Original Research

Building social capital with interprofessional student teams in rural settings: A service-learning model

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Abstract

Objective: To describe outcomes of a model of service learning in interprofessional learning (IPL) aimed at developing a sustainable model of training that also contributed to service strengthening.

Design: A total of 57 semi-structured interviews with key informants and document review exploring the impacts of interprofessional student teams engaged in locally relevant IPL activities.

Setting: Six rural towns in South East New South Wales.

Participants: Local facilitators, staff of local health and other services, health professionals who supervised the 89 students in 37 IPL teams, and academic and administrative staff.

Main outcome measures: Perceived benefits as a consequence of interprofessional, service-learning interventions in these rural towns.

Results: Reported outcomes included increased local awareness of a particular issue addressed by the team; improved communication between different health professions; continued use of the team’s product or a changed procedure in response to the teams’ work; and evidence of improved use of a particular local health service.

Conclusions: Given the limited workforce available in rural areas to supervise clinical IPL placements, a service-learning IPL model that aims to build social capital may be a useful educational model.

KEY WORDS: evaluation, interprofessional learning, service learning, social capital.

Introduction

Interprofessional learning (IPL) in health professional education is based on the notion that learning together will support more effective ways of working together.1 IPL has the potential to improve interprofessional collaboration and the effectiveness and quality of patient care. Practice-based, rather than classroom-based, collaborative learning has been commended as an effective application of IPL.2–7 However, it can be cumbersome to arrange and supervise.8 In rural Australia with its relative workforce shortage, sustainable, practice-based IPL can be particularly challenging.9

In this paper, we describe a model of IPL – the Health ‘Hubs and Spokes’ (HHS) Project – that was based in rural towns and organised around locally relevant priorities. HHS involved small teams of students from different disciplines, working together on a project identified by the host organisation. It was designed to be a sustainable model of interprofessional education using service learning – a type of practice-based learning where students engage with a community partner to collaborate, reflect and develop outcomes of real-world benefit.10 Although service learning is relatively new to Australian higher education settings, it is increasingly being adopted and is particularly well suited to students in the health professions.11,12

In theory service learning can lead to mutual benefits and outcomes for community organisations, universities and students, as a result of engaged scholarship and partnerships focused on clearly articulated local needs and service gaps.13 A risk of university–community partnerships is that university needs may be prioritised over those of the community.14 To avoid this, HHS focused on aspects of social capital that are particularly relevant for rural communities: the Project worked within networks of trusted agents in the community (community-based facilitators and clinical supervisors)15 and through its projects attempted to support the service capacity of essential health institutions in the community.16 Thus
social capital was both an integral factor in the working of HHS and in the outcome of the individual team projects. Students’ reactions, change in perceptions and the impact of HHS on their behaviour have been described elsewhere. In this paper, we describe the outcomes of the HHS at the level of the rural health service or community, and discuss potential programmatic tensions between focusing on service-level outcomes and on outcomes that relate to individual attitudinal and behavioural characteristics.

Methods
The Health ‘Hubs and Spokes’ Project is described in Box 1.

Study type
This was a qualitative study using semi-structured interviews with 43 local facilitators, academic staff and health professionals (ascertainment, 80% of those involved in delivering the project), and 14 representatives of local health or community services (Table 1).

Setting
This study was conducted in six rural towns in South East New South Wales (NSW), the location for 37 IPL teams of 89 students (82% of the 108 students who participated in IPL placements during the 3 years of the Project; the remainder undertook placements in the Northern Territory or as single teams in small towns with no rural clinical school staff (7 teams in all), and for logistical reasons are not part of this evaluation). Each town hosted between 2 and 10 teams. The period between the team placements and this study ranged from 6 to 30 months.

Data collection
The semi-structured interview schedule addressed informants’ views on the HHS, perceived outcomes (positive
or negative) from student projects supervised by them, or in their local area, and the impacts of the HHS on the health service organisation or the community. Where a student team had produced a particular resource, informants were asked if these were still in use. Documented evidence of project findings or changes (articles in local newspapers/in-house newsletters; changes in referral patterns) was also investigated. Interviews were conducted by telephone in all except two cases, where the informants provided emailed responses. Telephone interviews were hand recorded and reconstructed afterward from contemporaneous notes.

Analysis

We undertook a thematic analysis of the documents and interviews, using social capital as a conceptual lens. The focus of this study was therefore on outcomes at the level of the health service organisation: impacts on health workers, or effects for patients or clients, or changes in practice or policy within the organisation. Initial coding of the interviews was performed by one team member (PC), with review and synthesis of all data carried out by other team members to confirm that saturation had been achieved. We categorised outcomes as occurring at several points: increased local awareness of a particular issue addressed by the team, improved communication between different health professions, continued use of the team’s product or a changed procedure in response to the teams’ work or evidence of improved use of a particular local health service.

The study was approved by the ANU Human Research Ethics Committee (2010/526).

Results

The total number of students from each discipline included in teams in this analysis is provided in Table 2. Two thirds of the teams comprised two students; the rest had three or four students. The majority of teams (59%) were medicine/pharmacy combinations.

TABLE 1: Response rates for informants asked to identify outcomes from the student interprofessional learning (IPL) projects in their local area

<table>
<thead>
<tr>
<th>Group</th>
<th>Study population (n)</th>
<th>Responses (n)</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPL facilitator</td>
<td>14</td>
<td>12†</td>
<td>86%</td>
</tr>
<tr>
<td>Clinical placement supervisors</td>
<td>47</td>
<td>38‡</td>
<td>81%</td>
</tr>
<tr>
<td>Rural clinical school staff (academic and senior administrators)</td>
<td>13</td>
<td>11§</td>
<td>85%</td>
</tr>
<tr>
<td>Local health service/other informants</td>
<td>14</td>
<td></td>
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</tbody>
</table>

†33% had more than one role; ‡26% had more than one role; §64% had more than one role.

TABLE 2: Health professional students participating in interprofessional learning (IPL) teams across the six rural clinical school sites

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Student population (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>38</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>26</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>8</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>9</td>
</tr>
<tr>
<td>Nursing</td>
<td>8</td>
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<tr>
<td>Total</td>
<td>89</td>
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</table>

Outcomes of interprofessional learning team projects

Teams engaged in a variety of different tasks addressing such topics as chronic illness care, clients with intellectual disability in hospital, anticoagulant therapy and roles of community pharmacy. Six teams (16%, all medicine/pharmacy pairs) undertook patient case studies with home medications reviews (HMR). IPL facilitators who worked with the teams were an essential component of project effectiveness, through promoting interprofessional interaction, facilitating teamwork and monitoring team progress. The facilitators were local residents, recognised for their extensive knowledge and experience of local health services.

Table 3 provides examples of reported outcomes.

Increased awareness/improved communication between professions

Respondents reported that at least 10 of the student projects (≥27%) resulted in increased awareness of a particular issue or improved communication between professions.

‘It’s a bit early on to say anything conclusive, but it raised awareness [a new discharge information process using ehealth] was happening with the relevant people. It was valuable to include the Medicare Local and
### TABLE 3: Examples of reported outcomes from the student IPL projects and reporting sources

<table>
<thead>
<tr>
<th>Student project topic</th>
<th>Product</th>
<th>Reported outcome/s</th>
<th>Reporting sources</th>
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<tbody>
<tr>
<td>Increased awareness/improved communication&lt;br&gt;(a) Short education program for hospital staff on communicating with clients with intellectual disability in the perioperative setting&lt;br&gt;(b) A ‘social story’ booklet prepared for a particular client with intellectual disability</td>
<td>- Eased time for patient in hospital at the time and during subsequent hospitalisations&lt;br&gt;- Enhanced relationships and communication between acute and disability sectors&lt;br&gt;- Increased awareness for novice medical and nursing staff&lt;br&gt;- Training resource available for new staff</td>
<td>Disability service provider&lt;br&gt;Occupational therapist/supervisor&lt;br&gt;Physiotherapist/supervisor&lt;br&gt;General practitioner/rural clinical school supervisor</td>
<td></td>
</tr>
<tr>
<td>Falls risk prevention: an education program for Disability Services staff</td>
<td>- Training resource for staff; planned for future use</td>
<td>Disability service provider</td>
<td></td>
</tr>
<tr>
<td>A protocol for timely patient information transfer for Residential Aged Care Facility admissions</td>
<td>- Doctors more aware of required admission information&lt;br&gt;- Nursing Home receiving better information flow from local doctors&lt;br&gt;- Proposed system not introduced because online system needs to be developed first</td>
<td>Nursing home/supervisor&lt;br&gt;Disability service provider</td>
<td></td>
</tr>
<tr>
<td>Discharge information and emerging ehealth: use of Argus (Argus Connecting Care Pty Ltd, Mt Helen, Victoria, Australia) as a health communication tool</td>
<td>- Raised awareness of ehealth and need for interprofessional working among relevant groups</td>
<td>Pharmacist/supervisor&lt;br&gt;Medicare local&lt;br&gt;Disability service provider&lt;br&gt;Area health service</td>
<td></td>
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<tr>
<td>Continued use of ‘product’/changed procedure&lt;br&gt;Perioperative anticoagulation</td>
<td>- Recommendations formally accepted into procedures&lt;br&gt;- Chart still in operating theatre</td>
<td>Pharmacist/supervisor&lt;br&gt;General practitioner/rural clinical school supervisor</td>
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<tr>
<td>Detox in pregnancy</td>
<td>- Distributed by hospital pharmacy as needed&lt;br&gt;- Used in maternity ward ‘packs’ provided to relevant patients</td>
<td>Pharmacist/supervisor&lt;br&gt;General practitioner/supervisor&lt;br&gt;Maternity ward&lt;br&gt;Drug and alcohol service</td>
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<tr>
<td>Review of the client medical record documentation for the cardiac rehabilitation program&lt;br&gt;Cardiac rehabilitation patients’ understanding of why they take their medication: A ‘Cardiac Rehabilitation Diary&lt;br&gt;Changed procedures for documentation&lt;br&gt;Flowchart: ‘Assessment of bleeding &amp; thrombotic risk’ prepared operating theatre&lt;br&gt;Patient handouts: ‘Smoking in pregnancy’, ‘Substance use whilst breastfeeding’&lt;br&gt;Fridge magnet: ‘Life after cardiac rehabilitation’&lt;br&gt;‘Cardiac Diary’ prepared for local use</td>
<td>- Overall rolling project improved efficiency of Cardiac Rehab Program&lt;br&gt;- Ensured documentation procedures in line with guidelines and best practice&lt;br&gt;- Patients provided with recording sheets, diary and magnet&lt;br&gt;- Increased interaction between Rehab Program, doctors and patients&lt;br&gt;- Documentation and diary formally approved by local health service&lt;br&gt;- Diary still used at after 1 year&lt;br&gt;- Increased level of engagement with Program</td>
<td>Pharmacist/supervisor&lt;br&gt;Physiotherapist/supervisor&lt;br&gt;General practitioner/rural clinical school supervisor&lt;br&gt;Area health service&lt;br&gt;General practitioner/rural clinical school supervisor&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Drug and alcohol service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service</td>
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<tr>
<td>Improved use of service&lt;br&gt;Stroke Care Pathways</td>
<td>- Positive influence on more comprehensive local stroke treatment&lt;br&gt;- Increased use of allied health services in early stroke intervention</td>
<td>General practitioner/supervisor&lt;br&gt;OCCupational therapist/supervisor&lt;br&gt;Physiotherapist/supervisor&lt;br&gt;Health service</td>
<td></td>
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<tr>
<td>Falls risk prevention</td>
<td>- Raised awareness of lack of communication between aged care, community health, acute care sectors&lt;br&gt;- Raised falls risk as issue in the Nursing Home&lt;br&gt;- Nursing home has employed additional part time staff member to conduct falls risk assessments</td>
<td>Nursing home/supervisor&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service</td>
<td></td>
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<tr>
<td>Pulmonary Rehabilitation Program&lt;br&gt;Poster: ‘COPD Program information for GPs’&lt;br&gt;Patient resources: ‘COPD Action Plan’; ‘COPD: Information page’; ‘COPD: Evidence sheet’</td>
<td>- Foster placed in all local general practices and hospital raised awareness of existing services&lt;br&gt;- Some GPs using the Action Plan&lt;br&gt;- Increased recognition of locally available COPD program&lt;br&gt;- Increased referrals to local COPD service</td>
<td>General practitioner/rural clinical school supervisor&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service&lt;br&gt;Disability service provider&lt;br&gt;Area health service</td>
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COPD, chronic obstructive pulmonary disease; GP, general practitioner; IPL, interprofessional learning.
XXX Health Service in the audience’ (supervisor, discharge information & emerging eHealth)

**Continued use of a ‘product’ or procedure**

Of the 21 (43%) ‘products’ and/or changed procedure developed by students during their placement, 9 were still in use at the time of follow up.

‘[The project] lead to change in procedures . . . sorting out who is responsible for what . . . updated medication guidelines. . . . It also built relationships between medicine and pharmacy that lasts for the first few years after graduation’ (supervisor, peri-operative anticoagulation)

Some projects were able to integrate and build on each other to generate critical mass. For example, a team in the first year reviewed client record documentation for a Cardiac Rehabilitation Program with the aim of improving communication between referring doctors and other health providers. During the following year a second team developed a ‘fridge magnet’ reminder for patients with key messages from the program. In the same year another team developed a Cardiac Rehabilitation Diary to increase the educational component of the Program and to facilitate sharing of information between patients, their doctor and the Program staff. A year later all these products were still in use. Unfortunately a subsequent state-based change in cardiac rehabilitation service protocols made a clean sweep of existing processes, mandating a new record book for use across the state. Nevertheless the increased client engagement, improved structure and efficiency of the Cardiac Rehabilitation Program, and improved interaction between the Rehabilitation team, doctors and patients remained.

‘. . . I found the new documentation on communication across teams to be clear and concise. The documents were approved by the Forms Committee and are now being used . . . The [Cardiac Rehabilitation] diary was also approved by the Forms Committee, and it is now handed out to patients’ (local health service, cardiac rehab program)

**Improved use of a service**

According to respondents, 5 (14%) of the 37 teams contributed to a change in the way services were used. Outcomes from more recent team placements had the potential for improved service delivery but it was too early to be conclusive; for instance, inclusion of an education program on preventing falls among clients is planned for a disability service’ staff in-service training. Other changes were reported by some professional groups but not others.

‘It highlighted the need to be communicating with each other across sectors, and promoted dialogue between the different sectors for which falls are an issue’ (local health service, falls risk prevention)

‘The project has had positive outcomes with regards to a new rehab facility that is being set up. It drove us to new ways of thinking about thrombolysis care for stroke patients in XXX. The doctors were more informed about this. It focussed our thinking on treatment approaches, and that set the scene for more comprehensive treatment of stroke. It definitely helped to increase the profile of allied health professionals’ (supervisor, stroke care pathways)

‘The project was very valuable because it was timely. There was good representation across the professions at the student presentation [at the end of the project]. TRACs (Teaching and Research Aged Care Services) now see more stroke patients’ (local health service, stroke care pathways)

While we had primarily focused on capturing changes in social capital as outcomes of the individual team projects, respondents spontaneously identified several examples of improvements for patients as a result of project work, such as easing the experience of hospitalisation for a patient with intellectual disability in the perioperative setting, improved perioperative anticoagulation, the cardiac rehabilitation program and stroke care pathways.

**Discussion**

This service-learning IPL project generated a number of sustainable interventions and resources for local rural services. Our findings differ from those generally reported for IPL programs that focus on teams working in patient care, where indicators of success are improved care of individual patients.20 In contrast our teams mainly worked on projects with community applicability.

Students were able to work together to contribute to host organisations’ and communities’ social capital. Many of the projects focused on improved connections between health service and community, or between health practitioners. Such connections are critical elements of rural social capital. At the same time, this service-learning model was underpinned and reinforced by existing relational social capital in rural communities.15 Small, close-knit communities helped students fit in; social groups often took students ‘under their wing’, offering opportunities to participate in local activities. Rural health professional groups are often relatively small, with members well known to each other both within and between professions.9

This paper documents some evidence for wider benefits resulting from students’ IPL project activities as
identified by local actors, helping to re-connect and strengthen interprofessional relationships and build local social capital. Although HHS established a symbiosis between service learning and IPL by embedding the students’ IPL experience within real practice-based settings, service and experience are parallel. Team members generating strong service-based settings, service and experience are parallel the students’ IPL experience within real practice-symbiosis between service learning and IPL by embedding the students’ IPL experience within real practice.

Further iterations of this model should explore collaborations of students from a broader range of disciplines, and prospective, structured documenting of the processes underlying organisational impacts.

Acknowledgements

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References