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PERSPECTIVE PIECE

Forging successful partnerships in psychosis research: lessons from the Cavan–Monaghan First Episode Psychosis Study

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Embedding psychosis research within community mental services is highly desirable from several perspectives but can be difficult to establish and sustain, especially when the clinical service has a rural location at a distance from academic settings with established research expertise. In this article, we share the experience of a successful partnership in psychosis research between a rural Irish mental health service and the academic department of a Dublin medical school that has lasted over 30 years. We describe the origins and evolution of this relationship, the benefits that accrued and the challenges encountered, from the overlapping perspectives of the academic department, the mental health service and psychiatric training. We discuss the potential learning that arose from the initiative, particularly for national programme planning for early intervention in psychosis, and we explore the opportunities for enhanced training, career development and professional reward that can emerge from this type of partnership.

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Introduction

One of the many challenges faced in advancing research in psychiatry is in establishing and maintaining its relevance to clinical service. This is particularly the case in psychosis research, much of which in recent years has been carried out at the 'molecular' level and has yet to exert a major influence on the day-to-day practice of clinicians. In this context, it seems highly desirable, if not essential, that researchers in psychosis are meaningfully engaged in the real world of service delivery.

Among the potential rewards of local engagement between researchers and state-funded clinical services, the most obvious is that studies reflect actual service conditions. Secondly, local collaboration is likely to result in research that finds more acceptance and support among clinicians of all disciplines and among service managers. Thirdly, the integration of research and clinical activity can enhance professional training, recruitment and support career development. Finally, service users and carers are more likely to experience tangible benefits from research that provides a convincing local evidence base upon which to advance the business case for future service developments. This latter benefit is particularly salient in light of the recent emergence of implementation science, reflecting increased recognition of context and process as key factors in the success, or otherwise, of attempts to bridge the gap between research and practice (Brooks *et al.* 2011).

In this article, we describe the partnership in research sustained for more than 30 years between an academic department within the Royal College of Surgeons in Ireland (RCSI), a large medical school located in Dublin, and Cavan–Monaghan Mental Health Service (CMMHS). We trace the origins and evolution of this partnership and address the associated challenges and opportunities from the three separate but inter-related perspectives of the authors, an academic who led the research studies, a former Clinical Director at CMMHS and two former Research Fellows who participated in both the research and clinical service components. We explore the factors that appeared to be pivotal to the success of the partnership and the inevitable hurdles encountered in reconciling the research goals with the demands of service delivery, post-graduate training and career development. We also acknowledge the limitations of the initiative, not all of which were overcome. Our aim in sharing this experience is to stimulate further efforts to support sustainable high-quality

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research within mainstream mental health services, especially those in rural areas at some distance from major academic settings.

Origins and evolution

In the early 1980s, John Waddington, recently appointed to the Department of Clinical Pharmacology (now Molecular and Cellular Therapeutics) at RCSI, became aware of clinical research activity in psychosis carried out by a consultant psychiatrist, Dr Hanafy Youssef, employed within CMMHS. An introduction was arranged at which both individuals recognised their shared interest in psychosis research and their complementary skills and experience. The Clinical Director of CMMHS at the time, Dr John Owens, provided willing support for a proposed collaboration and approval for a series of studies that culminated in several peer-reviewed publications (Waddington *et al*. 1987; Waddington & Youssef 1988; Youssef *et al*. 1991). This contributed an initial body of credible published work, leading to a successful grant application from RCSI–CMMHS and the Cluain Mhuire Community Mental Health Services (Dr Eadbhard O'Callaghan and Dr Conall Larkin) to the Health Research Board (HRB) to fund a Schizophrenia Research Unit, 1991–95. Outputs from the HRB Unit (see e.g. Waddington & Larkin 1993) resulted in what is now the Stanley Medical Research Institute (SMRI) awarding philanthropic funding for a collaborative research programme in first episode psychosis, as outlined in a companion article in this issue (see Waddington & Russell 2019).

The SMRI grant funding enabled a Cavan—Monaghan First Episode Psychosis Study (CAMFEPS) Research Registrar post to be established that included a part-time clinical commitment to a rehabilitation psychiatry service, recently introduced as a sub-specialty within CMMHS. This embedding of the Research Registrar post within the clinical service meant that there was no loss of momentum in progressing the research despite the departure from the service of the consultant involved in the initial collaboration.

Meanwhile, several other important clinical service and medical educational developments had taken place within CMMHS. In a radical reconfiguration of the service in 1998, two relatively well-staffed community mental health teams (CMHTs) were set up in counties Monaghan and Cavan as well as specialist services in rehabilitation psychiatry and psychiatry of older age. The single most impactful service change was the creation of two dedicated home-based treatment (HBT) teams, one in each county, providing rapid assessment and short-term management of acute psychiatric presentations that would otherwise require inpatient treatment. These teams had an immediate impact in reducing inpatient admission rates in Monaghan and Cavan (McCauley *et al*. 2003; Iqbal *et al*. 2012). A further service development involved primary care liaison psychiatry as a clinical and medical educational initiative (Russell *et al*. 2003; Wright & Russell 2007).

As a separate but complementary strand in the evolving relationship between CMMHS and RCSI, the service became one of the undergraduate teaching sites of RCSI. Medical students in groups of 6–8 at a time were placed within CMMHS for their 7-week clinical clerkship in psychiatry. In support of this teaching role, an RCSI Tutor post and an honorary Senior Lecturer position became available to CMMHS trainees in psychiatry and consultant psychiatrists.

By 2005, the SMRI funding had expired so that external funding for the CAMFEPS Research Registrar position was no longer available. Fortunately, at that point it proved possible to continue this position with funding from within CMMHS, albeit with an agreement to increase the sessional clinical commitment to the service. This enabled the CAMFEPS programme to continue through to its intended conclusion in 2010. Around the same time, service innovations in early intervention for psychosis (EIP) in Ireland were advancing, under the leadership of the late Prof. Eadbhard O'Callaghan, who had developed the Dublin East Treatment and Early Care Team (DETECT) service in Dublin (Renwick *et al*. 2008). Due to longstanding collaborative relationships between the CAMFEPS and DETECT Principle Investigators and Research Registrars, DETECT provided helpful advice and generously shared educational materials for general practitioners (GP). This, in turn, facilitated the establishment by CMMHS of its own EIP service, Carepath for Overcoming Psychosis Early (COPE; Nkire *et al*. 2015). In addition to operating as a clinical EIP service, COPE was a natural follow-on from the CAMFEPS programme, such that its implementation and evaluation became the obvious focus for continuing the partnership. Moreover, the quantitative and qualitative evaluation of the COPE programme benefited from the continued use of assessment instruments employed and the data accumulated during the 15 years of the CAMFEPS study.

The clinical service perspective

The benefits of the CAMFEPS research programme originated in a serendipitous encounter between a Dublin-based academic and a rural-based consultant psychiatrist interested in psychosis research. There would have been an obvious risk, in light of this ostensibly fragile beginning, that research collaboration could have proved unsustainable in the period following the departure of this consultant, insofar as the remaining CMMHS

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consultants at that time were preoccupied with the implementation of service improvements. The fact that this did not occur seems remarkable, but can be traced to a range of factors acting in combination.

The first of these was the support of the initiative by Dr John Owens, the CMMHS Clinical Director at the time, who recognised the potential long-term service benefits. Secondly, the ensuing grant funding of a substantive Research Registrar position, appointed for successive 2-year periods, proved crucial to the viability of the research as it involved an active clinical service contribution. This element, in turn, facilitated the development of a positive relationship between the Research Registrar and members of the multidisciplinary clinical team, whose good will and practical co-operation was required in identifying and assessing new cases of psychosis incepted into CAMFEPS. Paradoxically, the fact that CAMFEPS was not identified personally with any of the CMMHS consultant psychiatrists may have facilitated general co-operation from clinicians across the service. It helped avoid the perception that an individual consultant psychiatrist had a proprietary interest in advancing CAMFEPS or a conflict of interest between the clinical and research agenda.

As the CAMFEPS Research Registrars within CMMHS began to achieve first author publications in high-impact international journals and attained MD qualifications, tangible benefits accrued to the service in terms of recruiting high-quality trainees in psychiatry. The associated enhancement of the reputation of the service also helped in making the business case for CMMHS to assume the bulk of the costs associated with the Research Registrar position in the period after expiry of external grant funding.

A further factor in the success of the partnership, from the CMMHS perspective, was the consistent high quality of research supervision and support offered to the Research Registrars and the organisation and adaptation of CAMFEPS to fit with the unique configuration of CMMHS. This meant that there was minimal administrative burden or supervisory demands placed upon senior clinicians and managers within CMMHS. Seamless managerial transitions also occurred with regard to the CAMFEPS–CMMHS partnership during a period that spanned the tenures of four successive Clinical Directors.

Notwithstanding these successes, the CAMFEPS–CMMHS partnership was not without its limitations and in hindsight certain opportunities were missed. Firstly, the research output from CAMFEPS and its international reputation within the psychosis research community could have been better communicated by successive Clinical Directors to staff within CMMHS and to the wider clinical community in Ireland. The extent to which publications and MD theses were circulated across CMMHS was limited and greater awareness of the research findings could have been created within the undergraduate medical teaching curriculum and at national meetings and conferences, such as those of the College of Psychiatrists of Ireland. Also, greater synergies could have been explored between CAMFEPS and other high-profile clinical research in psychosis, carried out in parallel, at the RCSI Department of Psychiatry in Dublin as such collaborations occurred primarily in the area of laboratory-based studies (O'Tuathaigh *et al*. 2010; Behan *et al*. 2012). Therefore, these separate strands in the RCSI–CMMHS relationship, in medical education and research, could have been better interwoven, thereby strengthening the partnership and maximising its broader clinical service and research impact at a national level.

Challenges emerged also in the transition from CAMFEPS, as a research programme, to COPE as a clinical EIP service. Whereas CAMFEPS research benefitted from having an 'arms-length' relationship with day-to-day clinical service activities, this same feature may have impacted negatively on COPE, as an EIP service, in attracting the managerial support and dedicated resources required to achieve its full potential. A related obstacle may have been that within CMMHS, the CMHT co-ordinator role and HBT teams were already well established and valued as providing a rapid and effective response to referrals of patients with acute psychosis, including those with a first episode (McCauley *et al*. 2005; Nkire *et al*. 2014, 2015). It is of note that patients with acute psychosis accounted for 22% of HBT admissions in Monaghan and 23% in Cavan, considerably higher percentages than those reported recently from the North Cork HBT service (McCauley *et al*. 2003; Nkire *et al*. 2014; Lalevic *et al*. 2017). It may have been difficult, in this context, for the salience of EIP, and its added value within the range of existing clinical services at CMMHS, to be fully appreciated.

As a further hurdle, the evaluation of COPE's impact, to date, has been frustrated by recent inability to recruit senior trainees in psychiatry for the 2-year Research Registrar post, as a consequence of the crisis in medical recruitment nationally. It is also regrettable that while some of the CAMFEPS Research Registrars are currently employed as consultant psychiatrists in the Irish mental health service, several others were not attracted to remain within the country to pursue their careers, with Canada proving to be a particularly attractive alternative. The loss of this cohort of talented clinician-researchers from the Irish mental health service represents a manifest failure in human resource management at a national level, the negative consequences of which will be experienced for years to come.

However, notwithstanding the various limitations and challenges described, the fact remains that the two existing examples of EIP in this country, the DETECT and COPE services, both emerged directly from complementary research studies in first episode psychosis, one in an urban and one in a rural setting. Both programmes have obvious potential, therefore, in providing local context and experience in regard to the design and implementation of the National Programme for Early Intervention in Psychosis.

The lead researcher perspective

A unique feature of the CAMFEPS programme – and one that that has contributed to its international recognition – is the fact that it is based on an unusually complete epidemiological sample of all new cases of psychosis in a rural setting. The opportunity to carry out the study in the counties of Cavan and Monaghan enabled the sample to be drawn from a relatively homogenous and stable population in terms of inward and outward migration, especially in the earlier years of the study and in the relative absence of some of the biopsychosocial factors that can characterise more urban settings (see Kelly *et al*. 2010; Waddington & Russell 2019).

Other factors that contributed to the quality of the research derived from the various service developments within CMMHS. The orientation of CMMHS towards the community and associated dispersed work locations of CMMHS multidisciplinary staff across both counties created multiple lines of communication with statutory and voluntary community agencies. Mutual co-operation that had arisen from primary care liaison GP practice visits and regular contacts between HBT team members and GPs also helped in the early identification of potential new cases. Moreover, successful inception into the study and subsequent engagement with patients and families was facilitated by HBT teams offering initial assessment in locations other than the hospital emergency department and by positive perceptions of the HBT service on the part of patients, carers and GPs (Bannon & McDonald 2003; McCauley *et al*. 2005). One issue encountered was concern over the extent to which senior clinical staff in CMMHS were engaged in and identified with CAMFEPS vis-à-vis the Clinical Directors. While some senior clinicians expressed interest in becoming involved more directly over the course of CAMFEPS, it proved difficult to translate this into specific practical involvement. This likely reflects the difficulties encountered in attempting to reconcile genuine intellectual curiosity and career aspirations with the relentless demands and responsibilities of clinical service provision.

The psychiatry trainee perspective

The 2-year CAMFEPS Research Registrar position in CMMHS offered opportunities, from a post-graduate training perspective, that are usually only available in large urban settings. The trainee gained valuable clinical experience from working within a progressive, rural and relatively well-resourced community mental health service. This was complemented by participation in an established project with clearly defined structures, roles and responsibilities and high-quality academic support and clinical supervision. The training experience was further enriched by the opportunity to work within the well-developed HBT service and to develop positive relationships with local GPs because of the established primary care links. Whilst the Research Registrar post was weighted in favour of research time, the clinical service commitment was sufficient to allow for successful integration of both research and clinical aspects. It also included opportunities to gain important managerial skills when the registrar 'acted up' as clinical team leader during periods of consultant leave. These experiences, taken together, contributed considerably to further career progression in terms of the ability to compete successfully for higher training positions and subsequent consultant psychiatrist posts.

Despite the study population being drawn only from the counties of Cavan and Monaghan, the post also brought with it opportunities to network with professional colleagues in Dublin services whose co-operation was readily provided in tracing potential new cases of psychosis treated within private and forensic psychiatric settings. Moreover, close ties and positive relationships with the DETECT service enriched the personal experience of the trainee, helped to prevent professional isolation and facilitated networking with the wider psychosis research community in Ireland. In addition, the grant funding and increasing recognition of CAMFEPS created opportunities to travel to international meetings to present the latest findings.

Training and practical experience was provided in administering a wide variety of standardised assessment tools to patients incepted to the study and their families, and this was highly valuable in building research skills. Involvement in the study at all stages, from design to project administration and management, data analysis, presentation and dissemination of findings, provided a solid base from which to build a future career in academic psychiatry.

As a testament to its success, from the academic career development perspective, over the course of CAMFEPS six out of ten Research Registrars were awarded MD degrees based on theses addressing various components of the overall study, under joint academic and clinical supervision from, respectively, the lead researcher and the Clinical Director. In addition, 10 Research Registrars published a total of 16 first-author articles on work relating to the study in high-impact international medical journals, together with a further 16 co-authored journal articles and 9 co-authored book chapters.

Discussion

This article describes a successful collaboration in psychosis research between a rural Irish adult mental health service and a large urban third-level health sciences institution. The sustainability of the CAMFEPS project over such a lengthy period can be largely ascribed to the fact that it adapted to and benefited from clinical service innovations. However, the CAMFEPS research also informed and facilitated further service development, culminating in the recent COPE project for early intervention in psychosis.

From a clinical service perspective, the CAMFEPS–CMMHS partnership could usefully inform the implementation of a National Clinical Programme for Early Intervention in Psychosis in several ways. The first of these is that it highlights the need to approach EIP not in isolation, but within existing mental health policy and practice vis-à-vis *Vision for Change* (2006). Of particular relevance here is the interface between EIP services and HBT teams already enshrined in national policy as key components of all services. Currently, HBT teams' distribution, roles and staffing vary considerably across the country, especially in relation to the extent to which they provide acute services to people presenting with psychosis (O'Keeffe & Russell 2018).

Secondly, our experience in CAMFEPS suggests that it is essential to ascertain the extent to which individual mental health services are currently offering an effective response to first episode psychosis. The point of departure for this exercise should not be the assumption that services hospitalise people with first episode psychosis routinely. The EIP Clinical Programme should not be designed to accommodate a failing health system, based on an acute care model that is not fit for purpose. Similarly, it should not follow the example of other national clinical programmes in normalising general hospital emergency departments as a locus of mental health care. Rather, it should plan and deliver a coherent, proactive, community-based response that maximises the strengths of primary care and makes judicious use of limited resources within secondary and tertiary care mental health services. Finally, the National EIP Programme should balance the need for EIP services in any given service location with the risks of service fragmentation, increased transactions along the referral pathway and potentially fractious negotiations within and between services.

From the perspective of research in psychosis, the lesson from the CAMFEPS–CMMHS–RCSI partnership is positive in terms of the benefits from a rural location and with regard to the sustainability of clinical research collaboration despite geographic distance. The implications from this are that broader collaboration between mental health services and academic institutions should be considered as a worthwhile investment, with the aim of designing future services that are context-sensitive as well as evidence-based. Key ingredients in such collaboration, as we have identified, are that the lead researcher provides sufficient academic supervision and nurtures positive relationships with senior clinicians and that the design and methodology shows flexibility in adapting to local service conditions.

From the post-graduate training and career development perspective, our experience suggests that psychiatry trainees could benefit considerably from the types of opportunities we have described here. However, the potential benefits to individual trainees and to future clinical service development will only be fully realised in a situation where the ongoing career pathway within the country is secure and competes successfully with opportunities available abroad.

An added hurdle in providing such opportunities has emerged in terms of the recent enactment of the General Data Protection Regulation (GDPR) legislation. Clearly, the impact of GDPR on clinical research and service evaluation in psychiatry remains to be seen. However, there is an obvious concern that, faced with the unknown consequences of requirements to obtain individual patient consent to the use of personal data for research purposes, clinicians may avoid service-related research entirely as excessively burdensome administratively and fraught with medico-legal risk. This consequence seems all the more likely in resource-constrained rural mental health service settings that are not supported by in-house and easily accessible sources of expert guidance to deal with this area. There is, nonetheless, an enduring ethical and professional duty on the part of clinicians to seek to evaluate their services with the goal of delivering evidence-based practice. This must be assertively communicated to relevant national agencies with oversight of GDPR in the forthcoming period, so that important research leading to future service development is not retarded or compromised in the process of ensuring adherence to legal requirements for individual data protection.

In conclusion, we have described the mutual benefit of the CAMFEPS–CMMHS–RCSI collaboration from the perspectives of both institutions involved and the authors. In so doing, we acknowledge the inherent limitation that the views and opinions of the many other participants in the CAMFEPS–CMMHS–RCSI collaboration may vary from those presented here. However, we have attempted to convey both the positive aspects and rewarding outcomes as well as the challenges, pitfalls and unintended consequences, in an effort to achieve balance and to enhance the potential learning for any future attempts at similar initiatives.

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Conflict of interest

VR, NN, TK and JLW have no conflicts of interest to disclose.

Ethical standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The authors assert that ethical approval was not required for publication of this perspective piece.

References

Bannon H, McDonald B (2003). Patient satisfaction with home treatment in mental health. *Irish Nurse* **5**, 24–25.

Behan AT, Hryniewiecka M, O'Tuathaigh CM, Kinsella A, Cannon M, Karayiorgou M, Gogos JA, Waddington JL, Cotter DR (2012). Chronic adolescent exposure to delta-9-tetrahydrocannabinol in COMT mutant mice: impact on indices of dopaminergic, endocannabinoid and GABAergic pathways. *Neuropsychopharmacology* **37**, 1773–1783.

Brooks H, Pilgrim D, Rogers A (2011). Innovation in mental health services: what are the key components of success. *Implementation Science* **6**, 1–10.

Iqbal N, Nkire N, Nwachuku I, Young C, Russell V (2012). Home-based treatment and psychiatric admission rates: experience of an adult community mental health service in Ireland. *International Journal of Psychiatry in Clinical Practice* **16**, 300–306.

Kelly BD, O'Callaghan E, Waddington JL, Feeney L, Browne S, Scully PJ, Clarke M, Quinn JF, McTigue O, Morgan MG, Kinsella A, Larkin C (2010). Schizophrenia and the city: a review of literature and prospective study of psychosis and urbanicity in Ireland. *Schizophrenia Research* **116**, 75–89.

Lalevic G, Suhail A, Doyle H (2017). Home-based crisis team in North Cork: service description and patient-related outcomes. *Irish Journal of Psychological Medicine* 1–5. doi: 10.1017/ipm.2017.79 Published online: 14 December 2017.

McCauley M, Bergin A, Bannon H, McDonald B, Bedford D, Russell V (2005). How do GPs experience home-based treatment for acute psychiatric disorders? *Primary Care and Community Psychiatry* **10**, 159–163.

McCauley M, Rooney S, Clarke C, Carey T, Owens J (2003). Home-based treatment in Monaghan: the first two years. *Irish Journal of Psychological Medicine* **20**, 11–14.

Nkire N, Nwachukwu I, Russell V (2014). Profile and activities of a rural home-based psychiatric treatment service in Ireland. *International Journal of Psychiatry in Clinical Practice* **18**, 125–130.

Nkire N, Sardinha S, Nwosu B, McDonough C, De Coteau P, Duffy I, Waddington JW, Russell V (2015). Evaluation of knowledge and attitudes among primary care physicians in Cavan-Monaghan as 'gatekeepers-in-waiting' for the introduction of Carepath for Overcoming Psychosis Early (COPE). *Early Intervention in Psychiatry* **9**, 141–150.

O'Keeffe B, Russell V (2018). Home treatment services for acute mental disorders: an all-Ireland survey. *Irish Journal of Psychological Medicine*. doi: 10.1017/ipm.2017.83 Published online: 23 January 2018.

O'Tuathaigh CM, Hryniewiecka M, Behan A, Tighe O, Coughlan C, Desbonnet L, Cannon M, Karayiorgou M, Gogos JA, Cotter DR, Waddington JL (2010). Chronic adolescent exposure to Δ-9-tetrahydrocannabinol in COMT mutant mice: impact on psychosis-related and other phenotypes. *Neuropsychopharmacology* **35**, 2262–2273.

Renwick L, Gavin B, McGlade N, Lacey P, Goggins R, Jackson D, Turner N, Foley S, McWilliams S, Behan C, Lawlor E, Cullen W, O'Callaghan E (2008). Early intervention service for psychosis: views from primary care. *Early Intervention in Psychiatry* **2**, 285–290.

Russell V, McCauley M, MacMahon J, Casey S, McCullagh H, Begley J (2003). Liaison psychiatry in rural general practice. *Irish Journal of Psychological Medicine* **20**, 65–68.

Waddington JL, Larkin C (1993). A new developmental epidemiology of schizophrenia: the HRB Schizophrenia Research Unit, 1991-92, and contemporary perspectives of the disease. *Irish Journal of Psychological Medicine* **10**, 56–59.

Waddington JL, Youssef HA, Dolphin C, Kinsella A (1987). Cognitive dysfunction, negative symptoms, and tardive dyskinesia in schizophrenia. Their association in relation to topography of involuntary movements and criterion of their abnormality. *Archives of General Psychiatry* **44**, 907–912.

Waddington JL, Youssef HA (1988). Tardive dyskinesia in bipolar affective disorder: aging, cognitive dysfunction, course of illness, and exposure to neuroleptics and lithium. *American Journal of Psychiatry* **145**, 6130616.

Waddington JL, Russell VR (2019). The Cavan-Monaghan First Episode Psychosis Study (CAMFEPS): arbitrary diagnostic boundaries across the gene-environment interface and within evolving models of care. *Irish Journal of Psychological Medicine* (in press).

Wright B, Russell V (2007). Integrating mental health and primary care services: a challenge for psychiatric training in Ireland. *Irish Journal of Psychological Medicine* **24**, 71–74.

Youssef HA, Kinsella A, Waddington JL (1991). Evidence for geographical variations in the prevalence of schizophrenia in rural Ireland. *Archives of General Psychiatry* **48**, 254–258.