

Systematic use of closed-circuit television in a general practice teaching unit

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SUMMARY. We describe use of closed-circuit television in teaching general practice consulting skills in a new central teaching unit of a department of general practice.

We explain how the system works, present a simple analysis of student performance in communicating with real and simulated patients and discuss the value of teaching from the consultation with closed-circuit television and video.

Introduction

SEVERAL studies of teaching interviewing in general practice with different categories of students have been reported (Davis *et al*, 1980; Hannay, 1980). Our paper describes a year's work teaching about the consultation in general practice to 170 fourth-year medical students using a closed-circuit television system (CCTV) in the central teaching unit of our department.

The unit began work in January 1980. Before then the department had not been able to achieve its teaching or research potential because it had inadequate facilities. The opening of the central teaching unit was a landmark in the development of general practice teaching in our university and has aroused considerable interest amongst consultants in the local teaching hospitals. The aims of the unit's fourth-year clinical course, its learning methods, assessment and evaluation techniques have already been described (Irwin *et al*, 1976; Irwin and Bamber, 1978). Here we describe the use of the CCTV system in the fourth year as an illustration of the educational potential of a well-resourced department of general practice.

Dunluce Health Centre

The central teaching and research unit of the Depart-

ment of General Practice consists of academic and clinical accommodation in Dunluce Health Centre, which is a four-storey building next to the Belfast City Hospital. The academic accommodation, funded by the University Grants Committee, occupies most of the top floor, where six seminar rooms are linked by closed-circuit television to cameras in seven out of 14 consulting/examination room suites. Each of these has a built-in one-way mirror and a two-way sound system between the two rooms. Four partnerships and one single-handed general practitioner occupy the consulting suites on the second and third floors. The first floor has a pharmacy and chiropody, health education, nursing and family planning areas.

How the CCTV system functions

Each consulting suite contains either one or two colour TV cameras fitted with zoom lenses and mounted on a pan and tilt head high in the corners of the consulting room. These cameras are remotely controlled from the central control room. Several consulting rooms are also equipped with a small black and white TV monitor and system status lights (green for live viewing, red for recording). These are positioned so as to be visible to the doctor, but not the patient. The doctor may also remotely control the video recorders in the control room. Two microphones are used in each consulting room, one connected to the control room desk and the second, via an amplifier, to the examination/viewing room for sound monitoring when the one-way mirror is in use. Normal fluorescent lighting is used in the consulting room when recording. The seminar rooms have video recorder remote control facilities and are equipped with colour monitors.

The control room desk has all the necessary facilities to enable the technician to connect any source with any required viewing area, to enable any source to have remote control of any video recorder and to make any

necessary adjustment of any TV camera by remote control. Most teaching sessions are recorded, viewed and erased, but some 80 hours of videotape is currently retained in the tape bank to meet learning needs as they arise. Additional portable U-matic equipment is available so that colour recordings can be made on location in patients' homes.

CCTV in general practice teaching

The CCTV system is used extensively in the following courses:

1. The Patient, Family and Society—part of the introductory clinical course in the second year. Forty students attend two afternoons a week in the Hilary and Trinity Terms. Through audio-visual recordings in home and surgery, the students are introduced to communication and care of patients in the community. Altogether, the second-year students use 16 hours of CCTV time a month.
2. Every alternate Friday throughout the academic year, 12 fifth-year students spend all day in the department using the CCTV system with real and simulated consultations to learn diagnostic and management skills. This is preceded by a mandatory two weeks in a teaching practice. CCTV use: 12 hours a month.
3. A small number (three) of attached vocational trainees in the centre use the system to video record selected consultations and analyse the playback to improve their communication skills. In 1982 we plan to extend these facilities to all third-year trainees in the Northern Ireland Vocational Training Scheme. CCTV use: two hours a month.
4. The general practitioner clerkship in the fourth year uses 25 hours CCTV a month.

The system is also used with student nurses for two hours a month, a further 10 hours are spent on location work, 20 hours on editing and transferring taped material, and five hours on maintenance. This gives a total monthly figure of 92 hours.

The fourth-year course

Each fourth-year student has general practice teaching as part of a two-week joint course which covers topics of common interest to other departments—mental health, geriatric medicine and community medicine. He or she also does a three-week general practitioner clerkship, the first week of which is spent in intensive small group teaching in the unit in preparation for the two weeks' mandatory experience in a teaching practice. Groups of 16 students rotate in three-week blocks through the department and associated teaching practices between the beginning of September and the beginning of June the following year.

Early on Monday morning of the first week the 16

students are briefed in the Department of General Practice and divided into four groups. One group, led by a tutor, practises communication skills with simulated patients, using a consulting suite fitted with one-way mirror, sound and CCTV facilities. The other three groups proceed with their tutors to similarly equipped consulting/examination rooms in the clinical areas, where each student interviews several real patients. This process is repeated each morning with a different tutor. Other areas of knowledge and skills are covered in the afternoon sessions.

The teaching consultations

One student occupies the doctor's chair in the consulting room; the other students and the tutor observe him or her through the one-way mirror from the examination/viewing room. They can hear conversation between student and patient very distinctly. This 'teaching surgery' is arranged by the practice receptionist and usually includes eight 10- to 12-minute appointments. Back-up 'service surgeries' are held later in the morning to deal with any residue of patients who wish to be seen that morning, or who may have declined to take part in the teaching surgeries.

Half the appointments for a teaching session are follow-up consultations. Either by telephone or at the receptionist's desk, the patient is informed that the doctor will have medical students with him. Follow-up patients are informed by the doctor beforehand. In either case the patient has the option to refuse and to make an appointment to see his or her doctor of choice at a different consulting session.

On the appointed day the general practice tutor collects the patient from the waiting area and again obtains the patient's consent:

1. To be interviewed by a student and observed before seeing the doctor.
2. To an audio-visual recording being made.

The need for making the recording is explained, and the patient is told that the tape will be wiped clean at the end of the morning. The patient is then introduced to the student in the consulting room. The tutor retires into the adjoining room to join the other medical students and observes and intervenes at the appropriate moment to round off the consultation and leave a satisfied patient. Should fascinating teaching material emerge the tutor may wish to obtain written consent, on a standard proforma, in order to retain the recording and to show it to undergraduate and postgraduate professional audiences. Mid-morning the tutor and group have coffee.

Upstairs, after the break, each group watches video play-back of the interviews, controlled and assessed by the tutor, using a checklist of interviewing skills (see Table) and a modified Verby rating scale (Verby *et al.*, 1979). The scale is simple to use and effective for teaching. Each of the 21 items listed is scored from 0 to

Checklist of interviewing skills.

Greets patient	1
Introduces himself	2
Puts patient at ease (light conversation, laughs, etc.)	3
Displays unease	4
Shows antagonism	5
Shows interest and understanding	6
Picks up verbal cues	7
Picks up non-verbal cues (i.e. behaviour)	8
Encourages patient to express his ideas and feelings	9
Answers patient's questions	10
Uses direct questions appropriately	11
Uses open-ended questions appropriately	12
Uses control appropriately	13
Uses silence effectively	14
Uses facilitation effectively	15
Uses confrontation effectively	16
Gives reassurance	17
Gives clear, concise explanation of the disorder	18
Gives clear, concise explanation of treatment/management	19
Gives specific directions about follow-up	20
Fulfils patient expectations	21

3; if all items are marked, the total possible score is 63. Tutors leave blank any items considered inapplicable to a particular consultation. Thus, if 16 items are completed, then the total score is 48, not 63. If the student obtains 24 marks, his or her score is 24 out of 48, or 50 per cent.

Student scores—Michaelmas term 1980

Simulated consultations

Thirty-one consecutive role-play consultations by different students were rated by the tutor using video analysis for student performance in interviewing. The average score was 59 per cent, but four students scored less than 45 per cent. The poor performers were obviously ill at ease and all blamed the artificiality of the simulated clinical situation and the complexity of physical and psychosomatic symptoms of unselected case material taken from real general practice consultations.

Real patient consultations

The mean percentage score of 54 consecutive real patient consultations by different students was 75, considerably higher than with simulated patients. However, three students failed to reach 50 per cent; 35 students scored higher than 75 per cent.

Discussion

Students are more at ease with real patients and can cope more easily with the mix of illness which occurs in general practice, not all of which is complex and/or serious. They need only apply the basic history-taking skills and primary care interview model which they are

taught when they are confronted with patients suffering from common psychiatric disorders and organic illnesses. However, patients may present with more than one problem. These are the time-consuming consultations in general practice. We teach them to clarify complaints within a set time limit, to question life-styles and personal habits and to pick up significant verbal and non-verbal cues. Simpler or minor complaints are dealt with in a more straightforward, commonsense way.

Through observing consultations and analysing them on video, students thoroughly enjoy and benefit from studying behaviour and observing the different presentation of illnesses in general practice compared with hospital medicine. The intensive use of the CCTV system has, we feel, ensured efficient and effective use of staff time in good small group learning whilst maintaining a one-to-one relationship and a reasonable level of personal intimacy in the consulting room. The smooth running of the system is a tribute to the sensitivity of all concerned: doctors, receptionists, students and patients. In the year's operation, seldom has a patient commented on the presence of the equipment; siting the cameras and hanging the microphones above eye level is obviously important.

Our students learn by doing, having been taught an appropriate basic interview model beforehand. Their intensive week's teaching prepares them for their coming period of attachment to a teaching practice. This is in line with the *Recommendations on Basic Medical Education* from the General Medical Council (1980). Learning of this kind—to diagnose and manage the unselected illnesses of primary care—was seriously neglected in the curriculum of most medical schools until the advent of general practice units or departments, even though experience in this area contributes much to the overall learning of students. Our present work indicates that much still needs to be done to improve and validate rating of student performance in general practice interviewing. The present ratings simply confirm one's impression of the poorer student. We hope to extend use of the system to undergraduates at all levels in 1982 and to all 40 or 50 third-year trainees in the Northern Ireland Vocational Training Scheme for General Practice. Each of the latter will have the opportunity to interview several real patients in a consulting room, record the proceedings by remote control and analyse them on video afterwards. A serious attempt will be made to rate performance, and the process will be repeated twice more throughout the year for each trainee.

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FOURTH NATIONAL TRAINEE CONFERENCE REPORT, RECOMMENDATIONS AND QUESTIONNAIRE

Occasional Paper 18

How much teaching do vocational trainees really get? What do they think about their trainers and how easily can they talk to them? This *Occasional Paper* reports on the proceedings of the Fourth National Trainee Conference held at Exeter in July 1980 and analyses the results of a questionnaire which was returned by 1,680 trainees throughout the country. This is the most detailed information so far published about the opinions of trainees, and from them a new 'value for money' index has been derived, based on sophisticated statistical analysis, which now makes it possible for the first time to rate a general practitioner trainer.

Fourth National Trainee Conference, Occasional Paper 18, is available now from the Publication Sales Department, Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London SW7 1PU, price £3.75 including postage. Payment should be made with order.

A SYSTEM OF TRAINING FOR GENERAL PRACTICE

Occasional Paper 4 (second edition, 1979)

Training programmes for future general practitioners/family physicians are being introduced all over the world. In the United Kingdom compulsory training after qualification will begin in 1981.

This report by Dr D. J. Pereira Gray outlines the educational principles and policies of the Department of General Practice in the Post-graduate Medical Institute of the University of Exeter.

Occasional Paper 4 is available now, price £3.00 including postage, from the Royal College of General Practitioners, 14 Princes Gate, London SW7 1PU. Payment should be made with order.

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Small group teaching is older than we thought

"We have received a letter signed 'Tyrones' from some young students in medicine, who are now in the latter term of their pupillage to different practitioners in a town in Devonshire, who appear to feel a zeal for the acquisition of professional knowledge which hardly ever fails to lead to what is alone sufficient to compensate for a life devoted to arduous, though gratifying, labours. They have formed a society, of which a meeting is held twice a week, from six to eight each evening; at each of which a lecture (composed of selections from the best writers on material medica, pharmacy, rudiments of anatomy and physiology, practice of physic, &c. to which subjects they for the present confine themselves) is read, and suitable demonstrations given by the member whose turn it may be; which being finished, the members criticise on the several errors committed by the lecturer, and discuss, as far as capacity will allow, on the subject and substance of the lectures. This done, each member is required to put forward at least twelve questions on some of the before-mentioned subjects; each of which questions, if not answered by one or more of his fellow-members, is solved by himself. These proceedings occupy, at least, the allotted two hours."

Source: *London Medical and Physical Journal*, May 1819, 453-454.