

# Outcomes on computer

IN THE DRUG and alcohol field there is keen and widespread interest in outcome monitoring, not least because the Department of Health has made it clear that from here on it intends to move to outcome funding. Local funders are likely to follow the central lead. This is how our agency responded by introducing a computerised outcome measurement system. In the process we explored the difficult issues of principle involved in the seemingly simple task of measuring outcomes.

The key issue facing anyone contemplating such a system is to specify what, for their service, is an 'outcome'. In a recent study of outcome monitoring in the drug and alcohol field services variously described outcome measures as:<sup>2</sup>

- client feedback on satisfaction with the agency (really a measure of consumer satisfaction);
- the number and nature of counselling sessions and other work (really a measure of the agency's activity level).

For the purposes of this article, an outcome measure is:

A measurement of *change in a client* from first assessment to some later point in time. This change can be in behaviour (social, criminal or substance-related), health, level of drug consumption, or psychological state.

## It's good to get in first

Until recently, most drug services – though committed to bringing about positive change in their clients – had not considered how to evaluate whether their interventions are actually linked with such changes. Outcome measures can improve services by determining how successful they are in what most are there to do – promote positive change in their clients.

For Chester Drug and Alcohol Service the need to evaluate service delivery was not the only impetus for developing outcome measures; we were also conscious of the benefits of pre-empting the purchasers. Many have not yet

*Mark Namgauds' outcome measurement system was one of the few examples of good practice in a recent study of drug and alcohol services.<sup>1</sup> His experiences will help services improve performance – and impress purchasers who want to know what services achieve, not just what they do*

by

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## SUMMARY

Outcome monitoring is being required by service purchasers. Chester's drug and alcohol service introduced a computerised system to measure change in a client, focusing on drug use; health; social factors; and financial and legal factors related to drug use. Clients rate themselves on each question. Client concern has been negligible and staff resistance overcome by involving them at all stages in the development of the system. Unresolved issues include deciding which outcomes matter most, establishing that change is due to the service, and measuring benefits for the community.

begun to consider client change as a yardstick of service performance and require only a report on the number of face-to-face client contacts.

Ultimately they will – they should – ask for outcome data. An outcome measurement system already put in place by the service provider may well be accepted by purchasers, giving providers a degree of influence over the measurement system that might be lacking if the initiative came from elsewhere.

Getting in first may also improve our chances of focusing on change in areas most relevant to the client, as well those relevant to purchasers. Other factors influencing the introduction of our system were the need for an improved assessment procedure and to automate activity records, clinic schedules and prescribing.

Ideally, the outcome of treatment should be compared against a record taken at the time the client started the programme; relying on clients' later memories – or reconstructions – of how they felt may lead to inaccuracies. To overcome this we take baseline measures at the first assessment. This meant redesigning the assessment procedure and form, resulting in a lengthy 13-page document, though most of the questions can be answered by ticking boxes.

The form was meant to fulfil therapeutic as well as measurement functions. One aim was to structure the assessment to involve the client, encouraging them to choose the way forward and formulate an action plan for change. It also helps assess the service's responsiveness (such as time from referral to appointment) and gathers information relevant to motivational management and relapse prevention.

Our chosen outcome measures focused on: drug use; health; social factors including relationships, work or education; and financial and legal factors related to drug use. Many of the questions – such as drugs used, how they are taken, amounts and frequency – would be asked at any assessment. Motivational management is aided by questions about the pros and cons of the client's drug use, such as 'Have you got pleasure from your drug use over the last few

months?' and 'Have you experienced depression or anxiety?' Other questions probe the client's level of drug dependence, how happy they are with their current drug use, and their confidence in their ability to change. Clients rate themselves for each question and a simple baseline figure can be obtained by totalling the scores across each sector.

### Which outcomes matter most?

Follow-up measures are only just being undertaken and we have yet to settle the finer points of comparing data from the assessment with follow-up data to measure change. Among these is the complex issue of 'weighting'.

At the moment we simply add up the 'scores' on the different measures to give a single figure which sums up the state of the client. Effectively, this assumes that all the outcomes are equally important – but are they? For example, should a decrease in injecting from 35 to seven times a week and a marked improvement in college attendance count equally to the final score? Ideally, we would decide which outcomes matter most and 'rig' the way we sum the scores give these the biggest contribution to the final figure.

If we do this, should the client decide what weight to attach to the various changes? This seems mandatory if our aim is to improve services for clients. But purchasers may well focus on *Health of the Nation* targets and other goals set by the government. It may be impossible to weight all the outcomes to produce a score which satisfies everyone. An alternative – one easily achieved in a computerised system – would be to weight the measures differently depending on who, or for what purpose, the final score is intended.

There is another knotty problem. Having measured change in a client, how can you be sure it was due to your interventions and not to some other process, or even just spontaneous change? After all, most people with drug problems change their behaviour without contact with services.

The classic way to disentangle these influences is to recruit a 'control' group which has no contact with services. Their progress is then compared with a group of people who did attend a drug service. But this will be beyond the capabilities of most services, and there are ethical problems in withholding help from people whose drug problems are every bit as bad as those you do help.

Assuming we establish that client change is due to the service, there would still be the question of which 'bit' of the

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service facilitated the change. We could try different therapies and see how clients respond – but can we assume that therapy is the dominant influence? For example, to what degree does the warm, non-judgmental approach of the receptionist affect change?

All this deals with the service's impact on the client at a time when the impact of drug use on the community is coming to the fore in government thinking.<sup>3</sup> Perhaps we should also measure change at the community level, such as in acquisitive crime or drug-related health problems. Unfortunately, the links between service interventions and such changes are even more tenuous than links with individual change.

### THE CAUSES OF FAILURE

From the record of failed information technology projects in the health service we can divine some common causes of failure:

- Staff have not received adequate training, perhaps being presented with computer systems, handed a manual and told to 'get on with it'. Also, staff have not been asked about their concerns and what they would like the system to do for them.
- Systems have been developed for managers, providing little or no facilities for others. This has led to the collection of data such as numbers of contacts which does little to improve the service for clients or help the staff delivering the service.
- Software has been developed by external companies who have not grasped the needs of those using the system. Modifications (required quite often) cost more money and there is usually a time lag between requesting the change and its implementation. Control and ownership of the database is external.
- Operating systems (responsible for the way the computer interacts with the user) have been complex; only those with a special interest or previous experience of such systems are able to use them.
- Hardware and software have often neglected the needs of users. For instance, some visual display units (the telly-like box!) are distinctly unfriendly – have you ever bought a book with green text in a weird typeface on greyish-black paper?

### How did the clients react?

So much for the principles and issues – what of the practice? One concern is whether clients will be put off by a battery of questions designed to measure outcomes, especially since these need to be asked early in their contact with the agency. We found the opposite was the case. Many clients remarked on how the questions helped them gain a new perspective on their problems or become aware of factors they hadn't previously considered. In around 100 completed assessments, few clients have refused to answer or doubted the relevance of certain questions, and just one would not give much more than name and address – and this could occur with any assessment form.

Our limited experience so far shows that clients are also willing to spend the 10-15 minutes it takes to go through the questions again to monitor progress. Follow-up at later dates when clients may be out of touch will not be as easy.

How the staff who had to enter and extract outcome data reacted to the system (see *Living with the system*) was intimately bound up with the technology we used to process the data. It's this aspect we turn to next.

### Computers do it better

We already intended to introduce a computerised information system, so it was natural to add outcome measurement to its many functions. But the benefits of information technology are worth considering even for outcome measures alone. These benefits include:

- **Security** Data can be 'password protected' and 'encrypted' (stored in a coded form that can't be read without being decoded).
- **Reduced storage** Information from hundreds of filing cabinets can be stored in less space than a single draw from a filing cabinet.
- **Access to data** A client's records can be found in fractions of a second. In a 'networked' system several people can access the data simultaneously.
- **Searching and sorting** Thousands of records can be searched and sorted in seconds to answer questions such as how many male clients prescribed methadone live in a certain area.
- **Generation of reports** Those who dread having to produce regular reports on their service will welcome the way a well set up computer system can automatically, quickly and accurately analyze data and generate reports, giving more time for other tasks.
- **Error checking** Data entered into the computer can be 'validated' to ensure it is 'makes sense'. For example, the database

can be set to allow only the words 'male' or 'female' to be entered in the gender record or to spot where the record of the client's first use of heroin would make them a kindergarten 'junkie'.

• **Research** These combined benefits allow quantitative research to be conducted easily, encouraging services to evaluate their working practices.

• **Survival** With the changes in the NHS, the demand for information from purchasers will continue to grow as they seek the 'best deal'. Services may live or die by the quality of their information systems.

### The human factor

Information technology has not had a happy relationship with the NHS, producing several spectacular (in monetary and other terms) white elephants. We can benefit from these by analysing why things went wrong (see *The causes of failure*). What these often amount to is a lack of attention to the people using the machines.

We decided that our computer software (like databases and word processors) and our hardware (the physical computer) must be as easy to use as possible since most staff had little computer experience. Apple Macintosh computers were chosen for their ease of use and standard features such as ability to link up ('network') to other computers. On screen they present the user with an easily grasped interface which mimics how people work on their physical desktops. Information is stored using the familiar metaphor of filing cabinets with folders.

The database software determines how data is entered into the computer, how it is stored and therefore how it can (and can't) be retrieved. This crucial bit of the system was developed 'in house' by a staff member to ensure that it met our exact requirements and could be modified quickly (at no cost other than staff time) to meet changing needs. Nowadays, this does not require complex programming skills. Core software<sup>4</sup> is often designed to be easily customised to fit the end user's needs, though this development phase can still take considerable time.

To maximise the benefits of the system all the team needed to be able to use it to enter and extract data. This was a process of evolution rather than revolution; it was

### LIVING WITH THE SYSTEM

*A view from a system user – a self-confessed computer illiterate drug worker who had to come to terms with the new system*

"Two significant changes have been introduced to the Chester Community Drug and Alcohol Service over the past nine months. One is a new assessment form, the other relates to the collection of statistical information for monthly return to the information department.

The assessment document was devised over a period of months to help involve the client in their care planning as well as to provide statistical information. At first it may seem over-lengthy, but I find it flexible and 'user-friendly', whether the user is myself or the client – a significant part of it can be completed by the client, allowing them some initial access to what is recorded about them.

The other change was the decision to do away with the longhand method of collecting monthly statistics (activity analysis) and move to a computerised system. For someone like myself, who has taken computer illiteracy to previously unplumbed depths, the idea of tapping information into a database (whatever that is!) didn't do much to dispel mid-winter blues. Some nine months on, I have to confess to a sneaking admiration for the wonders of

computer technology.

One of the problems with the old system was that the 'stats' – client contacts, etc – were collected day by day to be totalled up at the end of month and despatched to some other department, never to be seen or heard of again (or so it seemed). Now I have access to a significant level of self-generated information including regular updates on client caseload, attendances and non-attendances, amount and types of contacts with clients, and so on. It might not make working with the clients any easier, but it does give you the opportunity to more methodically review the progress (or otherwise) that clients are making.

What helped me with the system was the opportunity to be involved in its development and having on hand a resident 'computer buff' prepared to put in a lot of time and effort helping myself (and other computer illiterates) take our first steps to computer literacy."



several months before all were sufficiently skilled. Most found the prospect technically daunting. Several were very concerned about 'losing all the data'; some felt it was not their job to enter or extract data from computers. Resistance was evident in stories of past failed systems; the most resistant showed this by not making time to enter data.

Staff are right to be sceptical of new information strategies and their criticisms are crucial for the development of a working system. *Involvement* is the key to overcoming resistance and developing a good system. To ensure their needs were addressed, our staff were involved in all aspects of database development (other than programming) from designing the assessment form to the computer interface. The sense of ownership, relevance and usefulness this generates does much to promote the successful integration of the database into the service.

Staff who don't see computer work as their job can be encouraged by incorporating features such as caseload management, so that they come to see the system as essential to whatever they *do* see as their core job. To improve the use of the system staff were approached

individually and informally to encourage them to voice concerns.

Adequate training and support, often overlooked, are crucial to the successful use of a computer system. Staff were given one-to-one 'hands on' training on the system, with the added advantage of the program developer usually being available to be consulted on difficulties and to provide support. Despite their lack of previous experience, all team members can now use the system and several have gone on to explore more of the computer's features.

Some problems can't be resolved simply by more training or support. In our case assessments have sometimes taken up to two hours, partly because the structured assessment form and questions relating to baseline measures have encouraged clients to fully explore their life situation. Occasionally, this has led to the assessment being split over two sessions that may be a week apart. Obviously, this is not suitable for taking baseline outcome measures as the client may have changed between the sessions.

There is also concern about the time clinical workers spend entering assessment data. One option is to employ a part-time worker to input data, while staff continue to access the data when required. Outcome monitoring is generally going to increase service workloads. Purchasers and managers of provider units need to ensure adequate resources are available. ○

1. Burns S. *Outcome monitoring: practical advice for developing monitoring systems*. Alcohol Concern/SCODA, 1994.

2. Burns S. *op cit*.

3. Lord President of the Council *et al*. *Tackling drugs together: a consultation document on a strategy for England 1995-1998*. HMSO, 1994.

4. We chose *4D First*, a relational database which can be used to generate customised databases with numerous features to aid the user and to create legible, attractive data entry forms on the screen.



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