE OF NURSES BY INSURERS FOR UTILISATION REVIEW

Nurses in this role were decribed as "bounty hunters" by hospital staff.

7 NURSES MONITOR MEDICAL STAFF USE OF MATERIALS

for instance whole blood (Appendix III.1), blood products and parenteral nutrition, and liaise with doctors on cheaper alternatives.

ACTION

1 Discuss role of nurses in Q.A with Chief Nursing Officer.

2 Suggest a twice-yearly report to the District Q.A Committee on usage of whole blood and blood products, and on parenteral nutrition.

3 Screening criteria for whole blood use to Dr Kenny.

4 HOSPITAL MANAGEMENT AND CONSUMER SERVICE

* WELCOME

The most noticable difference we observed between American hospitals and British ones, was the welcome patients and visitors received when they entered the hospital. Reception staff were very helpful and competent. Everyone was greeted politely - with a smile, and helped to find their way about the hospital. Some reception desks in the Brighton District are in stark contrast to those we saw in the States.

* PATIENT ACCOMMODATION

Most patients are cared for in single rooms or double rooms. The largest wards we saw (in about 12 hospitals) were four-bedded wards.

* SECURITY

We noticed much activity concerned with security in the hospitals. In most large hospitals we visited, a little tag is given to you by the receptionist with your name and destination noted on it. This has two functions: first it helps the receptionist to direct visitors, and second, helps from the security point of view; the person must state their destination and can be checked as they move about the hospital.

* STAFF TRAINING

Great attention is given to staff attitudes. At the McKeesport Hospital, Pittsburgh, staff have to attend nine hours of teaching on patient relations and communication course. (Appendix IV.1 shows an outline of the course). Course Goals for the participants included :

* explore ones own feelings about hospital situations and the effects of these feelings on communications.

* consider the impact of hospitalization and illness on patients and their families.

* increase skills in communication with patients and visitors.

* MEDICAL KNOWLEDGE OF NON-MEDICAL STAFF

Most personnel, including administrators, demonstrated a high level of medical knowledge.

* RECOGNITION OF STAFF SERVICE

Two schemes we noted were:-

Hospitality Recognition Week. The person or service area which was the most welcoming in the hospital would be presented with a certificate from the General Manager.

Employee Recognition Week. A pamphlet is produced annually, showing a list of employees who have worked in the hospital for 40 years, 30 years, 20 years and ten years. These employees are given certificates and a token of appreciation at a ceremony.

* CONSUMER AFFAIRS RESEARCH

At the Washington Hospital Center a research programme entitled "Humanising Health Care" has pioneered surveys into consumer satisfaction. Humanism in health care is defined as "the manner in which we, as health care providers, serve patients by considering their physical, emotional, psychological and spiritual needs".
The 3 R's (Recognition, Respect and Rewards) feature as important components of hospitality programmes in American hospitals.
Consumer satisfaction is investigated keenly by HMOs.

* WAITING TIMES (AT ONE HMO)

Patients wait an average of 7 minutes in the waiting room before they are seen. This is the standard, and is checked every month. Individual doctors' waiting times are displayed monthly and if any doctor is found to keep patients waiting, this is investigated.

Telephone surveys are conducted every 3 months to find out how long it takes staff to answer the phone, and how they answer it.

ACTION

1 Recommend that regular telephone surveys are carried out in B.H.D, and the results reported in the "Bulletin".

2 Discuss with the D.C.A, the questionnaires shown in Appendices IV.2 and IV.3.

3 Discuss with consultants, possible benefits from inviting administrators to attend some ward rounds. Discuss with the Director of Personnel, ways of providing time for non medical staff to enhance their medical knowledge.

5 QUALITY, COST AND COST CONTROL

We found much evidence that the relationship among these headings is now viewed as important in USA, but people expressed the concern in different ways. For instance, this diagram was used:-

Accountability = Quality + Utilisation + Efficiency

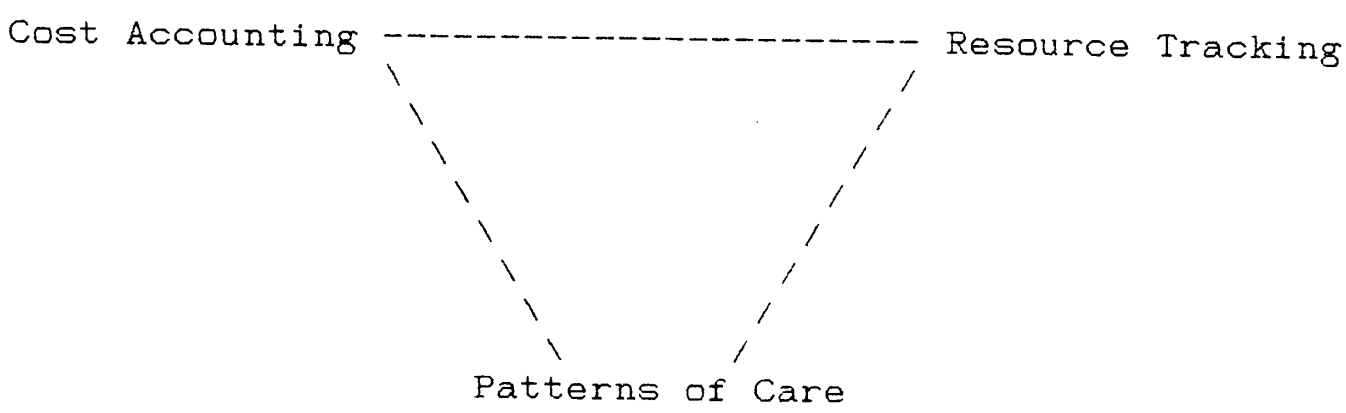
Providers perspective ⇒ accountability

Payers perspective ⇒ quality

Consumers' perspective ⇒ satisfaction

(in a presentation at Metropolitan Life)

and this:-



in a workshop at the MEDINFO conference. The Edward Hines Jnr Veterans Admin Hospital has used the concept of PATTERNS OF CARE in an information system to relate the three corners of this triangle. They call this the Decentralised Medical Management System (DMMS). The system itself (a large one built within MUMPS) is of less interest for our purposes than its principles, which reflect Brighton's position.....

PRINCIPLES OF DMMS

In an attempt to answer the question "what level of resources is needed to provide quality care?", physicians decide the PATTERNS OF CARE shown in the above diagram. Doctors were keen to participate in this, apparently, *FEELING THAT EXPECTATIONS HAD RISEN BEYOND THE RESOURCE CAPACITY TO MEET THEM* (our emphasis).

Patterns of Care are specific to the hospital, stating the resources deemed necessary by the doctors for treatment of a given DRG. Just the top 20 or 30 DRGs are being studied in this way. In some cases, e.g DRG 14 - cerebral vascular accident, a DRG was divided into subsets. In other cases, e.g DRGs 89/90 - simple pneumonia and pleurisy, DRGs were combined to form a single group.

Included in the categories of resources needed for quality care are:-

mandatory orders
optional orders
exceptional orders
contraindicated orders.

Exception messages are reported routinely.
Another report is of "incidents" such as medication error, procedure error or fall - the purpose of this is to identify areas which may require further study by Risk Management.

An example of contraindication was: more than three CAT scans during a hospital stay unless there was a change in the patient's mental status.

The Resource Tracking System collects the tests, procedures, treatments and bed days used for each patient (this might be described as utilisation review). The Cost Accounting System provides procedure specific cost data. Aside from being told that these costs were produced after interviews with staff from the patient care services, we were unable to find out how they were calculated.

OTHER SYSTEMS

The Commission on Professional & Hospital Activities (CPHA) is developing a Planning, Budgeting and Clinical Management System (PBCS). This is briefly discussed in section 8.3 of the report.

ACTION

1 Consider using the DMMS classification of orders.

2 Consider the Patterns of Care approach, and invite comment from selected consultants.

3 Write to Edward Hines hospital, asking to be sent copies of a few Patterns of Care.

6 MANAGEMENT BUDGETING at Johns Hopkins Memorial Hospital, Baltimore

The state of Maryland is not yet using prospective payment systems, but DRGs are being used as a management tool. Since 1979, Johns Hopkins has been operating under Guaranteed Inpatient Revenue (GIR) - this is a revenue containment system in which targets are built up on the basis of approved billing by DRG - but 1987 may be the last year of this guaranteed funding and the hospital has a keen interest in cost-controlling measures.

Budget Setting

1 In August, the Office of Program Development and Marketing issues Program guidelines and planning guidelines for small capital (less than $50,000).

A discharge target is set for the hospital for the year.

2 At the end of October, the office of Operations Planning and Budgets (OPB) issues Planning Guidelines

The full budget cycle timetable is shown in Appendix VI.

3 Functional Unit Directors (budget holders) are all doctors - with a financial director, director of nursing, and administrator reporting to each.

4 Budgets are set by discharges, not patient days. This may be only a cosmetic change, but the Operations Planning & Budgets department believe it makes budget holders more output orientated.

5 For workload forecasting, doctors seemingly accept historical data on the percentage of admissions that are likely to be emergencies. The hospital as a whole is committed to accepting emergencies ad lib.

Budgets are seasonally-adjusted on the same basis.

6 A second opinion for elective surgical admissions is mandatory in Maryland.

Monitoring & Reporting

1 The normal report format is:-

BUDG	VOLUME	CASEMIX (by DRG)	ADJUSTED-BUDG	ACTUAL	VARIANCE

2 The NURSING department at Johns Hopkins is working on the severity-within-DRG issue for the Operations Planning and Budgets dept.

3 Large monthly budget reports are produced. Length-of-stay and volume variance reports go to the Directors, who decide how to use them. In practice they will tend to look at the big DRGs first.

OPB will pick up emerging cost variances. They go out to the departments asking what the reasons are.

4 The expressed philosophy is very much that of progressive focus, expressed as: Pick up those Services that seem to be out of control at the bottom line....look in more detail at those wards, clinics, whatever.....Still got problems? set up finer enquiries.

Handling of variances

1 Underspends:-

An incentive programme was to begin at the end of 1986. Underspends will be taken out of the department's budget and banked. The budget holder will get back 50% of the sum the following year.

2 Overspends:-

The VP Finance may issue guidelines to Directors of Service at or about month 10, on how savings are to be made. One example would be a freeze on hiring of staff.

Volume-induced flexing does not discriminate between emergency and elective forecast errors.

ACTION

1 Copy of this report section with 1987 Planning Guidelines to Mr J.Henry, drawing Mr R.Prior's attention to Section III on personal computer acquisition.

2 Appendix VI.2 (example bill for patient stay) to Mr Henry.

3 1987 Annual Operating Plan to Mr Henry for information, asking for it to be passed on to Miss L.Hyde.

7 ACCREDITATION

Accreditation is professional recognition of facilities and organisations that strive to provide high quality health care. Performance is evaluated against nationally recognised standards.

Joint Commission on Accreditation of Hospitals (JCAH)

JCAH (formed in 1951) is the leader of voluntary efforts to maintain and improve the quality of health care provided to the American public. JCAH is governed by representatives of five national care organisations: the American College of Physicians, the American College of Surgeons, the American Dental Association, the American Hospital Association, the American Medical Association, and also a public member.

1 JCAH promotes quality care by working with leaders of the health care field to develop standards, by applying the standards during on-site surveys, and by awarding accreditation to facilities, programmes and organisations that meet the intent of the standards.

Throughout the accreditation process, JCAH stresses that health care professionals should take responsibility for evaluating and improving the quality of care they provide. JCAH's role is to help facilities achieve this goal, through consultation, education and evaluation. Forty out of the fifty states in the USA have accepted JCAH instead of their own state system for inspection/ accreditation.

2 The Development of Standards

A 20% random sample of all accredited hospitals is used when establishing a new standard. The proposed standard is sent out for consultation, a field review is carried out, the proposal is revised in the light of comments. This process takes about 2 years for a new standard to be developed, accepted and proved to be surveyable.

3 Inspection is carried out every three years by a team consisting of a physician, nurse, administrator and technician. Before carring out the survey a pre-survey conference is arranged at the hospital in order to explain the purpose of the visit which is education, consultation as well as evaluation.

4 A Standard Evaluation Book is filled out by each member of the team.

The areas for which standards had been developed by the time of the visit were: acute hospitals, ambulatory health care (out-patient facilities), home care, psychiatric care, long term care and, more recently, hospice care and substance abuse facilities.

The outline for a QA programme for an acute hospital is shown as Appendix VII. We have examples of QA programmes for other types of facility.

There are about 5,000 hospitals in the USA, half the hospitals in the USA have less than 100 beds. There are 19,000 Nursing Homes and only 1% of these establishments are accredited. This is a major area of concern.

ACTION

1 The Brighton QA Department to assess itself using the criteria laid down for an acute hospital QA programme and possibly some of the others e.g. out-patient and long-term care.

2 Recommend that Unit General Managers consider whether use of the process of accreditation would help them to evaluate the facilities they are providing, and to set priorities for action.

3 Compare the facilities provided in some of our hospitals using one of the JCAH manuals, bearing in mind that not all of the manual may be relevant to a U.K hospital..

8 COMPUTER SYSTEMS

Medical Management Analysis (MMA)

Seen at MacGee Women's Hospital, Pittsburgh. The MMA information systems relate: Quality Assurance, Utilization Review, Risk Management Infection Control, and Medical Staff Management. This report concentrates on QA. The main principle underlying the system is to focus onto cases for peer review by doctors, using general and specific criteria for unusual events and rates.

GENERIC SCREENING CRITERIA

Generic screening criteria are not peculiar to MMA, but MMA's elaboration on them appeared special. *Comments below in italics are from GS.*

* 23 Screening criteria are defined. E.g:-

No 1 Admission for adverse results of outpatient management

No 4 Unplanned removal, injury, or repair of organ or structure during surgery, invasive procedure, or vaginal delivery

No 5 Unplanned return to Operating Room or Delivery Room

* These criteria are made more specific by specialty. E.g:-

Anaesthesia

No 1 -

No 4
a. Broken or missing teeth
b. Scleral oedema
c. Corneal abrasions
d. Burn
e. Skin problem from I.V
f. Vocal cord injury
g. Other

No 5 Return to OR for anaesthesia complication

Obstetrics

No 1
a. Membranes ruptured 24 hours or more prior to delivery
b. Third trimester bleeding
c. Undiagnosed breech

(nine more)

No 4
a. Forceps injury, maternal
b. Forceps injury, foetal
c. Fourth Degree laceration
d. Uterine rupture from Pitocin
e. Urinary tract injury
f. Injury to foetus during delivery

No 5
a. Unplanned or emergeny caesarian section
b. Return to the delivery room

Paediatric Medicine

No 1
a. Dehydration (loss of 7% of body weight)
b. Severe electrolyte abnormality on admission, e.g Na+ >150 or <130; K+ >6.0 or <3.0

(six more)

A full list of the 23 generic criteria is given in Appendix VIII.1 with specific criteria for: the above specialties, Radiology, Cardiology, Respiratory Medicine. The purpose of the above examples is to illustrate the different kinds of criteria.

* Hospital specific criteria may also be developed.

An example is given in Appendix VIII.2 for Transfusion reactions.

* Procedure Specific screening criteria may be developed

Examples are given in Appendices VIII.3 and .4 for hysterectomy and laparoscopy. At MacGee, this is being done for the top ten procedures to start with; the QA Director counsels restraint.

Throughout, it is stressed that the criteria are for screening patient care for subsequent physician review and do not constitute standards of care.

SECONDARY REVIEW

The QA Coordinator has a checklist for the Secondary Reviewer:-

1 Is the whole of the chart (casenotes) needed for the review?

2 Are all significant reports in the record?

3 Is the outpatient record relevant? If so, obtain.

4 Was an incident report filed? If so, obtain.

5 Did the risk manager investigate? If so, what results?

6 Is a trend developing?

The secondary reviewer is responsible for determining five things:-

i If a variation constitutes an Adverse Patient Occurrence (APO)

Confirmation as an APO does not necessarily imply provider fault, they say.

ii Assessment of standard of care

This can be done only by a peer.

A simple score of +, -, +/- is used

iii Attribution of the APO

For the purpose of trend analysis, not assignment of fault, so they say

iv Assignment of a severity code.

This is not the same as the severity scores used by MEDISGRPS - see section 8.2 - but a hospital-defined code expressing the seriousness of the event. An example of such a scheme is given in Appendix VIII.5.

v Incidental findings during chart review.

Evaluation of cases identified by occurrence screening can produce learning if handled that way, say the department at MacGee - who see it as an opportunity for peer education, not punitive review.

Findings in a case can stimulate creation of other screening criteria to detect similar cases in the future. For instance, a case reported in the August 86 QRC Advisor led to the following criteria:-

* *undiagnosed primary site for metastatic carcinoma*
* *occult blood in stool without supportive diagnosis for its presence*
* *iron deficiency anaemia in a male without identified site of bleeding*
* *poor preparation of barium enema*
* *finding of GI lesion at surgery not previously identified by x-ray or endoscopy*

THE MMA COMPUTER SYSTEM

Reports

Examples are given in Appendix VIII.6 of the kind of reports that will be produced by the system.

Costs

on IBM PC - $30,000, single user, hardware and software, whole hospital

Staffing - MMA recommend the following:

Discharges per month Screening	Staff for: Concurrent Screening	Retrospective
500	1	0.5
1,000	2	1
1,500	3	1.5
2,000	4	2

claiming that one secretary can staff the QA department.

MacGee hopes to manage with less than this level of staffing. At present in MacGee, the QA manager reports to the Director of Utilisation Management, who reports to the Assistant VP Finance. There are five QA coordinators (all nurses) and 1.5 secretaries.

MEDICAL MANAGEMENT ANALYSIS INFORMATION SERVICE

Published bimonthly by MMAI, 24654 Rodeo Flat Road, Auburn CA 95603. Cost $110 per year.

This contains:-

* Reports of specific screening criteria developed by doctors in various places.

  An example for Respiratory Medicine is shown in Appendix VIII.7.

* "Criterion Clues" - notes on how to use the generic criteria

* Reports of other Q.A initiatives.

The following example describes a quality improvement in orthopaedics which has saved a hospital $1500 per patient:-

HIP REPLACEMENT - length of stay reduction to 9 days from 18.

Surgery scheduled one month in advance. During that time, patients donate two units of their own blood to be used during surgery. Infection has been found to be less of a risk with autotransfusion.

During the month, preadmission tests are done to rule out medical problems.

Pre-surgery physical therapy sessions are performed to familiarize patients with the post-surgery protocol

The size of the surgical incision was modified to reduce blood loss.

Physical therapy begins earlier (first or second post-operative day). By day three, most patients ambulatory with a walker.

Physical therapy department now staffed seven days a week.

Patients put on a continuous passive motion machine in the recovery room, and daily fibrinogen scans obtained.

Reference: *"Revising procedures for hip surgery cuts costs, LOS", Hospitals, 16 June 1985, pp 75-77*

* Worksheets for Q.A use are presented. For instance, the mortality review worksheet and the cardiopulmonary arrest worksheet shown in Appendix VIII.8 and .9. Similar worksheets from other sources are in Appendix VIII.16.

MEDISGRPS (Medical Illness Severity Grouping System)

* uses: Key Clinical Findings (KCFs) from chart review and data abstracts (incl. lab tests, radiology etc), pre-admission findings if relevant, coded symptoms on admission physical exam, to assign a severity group:

  0 No body systems compromised, e.g back pain, varicose veins.

  1 Minimal findings, indicating low potential for organ failure, e.g duodenal ulcer, gallstones.

  2 Either acute findings connote a short time course with unclear potential for organ failure, or severe findings with high potential for FUTURE organ failure, e.g bleeding duodenal ulcer, appendicitis.

  3 Both acute and severe findings indicating high potential for imminent organ failure, e.g heart failure, perforated appendix.

  4 Critical findings indicating the presence of organ failure, e.g cardiac arrest, renal shutdown, ruptured aneurysm.

Example - representative KCFs for principal diagnosis of M.I:-

KCF CATEGORY	S E V E R I T Y G R O U P			
	1	2	3	4
ECG	Ischaemia	M.I (acute) (extension)	3rd degree heart block	
CXR	Cardiomegaly		Congestive heart failure	
Physical Exam	Rales			Coma
Cardiac cath		Cardio-myopathy		
Lab	pO_2 60-69	pO_2 45-59	pO_2 <45	
Vital Signs	respirations 25-32	respirations >32		

Sometimes the rules are straightforward, sometimes combinations. When two, and sometimes three or more, KCFs occur at the same severity level, the scores are aggregated in such a way as to assign the patient to the next highest severity level. Symptom weightings are not revealed by MEDIQUAL, so doctors can't play the system.

* At admission (R1, or first review), severity is calculated for all patients, as soon as KCFs available. Recalulated after n days if patient still in (R2) (n=10 for non-surg patients, 6 post-op days for surg patients). MORBIDITY defined as one or more KCFs in groups 2,3, or 4 occuring from day 3 to day 9 (inclusive) of the stay. In MEDISGRPS, "non morbid" means "no worse", not necessarily cured. There's a chronicity element which provides some indication.

* MEDISGRPS groups on reasons for admission (like chest pain, shortness of breath, admission chemotherapy) rather than diagnosis. Claimed that the top ten DRGs in Medicine account for 29% of patients, but top 10 MEDISGRPS reasons account for 63%.

* procedure monitoring by appropriateness and cost.

* unusual occurrences. 25 of these (Appendix VIII.11).

* individual index and listings for doctors of caseload by reason by severity. Charges by reason are shown.

IMPLEMENTATION

For a given physician, what are his or her total charges by DRG c.f severity breakdown c.f LoS etc? The point of MEDISGRPS is to classify by reason for admission, not DRG, but analysis can be by DRGs too. SVH have been able to demonstrate to the public that some apparently high death rates can be accounted for by high severity. Also, businesses now want to know what they are getting for their dollars - and are pressing hospitals for answers.

Need about a year's data in to run MEDISGRPS successfully (so that hospital-based comparative standards have credibility, and so individual doctors' workload can be studied) but the hospital is staging in, choosing medicine first, to provide some degree of success early on.

Easy indicators:- doctors with many cases of 0 severity,
unusual occurrences (can add hospital specific ones,
acute care transfers,
LoS outliers.

But the idea is to ask doctors to pull out cases that they want to look at.

Various reports in use in the hospital are shown, and annotated, in Appendix VIII.12.

* AN ALERTING/SCANNING APPROACH to selecting cases for doctors to judge on. Broad brush, to allow focussing of physician review.

* TRENDS are the thing:

  in indicators during a treatment episode, across time for the hospital:-

  mortality/morbidity viewable as increase in severity. Up to physicians to determine if process-related for a given case.

  can relate to Average Weighted Severity (exception report if 0.3 excess).

  can look at mortality figures in relation to initial severity (good!).

* DISTRIBUTION. At present, for a given DRG, reimbursement asssumes all at severity 2 (say?). MEDISGRPS users are trying to convince congress to weight:-

AWS	Weight
0	0
1	0.5
2	0.75
3	1.00
4	1.25

Might look at distribution templates (medicine normal around mean of 2, say. Paediatrics skewed left, mode 1. Surgery maybe falling monotonically from a low score because most surgery is elective. *<Orthopaedics?>*.

A 0 severity doesn't mean unnecessary, of course, the score is based on how much body systems are compromised. The profiles would be age corrected, preferably.

In SVH, doctors said "We've always done QA", just as in UK, but benefits of MEDISGRPS were recognised.

Some changes were found to be necessary in management and administration:

- goal re-prioritising (!) on part of administrators and doctors.
- consistent apportionment of ancillary charges.
- commitment to rapid data collection/compilation.
- admin people to put down real commitment (prepared to take people away from other tasks to do it).

* ABSTRACTING

MEDISGRPS abstracts present the KCF position chronologically. Claimed that more than two thirds of abstracts reviewed do no need further chart review.

* COSTS for this 230 bed hospital:-

$100,000 first year (and allow 6 months startup time):

computers (1 Compaq Deskpro 386, 1 other IBM compatible)
year 1 orientation
software
physician orientation
hot line

$20-40,000 annually thereafter

2.75 f.t.e for abstracting

(NURSES and medical records technicians found to be O.K. Nurses speed and accuracy were both higher than med recs techs but med recs techs won't look for KCFs that aren't clearly recorded)

1.75 f.t.e for processing needs.

C. P. H. A.

The Commission on Professional and Hospital Activities (C.P.H.A) in Ann Arbor, Michigan, is a not-for-profit (but expensive) private company that has achieved high status and recognition by hospitals, professional associations and government. Its products and services fall into three groups:

I Established information products and services.
II Products under development.
III Research contracts from hospitals or professional associations.

I Established Products

PROFESSIONAL ACTIVITY STUDY (PAS)

PAS resembles a voluntary, more powerful, more user-accessible, version of H.A.A. In 1955, C.P.H.A's mission was to improve the quality of care by improving the quality of comparative patient care data. C.P.H.A has been involved in the development of classification systems: including ICD-9, and finally ICD-9-CM (which uses an extra digit to provide greater resolution). Now the PAS database contains 160 million patient records from over 2,000 U.S and Canadian hospitals.

The PAS system works as follows:-

1) Discharge data are collected and entered, either using a PAS on-site abstractor or from the hospital's existing medical records computer. As elsewhere in U.S.A, nurses and medical records staff may both be used.
2 Either as tape or floppy disk, data goes to C.P.H.A to be entered into the PAS database.
3 Reports are returned on paper or microfiche, providing comparisons with other hospitals.

PAS (and this year's expanded function version, PAS+) are, as they stand, of no interest to us. But it has been used as a basis for development of products that might be.....

QUALITY ASSURANCE MONITOR (QAM)

About one third of the one-page PAS case abstract consists of data that C.P.H.A describes as "clinically rich". This is used by the QAM computer system to provide three levels of report:-

1 Priority for investigation. Displays the hospital's overall performance.
2 Monitor profile. A finer analysis of specific patient groups.
3 Audit trail listings. Individual patient summaries.

C.P.H.A's own publicity document is a crisp account of how QAM operates - it is shown in Appendix VIII.13a. A legible list of the data items collected is shown in Appendix VIII.13b. More detailed examples of the use of QAM have been prepared by GS - these are given in Appendix VIII.14.

II Products Under Development

THE PLANNING, BUDGETING and CLINICAL MANAGEMENT SYSTEM

PBCS has been under development since 1980 by a consortium of four organisations including C.P.H.A. It will respond to what is seen as a current need to merge clinical information with financial data. PBCS will compare a hospital's profit performance by DRG and physician to national data held by C.P.H.A. No demonstration or report examples were available at the time of our U.S.A visit.

BASELINE

Baseline is software providing interactive access to the C.P.H.A database. It provides a powerful and easy-to-use query language, analytical capabilities, statistical analysis and graphics packages...and electronic conferencing. As an example of what could be done with H.A.A, it is merely mouth-watering. But the example of C.P.H.A's publicity material given in Appendix VIII.15 gives inspiration on presentation of our own material.

DISCHARGE SUMMARY SYSTEM (DSS)

DSS will replace PAS eventually, C.P.H.A hope. The idea is that Medical Records staff build a draft discharge summary from information on the patient's chart, for approval/correction and signature by the doctor. At first sight, DSS seems to belong to the future, but the product is a β system at present (meaning that it is being tested for program bugs more than for its functions).

The heart of the system is a knowledge base created by experts from C.P.H.A, the American College of Physicians and the American College of Surgeons. It contains advice on management and medication based on the admitting diagnosis entered.

Data entry screens inhibit the entry of irrelevant data. 118 admission indicator groups generate indications (only) of steps that should be followed in managements/investigations. Screen highlighting is used to show important entries (the user can ignore these). "Reason for admission" can be free text.

Reminders on information needed on discharge (medication, drugs, exercise...) provide reminders to doctors, but again for most of them, the doctor can choose to ignore them if s/he wishes.

(It is impossible to resist reporting that the name of the hospital used for demonstration, inspired by the famous Mount Sinai Mercy Hospital, was Mount Cyanide Merciless Hospital).

COSTS OF C.P.H.A. PRODUCTS

Nominally, costs are as follows:-

PAS+

Priced on a per discharge basis, depending on the length of the contract, and whether the contract is part of an association.

QAM

15c per discharge for the standard reports

DSS

$100,000 over three years for the software licence, operating fees and maintenance. AT & T 3B2/1400 hardware is used at present, with 72mB hard disk, run under UNIX.

But this particular iceberg has many costs under the surface.

III Research Activities

C.P.H.A is engaged in an impressive array of research activities. Relevant projects are studied in sections 2 and 9 of this report.

Other QA software packages

Time did not permit examination of all of the software packages parading under the QA banner. For instance:-

PATIENT CARE MONITORING SYSTEM

Quality Assessment software with graphics. Stress on risk management. This system was not seen, no recommendations heard.

INTEGRATED QA RISK MANAGEMENT SYSTEM

Moderately priced at $5500 for software, documentation, telephone support. Reports seen were in an unappealing format. Items reported did not seem very suitable for U.K.

SYN.OP.SYS (Synergic Occurrence Prevention)

Unfriendly cryptic output would need intermediary from QA Dept to turn them into reports usable by doctors, but could be interesting if cheap enough (price not known). The classification of occurrences seems to be no advance on MMA.

IRIS

Not the British IRIS! This is presented as a very modular system for: utilization review, infection control, surgical data review. Not an off-the-shelf product; the corporation is trying to sell a lengthy consultancy relationship. No favourable comments heard elsewhere.

DECENTRALISED MEDICAL MANAGEMENT SYSTEM

The principles by which this system was developed at the Edward Hines Jnr VA hospital are discussed in section 5 of this report. The computer system itself did not appear to be translatable.

Computing in the near future

1 Computer-Assisted Medical Diagnosis and Management.

It was no surprise to find computer-assisted diagnosis at a more advanced stage of implementation than in U.K, but two particular features of new products are notable:

- Intelligent (Knowledge-Based) Systems. "Expert Systems" for assistance with diagnosis have been around for at least a decade, but the well-known ones (MYCIN, INTERNIST etc) have worked on large computers. The fruits of the research & development are now starting to pay off in affordable systems on small computers.

- Other guidance given by systems. In the remarkable CPHA Discharge Summary system, certain data entry fields generate relevant checklists of (optional) reminders to the doctor of items relevant to decision making.

Discussions at the MEDINFO conference and elsewhere seemed to indicate that doctors in U.S.A are starting to see these systems as useful decision support tools, not as threats to clinical freedom. These are still early days, however, and we probably spoke to more enthusiasts than doubters.

2 Computer Screening for hospital-acquired infection

A report in Computers and Medicine (August 1986) noted that computer screening can find more hospital-acquired infections in about one third of the time when compared to traditional methods involving human specialists. It also noted that alerts from the computer identified 37 patients (among 875 in a two-month test period) not receiving appropriate antibiotics.

3 Terminals and Telecommunications

It is already noticeable that there are a great many screens in an average hospital. The use of telecommunications for remote and peripatetic computer work is still fairly restricted, although we heard of software maintenance being carried out in this way.

ACTION

MMA:-

1 Consider obtaining the MMA manual. This costs $300, could be used to develop our own ideas even if we cannot purchase the system.

2 Investigate subscription to the MMA Information Service for ourselves or the postgraduate centre library. At $110 per annum, it is fairly costly, but could be of interest to a wide clinical readership.

3 Ask QA Committee for their views on the generic criteria, stressing that the whole point is to select cases for subsequent review by DOCTORS.

4 Show a typical set of specific criteria, and invite (some) consultants to produce some of their own.

5 Appraise review worksheets.

6 Surgical screening criteria are being developed at MacGee for just the "top ten" procedures. We could try the same approach.

Note the Generic Quality Screens from Empire State Medical, Scientific and Educational Foundation, Inc. One page of these is shown in Appendix VIII.10. It represents an attempt at codes to apply to all utilization reviews.

MEDISGRPS:-

7. Tell MEDIQUAL we need more than this one example of KCF ⇒ severity in order to decide whether to buy.

8. Compare notes with the Bristol district which sent two visitors to MEDIQUAL.

9. Propose that we set up an experiment in one specialty to draw up KCFs.

C.P.H.A:-

10 Study the form of QAM output, and steal ideas. Consider the C.P.H.A research reports.

OTHERS:-

11 Send for details of the QA/Risk Management computer system and of SYN.OP.SYS, asking about demo disks.

12 Copy of article on computer-assisted hospital infection screening to Clinical Nurse Manager (Infection Control).

9 RESEARCH

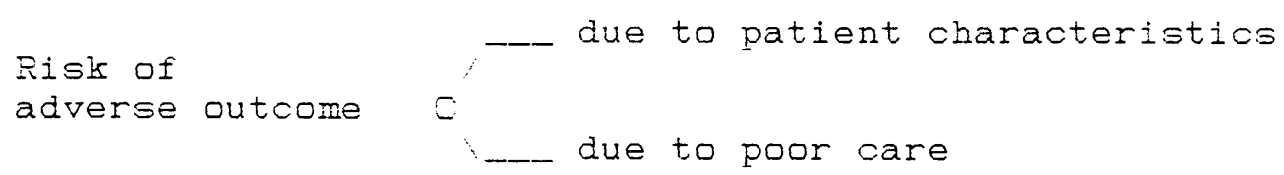
Indices of hospital efficiency and quality by mathematical modelling

Ed Kobrinski at C.P.H.A has started a project using Data Envelopment Analysis (DEA) to compare hospital efficiencies, defined as the ratio of weighted outputs to weighted inputs. Using linear programming, DEA searches for that set of weights which can produce the highest efficiency. The efficiency score produced by using its own weights will naturally be close to the maximun of 1, so a cross-efficiency score is calculated by applying other hospitals' weights to the particular hospital's input and output data.

For our purposes, the significance of this work lies in its intention to relate changes in efficiency to changes in quality of care...

QUALITY INDICES

Donabedian's structure-process-outcome framework is being used to develop a group of indices; in management terms, the aim seems to be to control costs that are inimical to quality. Where appropriate, these will be broken down by DRG cluster, so as to characterise cases in a way which shows:



Look for indicator values outside the range that looks like it's accounted for by patient differences.

Process Measures - Tracers

Tracers (used by several other researchers) are to be used in a variety of ways, on the assumption that the manner in which a doctor or group of doctors routinely admisters care for the tracer ailments will be an indicator of the general quality of care.

Outcome Measures

Three outcome measures are to be used:-

1 Rate of occurrence of certain complications/injuries during the patient's stay (short term negative outcomes).

Because thses are infrequent events, they will not be DRG-specific. Examples are: wound infections, wound disruptions, return to operating room for specified procedures, adverse reactions to antibiotics and other drugs, transfusion reactions, reactions to lumbar puncture; during stay for childbirth or minor surgery were there complications such as seizure, organ failure, cardiac arrest, transfer to ICU/CCU, or return to surgery.

2 Severity Adjusted Mortality Index (SAMI).

This will be calculated by "cluster" of DRG. Some severity measures such as MEDISGRPS and APACHE were rejected because they rely on creation of new records or require clinical judgement. The two measures to be used are comorbidities/complications and Body Systems. C.P.H.A analysis showed that the existence of certain comorbidities/complications in critical body systems (Major Diagnostic Categories) has a stronger relation to whether a patient dies than does the simple Body Systems measure. There are other patient characteristics (obtainable from the C.P.H.A database) associated with a higher risk of death.

The SAMI is calculated by comparing expected deaths (adjusted for case complexity) with actual deaths for that hospital.

3 Case-Mix Adjusted Measure of Unscheduled Re-admissions to the same hospital.

Cases will be excluded where re-admission was intended. Then for each DRG cluster, the C.P.H.A database will be used to determine the relative effects of a list of six factors on re-admissions within 30 days of discharge. The ratio of actual to expected re-admissions will then be calculated for each hospital.

ACTION

1 Study, revise and expand C.P.H.A's list of tracers for possible use in Brighton.

2 Contact C.P.H.A in mid 1987 for copy of second report.

10 MISCELLANY

1 A general purpose health questionnaire sent to patients, results fed into a computer system.

The questionnaire is copied in Appendix X.1. It may be worth a look.

2 Planning.

"Is Counting the Dead Enough?"
A slim report from United Hospitals Fund of New York, on strategies for monitoring health needs in New York City. Readable food for thought for our planners.

In general, service planning (via Certificate of Need Applications, for instance) was just as political as in U.K, but carried out at far higher speed. One idea we might use (but was poorly used in Washington DC) is that of CONSORTIA. Although hospitals are in competition, a number of hospitals might band together for approval of a service development, against a powerful common enemy hospital. Neighbouring districts in the N.H.S might take the same stance?

3 Monitoring and Evaluation of Pharmaceutical services. The November 85 issue of QRC Advisor drew attention to the multiplicity of people involved in prescribing and administering drugs, and presented some interesting checklists and proformae for regular monitoring of pharmaceutical services.

4 Food-Drug Interactions. Notes in QRC Advisor July 86.

ACTION

Distribute reports cited above:-

1 to DQA for discussion at regular QA Dept meeting.

2 to Miss L.Hyde, inviting discussion of the consortium approach. Discuss further with JB.

3 to District Pharmaceutical Officer.

4 to District Dietitian for information.

A P P E N D I C E S

VI.1 Johns Hopkins budget cycle timetable.

VI.2 An example bill for hospital stay.

VII Outline QA Programme (JCAH)

VIII.1 MMI Generic Screening Criteria.

VIII.2 .. Specific Criteria for transfusion reactions.

VIII.3 .. Criteria for hysterectomy.

VIII.4 .. Criteria for laparoscopy.

VIII.5 .. Severity codes (examples).

VIII.6 .. Reports (examples).

VIII.7 .. Criteria for respiratory medicine.

VIII.8 .. Mortality review worksheet.

VIII.9 .. Cardiopulmonary arrest worksheet.

VIII.10 Empire State MSE Foundation - generic screens.

VIII.11 MEDISGRPS unusual occurrences.

VIII.12 .. Reports (examples)

VIII.13a QAM summary.

VIII.13b .. data items.

VIII.14 .. - an example of detailed use.

VIII.15 C.P.H.A publicity material.

VIII.16 Various worksheets for reporting Q.A activities.

X. A general purpose health questionnaire.

(Please note: only Appendix I is included with the report. All other appendices are to be issued selectively and separately after checking the copyright position).

APPENDIX I ITINERARIES

VISITS MADE BY GEOFF STEVENS

Mon 27 Oct	George Washington University Hospital, Washington D.C. (09.00-16.30)
	Kaiser Permanente (17.00-18.00)
Tue 26 Oct	MEDINFO 86 conference, Washington D.C. (09.30-20.30)
Wed 29 Oct	Johns Hopkins University Hospital, Baltimore. (14.00-16.00)
Thu 30 Oct	Sewickley Valley Hospital, Sewickley, PA. (09.00-15.45)
Fri 31 Oct	MacGee Women's Hospital, Pittsburgh. (10.00-13.00)
Mon 3 Nov	Commission on Professional and Hospital Activities, Ann Arbor, Michigan. (09.15-16.45)
Tue 4 Nov	University of Michigan, School of Public Health. (09.30-12.30)
Wed 5 Nov	Roosevelt Hospital, New York City. (10.00-12.00)
	Metropolitan Life Assurance, New York City. (14.00-16.00)
Thu 6 Nov	Health & Hospitals Corporation, New York City. (09.30-12.00)
	United Hospitals Fund, New York City. (13.00-15.30)

EXCHANGE PROGRAMME FOR DR JENNIFER BENNETT

Date	Hospital		
27.10.86	George Washington Medical Centre in Washington	9.00 - 10.30	Tour of Hospital
		10.30 - 11.30	Leroy Charles Assistant Administrator for Health Planning
		11.30 - 1.00	Lunch with Mr Bardi, Mr Allenberger, Mr Chaufournier (Previous exchange visitors)
		1.00 - 2.00	Surgery Profession Advisory Group (QA) Parks Conference Room. Suite 250 O N
		2.00 - 3.00	Roy Reynolds, Associate Director, Management Information Systems 2020 K Street Suite 400
		3.30 - 4.30	Richard Bailey, Associate Director, Financial Services 2520 L Street NW Suite 4095
	Kaiser Permanente Group Washington	5.00 - 6.00	Dr Johnson D Johnson, Medical Director
28.10.86	George Washington Medical Centre Washington	8.30 - 10.00	Lilian Helms, Director of Quality Assurance Suite 1251
		10.00 - 12.00	Chart Review - (Utilization Review) - Visited Wards
		12.00 - 2.00	Lunch with Ms Helms and Dr Mondzac (Director of Medical Services QA) and Doctor Swope Doctor attached partly to QA
	Bethes da Medical Centre Washington	2.00 - 4.00	Tour with Dr Swope
		7.00	Visit a Nursing Home for the Elderly
29.10.86	National Rehab-ilitation Hospital Washington		Tour Hospital: Mr G Becker Diane J Elmes Talk with Director of Quality Assurance and Risk Management
	George Washington Medical Centre Washington		Tour Hospital Tricia M Brown Co-ordinator, Centre for Humanising Health Care
	John Hopkins Hospital Baltimore	2.00 - 4.00	Management Budgeting - L Subotich

30.10.86	McKeesport Hospital Pittsburgh	8.00	Review of Family Practice in patients - Ward round -
		9.00	Director of Quality Assurance
		10.00	Director of Utilization Review
		12.00	Lunch with a Social Worker
		1.00	Lecture on staff training for human relationships
		2.00	Meeting with head of Surgery (Clinicia Dr Fontana
		5.00 - 6.00	Visit a G.P's Family Practioner Surgery
31.10.86	McKeesport Hospital Pittsburgh	9.00 - 11.00	Visit an HMO Health America - Meet Director of Q.A. K Knuelsman
		12.00	Lunch with 3 Lawyers, one hospital Lawyer, one academic and one in Medica malpractice
		2.00	Meet with Chief of Medicine. Meet with Chief Endocrinologist
3.11.86	Joint Accreditation of Hospitals	10.00	Mr J Milton Head of the Acute Sector
		11.00	Ms R M Laubenthal Associate Director of the Hospital Accreditation Programme
		12.00	Lunch with Nurse, Medical Records Director
	St Lukes/Rush Presbyterian Hospital	2.30	Meeting with Q.A. Director
4.11.86	University of Illinois at Chicago/ Cook County Hospital	7.00	Ward Round in Special Care Baby Unit and children's ITU Children's A/E
5.11.86	Roosevelt Hospital New York	10.00 - 12.00	Lawrence C. Shulman - Vice President of Social Work. Vice President of Nursing L M Appenzeller 2 Clinical Nurse Epidemiologists Dr Grecco Consultant in Infectious Diseases (Aids)

		2.00 - 4.00	Metropolitan Life Assurance Dr C Arnold Medical Director
6.11.86	Montifore Hospital New York	10.00 - 12.00	Dr Friedland Infectious Disease Consultant Ward Round 32 Aids Cases
		1.00 - 3.30	United Hospital Fund re Sentinel Events Research