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Networking

Four years of TayRen, a primary care research and development network

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Tayside's Primary Care Research and Development Network (TayRen) was awarded £140K per annum for 4 years from 1998 by the Scottish Office Department of Health. The operating model of TayRen is described and the outcomes highlighted. A multiprofessional, multidisciplinary, methodologically rigorous and locally responsive approach has contributed to the outcomes achieved. The network has enabled practitioners to gain research experience by working with more experienced colleagues. The research culture of Tayside has matured since the formation of TayRen as evidenced by the increased number of research practices (six), training fellowships (three), registration for higher degrees (18), grants (£3.9m) and publications (96). In conclusion, TayRen has increased research activity in primary care in Tayside.

Key words: capacity building; multidisciplinary research; research culture; research infrastructure; research networks

Introduction

Tayside's Primary Care Research and Development Network (TayRen) is 4 years old. What are we doing with the infrastructure funding provided by the support arrangements, and how well are we doing?

The Mant Report (NHS Executive, 1997) was the first formal acknowledgement by the UK government that the low research capacity of primary care needed to be addressed. Primary care now has a stronger infrastructure for research with the establishment of research practices and research networks supported by regional R&D directorates in England and Wales, and by the chief scientist's office in Scotland. The NHS has stated a commitment to multidisciplinary research and to encouraging collaboration between academic centres and practitioners. Organization science indicates that a network should be the ideal organization to deliver on this with their greater flexibility and opportunities for creativity than more formal organizations (Fenton *et al*., 2001). Most networks have a mixed approach, incorporating bottom up, top down and whole system leadership (Thomas *et al*., 2001), as members need to be motivated to sustain effort, and synergy must be developed with other local services, while producing high quality research. However, networks must be seen as long-term development projects (Fenton *et al*., 2001), and it is difficult to show quick returns on the investment.

It is notoriously difficult to evaluate any interventions aimed at changing practice, so initiatives that hope to change the culture of primary care, as did the introduction of primary care research networks, will inevitably pose problems of evaluation (Clement *et al*., 2000; Evans, 1997; Thomas *et al*., 2001). Work is currently underway to establish robust methods of evaluation: the UK Federation of Primary Care Research Networks is currently setting up an Evaluation Resource File and the Scottish Primary Care Research Networks, under the guidance of the Scottish School of Primary Care, have agreed a list of 20 criteria, both outcome and process measures, on which their performance should be judged (Ryan and Wyke,

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2001). Performance is also influenced by the complexity of the organization, the local context and the stage of development of the network. The quality of interactions within a network is as important as the harder outcomes in determining success (Griffiths *et al*., 2000). Carter *et al*. (2002) suggest that the only meaningful outcomes are, 'Do PCRNs increase the quality, quantity and appropriateness both of research into primary health care and evidence-based clinical practice in primary health care?'

This paper describes the first 4 years' experience of Tayside's primary care R&D network: TayRen.

The network

Ring-fenced funding of £140K per annum for 4 years was secured from the Scottish Office Department of Health by the Tayside Research Consortium to develop the infrastructure for primary care research and development throughout Tayside. The appointment of a professor of primary care research and development at the Tayside Centre for General Practice coincided with this successful bid and, at the inaugural meeting in April 1998, an executive and network of 12 practices was established. The network has grown rapidly, facilitated by the appointment of a network director/co-ordinator in October 1998, and a secretary in February 1999.

TayRen based itself on a model similar to MRC GP Research Framework, with a greater emphasis on the role of clinical staff within practices in generating research questions (TayRen, 2002a; 2002b). The founding members were able to demonstrate prior involvement in research and development and a willingness to commit to the aims of TayRen. As research expertise within the network increased, more novice researchers could be integrated into the network, have access to training in research skills and gain experience by working within project teams. An early priority was to increase the research skills across the network by investing in a broad range of training, from critical appraisal skills, searching for evidence, managing data to detailed research methodology. By our 4th year, training continues as it is recognized as a useful way of changing culture, but it is no longer supported by core funding, and is done on a collaborative basis with external sponsorship. Spending on project development has become the priority.

Members have been encouraged from the outset to register for higher degrees and, to date, we have three MD, five PhD, nine MSc and one MDSc candidates undertaking further studies.

TayRen operates within Tayside and NE Fife (Figure 1) and serves five LHCC areas: Dundee, Angus, Arbroath and Friockheim, Perth and Kinross and NE Fife. The Tayside population is about 385 500 in 2000 (Tayside Health Board, 2002), served by 75 medical practices (280 GPs) and 52 dental practices (150 GDPs). TayRen is a network of 34 practices, 24 general medical (one third of Tayside medical practices) and 10 general dental practices. We have member practices in all areas, though most of the activity takes place in Dundee, as a central location, which is convenient for the majority of members.

As part of the Tayside Research Consortium, TayRen has strong links with researchers within Tayside University Hospitals Trust, Tayside Pri-

Figure 1 Tayside and north-east Fife

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mary Care Trust, Dundee University, St Andrews University and Abertay University and this has proved to be an excellent way of developing clinical problems into research questions.

Practices are provided with sufficient resources to encourage participation in projects. When practices first join TayRen they are given financial support to ensure that their databases provide accurate morbidity data for their patient population, and allow them to set up accounting procedures. Practices are encouraged to agree to share data on list size and deprivation status to increase the usefulness of the TayRen membership as a sampling frame for projects. When clinicians attend daytime research meetings, practices are reimbursed for staff displacement from normal clinical activities. Staff time can also be costed into project bursary applications. TayRen has two levels of pump priming bursaries to support the development of research ideas. The £500 bursary allows people to explore and define a research question. If this proves to be novel, interesting and do-able, up to £4500 can be awarded for pilot work to support an application to an external grant-awarding body. Recent pilot projects include work on the carriage of drug-resistant bacteria in the faeces of young children, an investigation into salivary constituents in periodontal prone and periodontal resistant patients in primary care, and validation of a mother-generated index to measure post-natal quality of life. TayRen projects that have attracted recent interest include work on children's sleep problems and their effect on maternal wellbeing and health costs which was featured in the 2001 Scottish Science Press Conference and an evaluation of cardiovascular risk prediction tools which has attracted a CSO PhD studentship.

Management within the consortium has provided sound financial processes and allowed the co-ordinator to concentrate on facilitating the research process. One limitation of the current funding arrangements has been the restriction of membership to primary care practices – another model would be open to all members of the primary care trust and other private contractors, such as community pharmacists. We have adopted a flexible approach whereby as long as at least one member of a project team is a bona fide member of a TayRen practice then funding could be made available. This has meant that, although some individuals cannot become full members, they have not been totally excluded from the activities of the network.

The operating model used by TayRen consists of an executive group that meets every 2 months to discuss policy and consider requests for bursaries. The membership meet quarterly, one meeting being the 1-day annual conference, to generate and exchange ideas and report back on progress in individual projects. Research interest groups focus on particular areas, e.g., dentistry and family medicine/cancer, and meet to suit the needs of the members (Table 1).

The main resources available to members are the co-ordinator, other members and colleagues in the Tayside Research Consortium and financial support for research initiation. An annual training programme open to staff in primary and secondary care is organized to take inexperienced researchers through the steps involved in research from refining clinical problems into research questions and on to a research protocol. Support is available at every stage of the research process and is tailored to the needs of the network member and their project.

TayRen outcomes

A total of £3.9m grant funding involving TayRen members has been awarded since 1998 (Figure 2) and the numbers of publications and presentations is increasing steadily each year (Figure 3) (TayRen, 2002a). Details are available on the Tayside Research Consortium website (Tayside Research Consortium, 2002) and the National Research Register (NRR) (National Research Register, 2002).

TayRen is multidisciplinary, and encourages input from all members of the primary care team (Table 2).

Eighty one projects have received Tayren support, many through the research bursary scheme,

Table 1 TayRen research interest groups

- Cancer/Family medicine
- Cardiovascular disease
- Dentistry
- Pharmacy
- Complementary medicine

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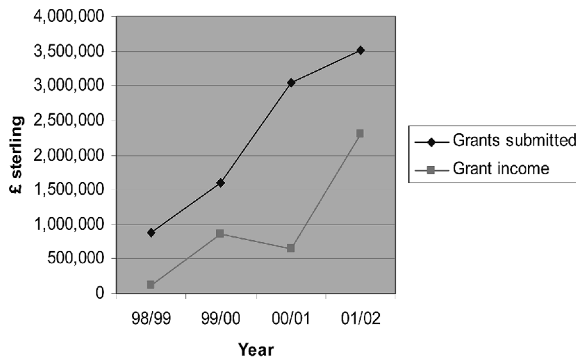

Figure 2 External funding awarded to TayRen members 1998–2002

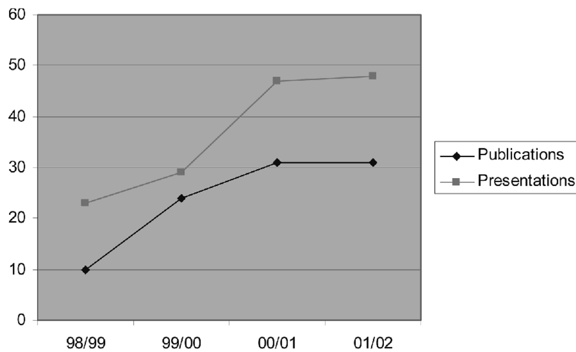

Figure 3 Publications and presentations by TayRen members 1998–2002

Table 2 Breakdown by profession

Profession	Members	Project leaders
GP	122	40
Nurse	203	16
Dentist	28	6
AHP	30	2
Pharmacist	10	7
Practice manager	27	2
Other	75	1

Other, dental nurses, hygienists, dental technicians, clinical psychologists, counsellors, aromatherapist, administrative staff.

when pilot work with the potential to lead to grant applications is supported from pump-priming monies. This has facilitated the close links with colleagues in hospital and laboratory disciplines established by being part of the Tayside Research Consortium.

Discussion

There are now eight primary care research networks in Scotland (TayRen, WestNet, Forth Valley, Highlands and Islands, Lothian, FResCo, Borders, Dumfries and Galloway). Unfortunately funding arrangements vary widely and the existing networks are unable to provide equitable access to research support. Although all the networks have similar aims and objectives, their management structure, operation and location, whether within an academic department or primary care trust, differ because of the local situation and financial constraints.

Much of TayRen's performance can be attributed to the locally responsive approach based on underlying analysis of members' needs. Using both bottom up and top down approaches has meant that experienced researchers have been able to contribute to the training of less experienced colleagues, while producing immediate returns in terms of successful grant applications and publications. These colleagues, who had little or no experience of research four years ago, are now beginning to attract grant funding in their own right and are contributing to conferences and scientific journals. Research practice status has recently been granted to four more practices in Tayside, bringing the local total to six, all of them TayRen members. The supportive environment within the network allows members to grow in confidence in their research capabilities.

Funding for the networks was extended for a further year during the CSO review of research funding. This will bring the first phase of the primary care networks to a close and increasingly, as the critical mass of researchers increases, primary care will have to compete for funds on an equal footing with secondary care. The second phase in the development of networks is likely to see larger groupings responding to the new challenges of improving quality through the research governance framework (Scottish Executive Health Department, 2001). The requirements of research governance and the perception by the NHS that primary care R&D needs to become more focused on the priorities of the service mean that change is in-

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evitable. Individual clinicians who want to undertake research related to their own interests and concerns will need to persuade other funding bodies that the research should be funded. Networks will retain a role in preparing NHS employees for this task, linking them to academic colleagues and supporting them to successfully complete their work.

Conclusions

Over the four years since its formation, TayRen has made a significant contribution to the increase in research activity in primary care in Tayside in line with Carter *et al*. (2002)'s meaningful outcomes.

Highlights of our fourth year include:

1) A total of 17 projects involving TayRen worth £3.5m applied for and funding on 12 projects worth £2.3m funded during 2001/2.
2) Continuing high productivity with 48 presentations and 30 publications in the past year.
3) Provision of support to 18 TayRen members undertaking higher degrees.
4) Twelve new projects being submitted in the past year.
5) Continuing involvement of many medical and dental practices with 495 NHS primary care staff in 27 professions involved.
6) Design and delivery of successful training courses open to all NHS staff interested in health services research.

New challengers will include consolidation and improvement of the quality of primary care research through the Research Governance Framework. As Green and Dovey (2001) contended, it is time to 'secure these networks as a place of learning, where doctors and patients in the community are united with science to search for answers that can provide a better basis for daily practice'.

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