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▶ Translating addictions research into evidence-based practice: The Polaris CD outcomes management system.

Toche-Manley L., Grissom G., Dietzen L. et al. Request reprint
Addictive Behaviors: 2011, 36, p. 601–607.

US experience of developing and implementing a system for assessing patients' needs and matching to appropriate services offers a model for promoting reintegration objectives and adjusting payment by results to the profiles of the patients at a service.

Summary Polaris-CD (Chemical Dependency) is a computerised outcomes management system intended to help substance use treatment services match patients to appropriate behavioural health, dependence and supplemental services, track clinical progress, and predict patients likely to relapse and drop out from treatment. It was produced and is commercially distributed by the US company Polaris Health Directions.

The development process

The system grew out of a study conducted at an employee assistance programme (or in UK terms, occupational health service) in Philadelphia. Its key finding was that outcomes improved when patients were matched to services catering for problems which their Addiction Severity Index scores indicated were for them relatively severe, defined as exceeding a threshold set in relation to the usual severity scores of patients at the service. Similar thresholds were incorporated in to the Polaris system to automatically recommend that counsellors consider supplemental services for patients with particularly severe problems, usually 15%–20% of the caseload.

A second study also at an employee assistance programme used a shortened version of the Addiction Severity Index to assess the severity of patients' psychiatric, family and employment problems. If patients had relatively severe problems in these areas, their referral to an addiction treatment agency was made contingent on that agency agreeing to provide additional services to address these problems. The progress of these patients was compared with that of patients subject to usual referral procedures before the new system had been implemented. Under the new system, a higher proportion of patients

presented for (72% v. 55%) treatment, and of these, more completed it (86% v. 75%). Among the completers, under the new system 15% were treated again within six months versus 35% of the first set of patients – an indication that ensuring patients' wider problems were addressed more often enabled them to avoid relapse requiring further treatment. The results helped convince treatment providers of the benefits of dealing with issues in the patient's life which might threaten the lasting success of addiction treatment.

A third study tested which combination of six Addiction Severity Index scales plus over a 100 other variables or characteristics assessed at treatment intake best predicted the patient's scores on the same scales later in treatment. The results were used to construct a way of calculating the progress typically to be expected of patients of particular types and problem profiles. Particularly effective services could then be identified on the basis that their patients on average did better than expected, and similar calculations could assess whether improvements to a service actually did improve outcomes.

A fourth study established how best to predict from the Polaris intake assessment which patients would later drop out of outpatient treatment. Most likely to drop out were non-white patients, those who had used cannabis within the past month, been physical abused, who did not strongly agree they needed treatment, and had previously been detoxified relatively few times. Patients legally mandated to treatment and those taking a prescribed medication were at lower risk. These variables were used to classify patients as at low (19%), moderate (49%) or high (32%) risk. The model was then applied to a new sample of patients to see how well its high and low risk categories matched actual drop out status. The classification predicted over 7 in 10 of the drop outs but under 4 in 10 of those who would complete treatment – considered acceptable, since the main point was to identify patients at risk of dropping out. The findings were incorporated in the Polaris system's intake reports, alerting counsellors to the patient's risk category, and suggesting motivational interviewing for patients at high risk.

Implementation experience

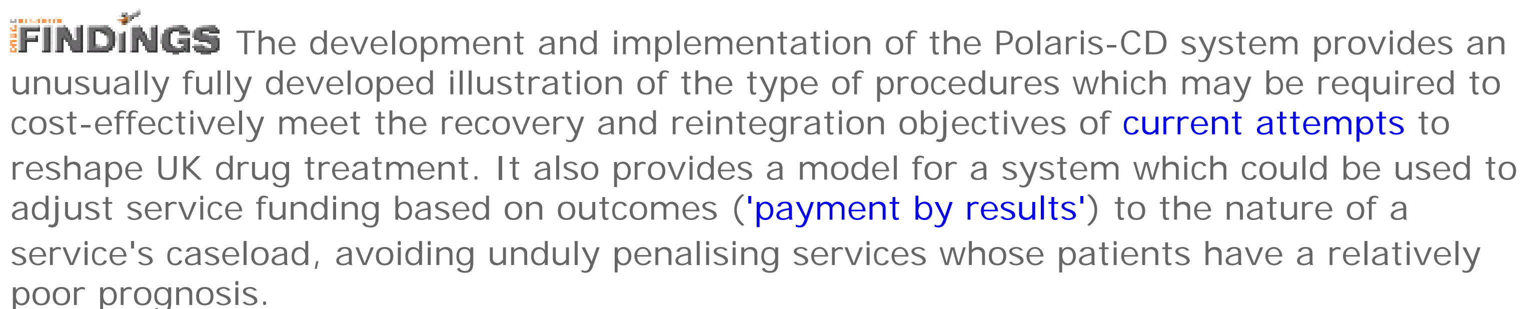
The system has been adopted by the addiction treatment programmes of a large private medical company in California. Experience there shows that patients accept the assessments if it is explained that the purpose is to help ensure they receive the best possible care, but the completion rate for update assessments part-way through treatment was poor until this was made one of the ways services were held to account publicly and by the parent organisation. The system is also used to identify services which do better than expected given their case-mix profiles. What might make them better can then be piloted in other services, and the same system used to see if performance really does improve. Managers monitor and set targets for counsellors to provide supplemental services as indicated by the assessments, and to take action to avoid those at high risk dropping out of treatment.

Counsellor 'buy-in' is crucial to the system being used as intended. This requires the establishment of a 'culture of measurement' where treatment staff embrace assessment not as 'research', but as an important way to improve the quality of care and to support rather than displace clinical judgment, bolstered by an explicit statement of organisational values and practices that affirm and reward appropriate use of measurement. Finding a respected worker to champion the system also aids

implementation. Wherever feasible, the system's reports should replace existing paperwork.

The authors' conclusions

The Polaris-CD system illustrates how to translate research findings in to a feasible outcomes management system which can improve addiction treatment. It acts as a tool to learn from 'real world' clinical experience to continually improve our understanding of what works for whom.



FINDINGS The development and implementation of the Polaris-CD system provides an unusually fully developed illustration of the type of procedures which may be required to cost-effectively meet the recovery and reintegration objectives of current attempts to reshape UK drug treatment. It also provides a model for a system which could be used to adjust service funding based on outcomes ('payment by results') to the nature of a service's caseload, avoiding unduly penalising services whose patients have a relatively poor prognosis.

Though it models a possible process, the content to which those processes are applied – measures used, relationships between them, population norms – would need adaptation to the UK context. Rather than the Addiction Severity Index, Britain seems likely to opt for systems based on the AUDIT alcohol problem screening questionnaire and the Treatment Outcomes Profile. What the featured study illustrates is the kind of information and the kind of processes which will be needed to make the most of those outcome measurement tools to promote the progress of individual patients, and to assess, reward and improve performance at the level of the individual counsellor and an entire service. It also offers an example of the strategies needed to establish a 'culture of measurement' in a service, so repeated formal assessment is implemented as an enhancement to one's work rather than avoided as a burden.

Another reason why the system would need to be adapted is that Polaris-CD seems to have been developed for and based on the profiles of employed patients covered by US occupational health insurance plans. The authors of the research (more below) which formed the basis for the system – and the only study among those cited to have directly related its prototype measures to post-treatment improvement – warned that such patients probably differ 'substantially' from public sector treatment caseloads. Such caseloads form the major treatment population in Britain. Few drug users among them are formally employed (1 2) and they and drinkers in treatment are rarely referred by employers. In the featured study the profile of patients who most often dropped out of treatment is consistent with cannabis users who see no real need for treatment and had not needed treatment in the past, but have perhaps somehow got identified as users by their employers – not the profile of treatment drop outs at British addiction treatment services.

The featured account of the development and performance of the Polaris system comes from employees of the companies which developed or implemented it. In several social research areas (1 2 3), developers and other researchers with an interest in a programme's success have been found to record more positive findings than fully independent researchers.

The original and related studies

The roots of the Polaris system lie in a study in Philadelphia, where the directors of four private drug and alcohol services were asked to provide at least three sessions of specialist vocational, family or psychiatric advice to randomly selected clients assessed by the Addiction Severity Index to have severe problems in these areas. Other clients received standard treatment. Two of the services were inpatient and two outpatient programmes. All 94 adult patients in the study were employed and dependent on drugs, alcohol, or both. Treatment costs were covered by employer-provided insurance. Systematising responsiveness to need in this way improved treatment retention (outpatient only) and completion rates (to 93% from 81%) and six-month outcomes in the targeted areas, as well as reducing arrests and the need for further treatment. This was a particularly stringent test because there was nothing stopping the other clients also receiving these services (which were available from agency staff on-site) and many did, but to a lesser degree. However, the researchers cautioned against generalising their findings to other groups, and in particular to public sector treatment patients. The study patients were referred by an employee assistance programme, so probably differed from other groups in the amount of pressure they were under to enter treatment, as well as in important aspects of their backgrounds such as employment and social stability. Their main problem drug was rarely cocaine, heroin use seems to have been so infrequent that it was not mentioned, and most had never before been treated for alcohol or for drug problems.

This study and others like it have been reviewed by Findings. Research is generally supportive of the attempt to match the intensity and type of help to patients' needs, but studies are few and usually the impacts on substance use have been moderate. The evidence is strongest in regard to providing inpatient care and professional psychotherapy for patients with distinct but not disabling psychiatric problems who also have fewer 'recovery resources' in the form of employment opportunities and a supportive family. The relative prominence of research on psychiatric severity and psychotherapy may be a function of the comparative lack of investment in addressing patients' needs for housing and employment. These needs are also more difficult to meet because the required resources are usually beyond the reach of the treatment agency. Despite the difficulties, studies do suggest that providing such services can improve outcomes in the targeted areas and also in respect of substance use problems.

Addiction Severity Index

The featured system based its assessments on the Addiction Severity Index, widely recognised as the 'gold standard' for assessing the severity of substance use and related problems. It is designed to be administered as a semi-structured interview in an hour or less to gather information about, and rate the severity of, the patient's problems in seven areas: medical, employment and financial support, drug and alcohol use, legal, family history, family/social relationships, and psychiatric. The Treatment Research Institute – created by researchers who developed the index – makes it freely available, and also supplies software to automate its administration, to use the assessment to suggest local services to help with the problems it identifies, and a questionnaire to determine whether the type of services the assessment suggests are needed have actually been delivered. This system has been evaluated and found to improve patients' access to services matched to their problems.

Thanks for their comments on this entry in draft to Don Lavoie of Alcohol Policy Team at the English Department of Health. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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