

Quality and Effectiveness of Supported Tenancies for people with mental health problems (QEST)

Research Protocol (v.2 28.11.12)

Project summary

Around 60,000 people with mental health problems live in supported accommodation in England, costing the NHS and Local Authorities millions of pounds. However, little is known about the quality and effectiveness of supported accommodation services. This five year programme of research will address this evidence gap through four related projects. In these four workpackages, we will:

1. Adapt an existing quality assessment tool (the Quality Indicator for Rehabilitative Care - QuIRC) and an existing Patient Reported Outcome Measure (the Client Assessment of Treatment - CAT) for mental health supported accommodation services. We will identify any QuIRC and CAT items that require amendment through review by a service user reference group, an expert panel, and focus groups with staff and service users from the three main types of supported accommodation in England: residential care, supported housing, and floating outreach.
2. Survey a nationally representative sample of 90 supported accommodation services with the amended QuIRC. We will describe and compare the types of services, their costs, those who use them and their experiences of care using standardised measures including the adapted CAT. We will follow-up 450 service users to identify outcomes 30 months later including whether they moved on successfully from the service. Our data will allow us to compare the clinical and cost effectiveness of different types of supported accommodation service.
3. Carry out in-depth interviews with a sub-sample of service users and staff to identify the aspects of supported accommodation care they consider most useful and the challenges in providing them. We will use our findings from 2) and 3) to identify key aspects of care and incorporate these into the supported housing and floating outreach models that we will compare in the next phase of the research (see 4).
4. Investigate the feasibility of a large scale trial to compare the effectiveness of two commonly used models of supported accommodation: the “Train and Place” approach, that provides a constant level of staff on-site to a number of flats with the expectation of service users moving-on as they gain independent living skills; and the “Place and Train” approach, that provides floating outreach support of flexible intensity to service users living in a permanent, independent tenancy. We aim to recruit up to 50 service users and randomise them to receive one or the other. We will record the number of people referred to the trial, the number who take part and the number who drop out. We will assess outcomes 12 months after randomisation. This workpackage is subject to the submission of a separate REC application.

General information

Funding

The research is funded for five years by the National Institute for Health Research (Application RP-PG-0610-10097).

Research Team

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Programme Management

As Chief Investigator, HK will have overall responsibility for the research programme. She has previously led and delivered major national and international studies funded by the NIHR, DH and EC on time and within budget.

HK will have responsibility for ensuring good communication and collaboration between all partners and centres. She will Chair the programme management group whose membership includes all co-applicants. The group has already met to develop the research proposal. Collaborators will be invited to join the group as the programme progresses. In addition, regular project meetings within each participating centre will be held. Informal communication by email and telephone contact between HK, the researchers, the project manager and co-applicants will be used as required to allow clarification and speedy resolution of difficulties that arise in the running of each workpackage (WP).

Progress will be reviewed at programme management group meetings at which managerial and scientific issues will be discussed and decisions taken. An agenda will be circulated in advance taking account of forthcoming deliverables, ensuring that they are met in accordance with the project timetable.

Partners have already agreed their responsibilities in relation to delivery of individual WPs and associated tasks as follows:

HK will supervise the project manager and the two researchers based at UCL with MK's assistance. HK and MK will have overall responsibility for WP1, WP2 and WP4.

SP will supervise the researcher based at Queen Mary's University London.

SP and GL will oversee the qualitative components of the programme and lead the development of the qualitative data analysis strategy. SP will have overall responsibility for WP3.

SE will oversee all aspects of quantitative data management in conjunction with the Pragmatic Clinical Trials Unit at Barts and The London School of Medicine of which she is Director. She will lead development of the data analysis strategy for WP2 and WP4 and supervise the junior statistician to carry out data analysis.

PMcC will lead the health economic components of the programme and supervise the junior health economist based at the Institute of Psychiatry.

GL will lead the Patient and Public Involvement (PPI) aspects of the project (see section 19).

GS, JE and SC will provide specialist expertise on supported housing and quality assessment relevant to the whole programme.

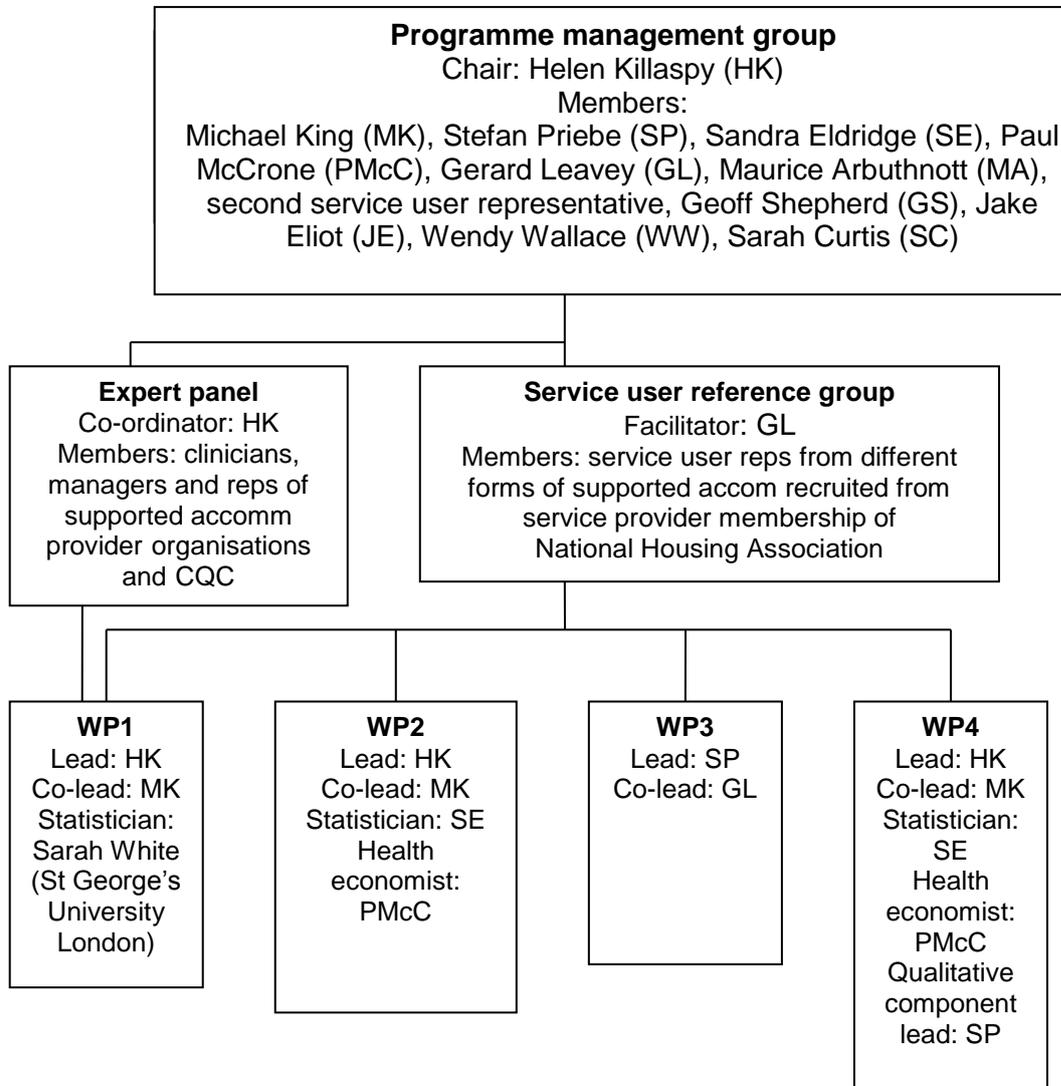
HK will oversee the study budget in conjunction with the host organisation (Camden and Islington NHS Foundation Trust - CIFT) and ensure progress reports are delivered on time.

WW will ensure that CIFT manages the contract with NIHR, the sub-contracts and the budget appropriately.

HK will apply for the project to be adopted by the Mental Health Research Network (MHRN) who will provide additional support to the project, particularly in relation to recruitment.

See below an organisational diagram of the project management structure.

Organisation chart to show management structure for the Quality and Effectiveness of Supported Tenancies for people with mental health problems (QEST) research programme



Rationale and background information

The NHS Hospital Plan of 1962 heralded the process of deinstitutionalisation in England and Wales and the development of community based mental health care [1]. The number of long stay beds has reduced from over 150,000 in 1955 to less than 3,000 today [2]. Subsequent policy has moved the responsibility for provision of mental health supported accommodation from Regional Health Authorities to Local Authorities (LAs) and local NHS commissioning, with an increasing emphasis on partnership working between statutory, voluntary and independent sectors [3-6].

In England, around a third of working age adults with severe mental health problems reside in supported accommodation provided by health and social services, voluntary organisations,

housing associations and other independent providers. These include nursing and residential care homes, group homes, hostels, blocks of individual or shared tenancies with staff on site, and independent tenancies with “floating” or outreach support from staff. In 2006 around 12,500 people with mental health problems in England were in a nursing or residential care home [7] and around 40,000 were receiving floating outreach [8]. A recent Freedom of Information enquiry to PCTs and LAs suggests that these figures are underestimates [9]. The costs vary from around £150 per week for floating support to around £500 for residential care. The annual cost to the public purse is therefore hundreds of millions of pounds. Although, historically, nursing care has been considered an NHS financial responsibility and other forms of supported accommodation were considered the responsibility of LAs, the “mixed economy” of provision and greater integration of mental health and social care services in general, has led to a blurring of this distinction. In addition, many patients require care packages that include health and social care inputs. Add to this the fact that generic, local mental health services provide care co-ordination and additional input to the residents and staff of supported accommodation projects through the Care Programme Approach [10], and it can be seen that it is not meaningful to separate “health” and “social care” investment in mental health supported accommodation services.

Those who require these services have complex needs and functional impairments that impact on their ability to manage activities of daily living. Many people with severe, enduring mental health problems such as schizophrenia experience active symptoms of illness despite medication and impairments in cognition and conation [11]. They may require assistance to manage their medication, bills, personal care, shopping, cooking, cleaning and laundry. However, the majority have been shown to be able to sustain community tenure with support and many gain skills and can manage with less support over time [12,13]. Nevertheless, due to the stigma and secondary handicaps consequent on the illness, the vast majority are unemployed and many are socially isolated and do not participate in civil and political processes [14]. In short, despite the move towards community based care, this group remains one of the most socially excluded in society [15].

Despite the economic cost of supported accommodation there has been very little research to investigate the types of support delivered and their effectiveness [16]. As well as concrete outcomes such as the proportion of service users that move on to less supported settings, it is not known whether these services are intervening to improve the social inclusion of their users, though one qualitative study suggested that staff felt this was important [17]. In 2006, a review of floating outreach commissioned by the Department of Communities and Local Government [8] commented that “Success cannot be measured in terms of the number of clients who no longer require support. Factors such as sustained tenancies, rates of hospital readmission, attendance at day centres, voluntary work, training courses and employment should be taken into account” and concluded “there is a need to undertake more comprehensive and longer term studies to evaluate the impact of floating support services.”

The only survey of mental health supported accommodation to be carried out in England (led by co-applicant SP) found few differences in characteristics of service users in different types of setting and heterogeneity in the support offered [18]. The survey sampled 12 nationally representative regions, identified a total of 481 projects and 250 were randomly sampled. Of these, 153 responded to a postal survey; 57 were nursing/residential care homes (with a mean 16 residents), 61 were individual or shared flats with on-site staff support (with a mean 13 service users) and 30 provided floating outreach to a mean 34 service users in their own independent flats, usually rented from the LA or a Housing Association. Staff provided

anonymised data on 414 service users. The majority were male, 80% had a diagnosis of a psychotic disorder and 48% also had a substance misuse history. There were no differences in service user characteristics between service types. Around 40% of those in supported housing or receiving floating outreach were participating in some form of community activity (compared to 25% of those in residential care) but similar numbers of hours were spent by service users across all settings in education or work (mean 13 hours per week) and only 3% were in open employment. Between four and six service users (18-25%) moved on from each service annually. Although residential care settings had a higher proportion of trained mental health staff than the other services, almost all service users in all types of setting were prescribed medication and all services provided support with personal care and activities of daily living. The costs of these services appeared to be driven by the local tradition of provision rather than clinical need. Shepherd and Macpherson [2] have also commented that the development of local supported accommodation provision appears to be largely determined by history, the sociodemographic context of the area and the support available from primary care and secondary mental health services.

Many areas have supported accommodation systems where service users move to more independent settings as their skills improve. This allows for graduated “testing” but many users dislike repeated moves. Recently, there has been increased investment in supported flats rather than group settings since many services users prefer their own independent living space [19-21]. A number of studies have identified discrepancies between service user and staff views on the level of support required, with service users tending to prefer more independent accommodation [22,23]. Family members also tend to prefer their relatives move to staffed environments [24]. An important criticism of staffed settings is the maintenance of institutional regimes and impaired facilitation of service users’ autonomy through over support and a poor rehabilitative culture [25]. Conversely, some service users and family members have reported that independent tenancies are socially isolating [24,26].

Some studies have investigated the effectiveness of the “hospital hostel” (which provides 24 hour nursed care for people with longer term mental health problems) and shown benefits for up to 40% in social functioning and successful move on [27]. There have been no trials investigating the effectiveness of residential care, supported housing and floating outreach for people with mental health problems [28] and other types of studies investigating these services are few and poor in quality [16]. The paucity of research reflects the logistic difficulties in researching this area. Randomisation to different types of housing support may be resisted by clinicians who feel that service users require a staged process, moving from higher to lower supported settings as their skills and confidence increase, and by service users with clear preferences for particular services. It also seems that the availability of supported housing stock is more influential than clinical need in determining accommodation allocation. This also influences the use of “out of area placements” (nursing/residential care outside the service user’s area of origin) which have been criticised for their lack of rehabilitative ethos and the disruption they can cause to an individual’s recovery [9]. Although some use of out of area settings may be indicated for people with very complex problems (where small numbers support regional rather than local provision), the majority of those placed out of area by one Trust/LA had few differences in needs, social functioning and challenging behaviours compared to those using local rehabilitation services and supported accommodation. Many were able to be repatriated successfully to local supported housing [21] with associated annual savings of over £1m.

It is not known whether more tailored support delivered to service users in their own homes through floating outreach is more acceptable, more individualised and more cost-effective than a standard level of support provided in staffed facilities. However, in the US, the “Train and Place” approach (which provides a constant level of staffing on-site to a number of flats with the expectation of service users moving-on as they gain independent living skills) has been compared in a quasi experimental study to the “Place and Train” approach (which provides floating outreach support of flexible intensity to service users living in an independent, time-unlimited tenancy) and found to facilitate greater community integration and service user satisfaction [29].

Given differing opinions on the best forms of supported accommodation and the major financial investment needed for them, it is crucial to investigate their clinical and cost-effectiveness. Research in this area is long overdue. At present there is no standard quality assessment tool to compare supported accommodation services. Quality of care can be assessed in terms of the degree to which support and treatment are provided to facilitate improvements in the individual’s symptoms, functioning and quality of life [2]. It therefore includes structures (e.g. the built environment and the intensity and type of staffing), processes (e.g. the degree to which treatment is supervised and tailored to each service user’s needs) and the culture of the service (e.g. the expectation that service users will gain skills for more independent living and move on). Outcomes therefore might include the proportion of individuals who move on successfully to sustain community tenure in a less supported setting, the degree to which their autonomy is promoted towards achieving this, their satisfaction with services and other aspects of their life, and the degree to which they have the opportunity to engage in activities that they consider meaningful and rewarding (such as leisure, education, work and social relationships).

Recovery has been defined as “A deeply personal, unique process of changing one’s attitudes, values, feelings, goals, skills and roles. It is a way of living a satisfying, hopeful and contributing life even with the limitations caused by illness. Recovery involves the development of new meaning and purpose in one’s life as one grows beyond the devastating effects of mental illness.” [30]. Many of the outcomes suggested above for the evaluation of supported accommodation are also markers of recovery [31] and social inclusion [14]. Recent mental health policy has emphasised the importance for mental health services in promoting the recovery and social inclusion of its users [32]. The recovery orientation of supported accommodation services has also been highlighted as key to service users [33] and is clearly an important construct to assess when considering quality and outcomes.

In summary, there has been little research to guide clinicians, commissioners and providers in the most effective models of supported accommodation for people with mental health problems to date. Robust evidence is required to guide further development and target investment. Research that can describe the models of mental health supported housing that are most cost-effective and acceptable to service users, and that most promote social inclusion and recovery should now be carried out.

Study goals

Aims

To provide evidence on the quality, cost and effectiveness of supported accommodation for people with mental health problems in England. The findings will guide commissioners’

investment in the most effective approaches, identify key aspects of care for practitioners to provide and thus potentially benefit service users.

The programme will:

1. produce an accessible and reliable quality indicator for mental health supported accommodation;
2. provide evidence on social and clinical outcomes, costs and cost-effectiveness of different types of supported accommodation;
3. assess the feasibility of a trial comparing two models of supported housing.

Objectives

1. To adapt the “Quality Indicator for Rehabilitative Care” (QuIRC) and an existing Patient Reported Outcome Measure (PROM), the Client Assessment of Treatment (CAT) for use in mental health supported accommodation;
2. To assess quality and costs of supported accommodation services in England and the proportion of people who successfully move on to more independent settings;
3. To identify service and service user factors (including costs) associated with greater quality of life, autonomy and move-on;
4. To carry out a pilot trial to test the feasibility, required sample size and appropriate outcomes and costs for a randomised evaluation of two models of supported accommodation. One provides a constant level of staff support on-site and the other provides outreach support of flexible intensity to people in independent tenancies. Both will incorporate the key aspects of care identified in 3).

Study Design

This programme of research comprises four linked workpackages that will be carried out over five years. A flow chart is provided below to illustrate this.

Workpackage 1: Adaptation of the Quality Indicator for Rehabilitative Care (QuIRC)

Objective

To adapt a toolkit that assesses quality of mental health rehabilitation units for the assessment of supported accommodation for people with mental health problems.

Adaptation of QuIRC

There are no reliable and valid tools available to assess the quality of supported accommodation for people with mental health problems. In order to ensure that facilities provide care that attends to the needs of their service users, promotes their autonomy and respects their dignity and human rights, a suitable assessment tool is required. The Quality Indicator for Rehabilitative Care (QuIRC) is an international toolkit that assesses quality of care for people with longer term mental health problems in inpatient and community based rehabilitation units. It was developed through a project involving ten European countries funded by the EC (led by the lead applicant, HK and co-applicants MK and PMcC, with input from co-applicant GS). It is completed by the manager of the facility, takes around 60 minutes to complete and provides descriptive data and quality ratings of seven domains of care (built environment; therapeutic environment; treatments and interventions; self-management and autonomy; social interface; human rights; recovery-orientated practice). The validity of the QuIRC is based on the triangulation of evidence used to agree its content: 1) a

systematic review of the international literature on the components of care in facilities that provide for people with longer term mental health problems and the effectiveness of these components [34]; 2) Delphi exercises with service users, carers, advocates and mental health professionals in each country to identify the aspects of care that most promote recovery for people in longer term mental health facilities [35]; 3) a review of care standards in each of the countries that took part in the pan-European study [36]; 4) review of the content of the QuIRC by an international panel of experts in rehabilitation, recovery orientated practice, human rights law, mental health law, disability rights, care standards and experts by experience. The QuIRC collects comprehensive data on all aspects of care, its inter-rater reliability is excellent, there is good internal consistency between domain scores, and it has been found to have good correlation with standardised measures of service users' autonomy and experiences of care [36,37]. In other words, it can provide a proxy-assessment of service users' views of a unit even though it is completed by the unit manager. It is now available as a web based resource and has been translated into ten languages (www.quirc.eu). The QuIRC has been incorporated into the Royal College of Psychiatrists' peer accreditation process for inpatient mental health rehabilitation units. The web based version provides a printable report of each unit's performance on the seven domains of care and compares this with similar units in the same country. The Care Quality Commission, the registration body for supported accommodation in England, has suggested that the QuIRC report and peer accreditation be used when compiling evidence of a unit's performance for registration purposes.

Method

We propose to adapt the QuIRC and the CAT for use in mental health supported accommodation facilities. We do not envisage that this will be a major endeavour since the seven domains of care assessed by the QuIRC and the items assessed by the CAT are highly relevant to these kinds of services, but some items will need amending or deletion for more independent settings. We propose to review the content of the QuIRC and CAT through six separate focus groups with staff and service users of the three main types of supported accommodation in England (residential care, supported housing, floating outreach) [18] to gain their views on the relevance of individual items. Our intention is to obtain a broad range of perspectives, thus we will select on the basis of location (regional, inner-city and sub-urban areas) to allow us to consider variation in socio-economic contexts, policy and service provision. We will identify six services (two of each of the three types) for potential participation that participated in the previous national survey [18]. If there are problems in contacting these services (e.g. due to changes/relocation of the service since the national survey) we will use the contacts of the National Housing Federation to identify a similar service in the same region. We will meet with the service managers to explain the study and invite them to participate. We will carry out separate staff and service user focus groups in these services. We will ask the staff to assist with identification of potential service user focus group participants. Our previous experience suggests that such individuals can be identified by keyworkers relatively easily. Although these groups will be homogenous (according to housing type) they will contain men and women of different age groups and length of contact with mental health services. We will attempt to capture any particular concerns that arise from the staff and service user focus groups and then explore these further in subsequent focus groups. We aim to include around 6-8 participants in each focus group to facilitate an intimate discussion in which all will have a chance to contribute. Therefore very small services (if they exist) will be necessarily excluded. Focus groups will be facilitated by the researchers under the supervision of GL and SP. They will begin with a general discussion of the benefits and challenges associated with the respective accommodation type. We will then proceed to use the items within the QuIRC (staff focus

groups) and CAT (service user focus groups) to structure the content for the remainder of the discussion, examining each item in order to identify its particular strengths and weaknesses. We will conclude by identifying items that require amendment or deletion (setting-specific) and ascertain whether any additional items are required.

The focus group findings will be supplemented by the advice provided by two panels of experts who will be asked to review the QuIRC and CAT similarly. The first panel will comprise clinicians, managers and other key representatives of supported accommodation provider organisations and the Care Quality Commission. The project management group members already have links with these groups. Discussions will be carried out by email, teleconference and Skype for time and cost efficiency. This replicates the successful approach we took with our international panel of experts in the original pan-European study. The second panel will be our service user reference group. We will collate all responses from the focus groups, expert panel and service user reference group, identifying items where there is consensus for adaptation, deletion or a new item to be included. We will aim to keep additional items to a minimum in order to avoid disruption of the established psychometric properties of the QuIRC and CAT. Any new items will be constructed with attention to semantic clarity, avoiding ambiguous questions or items that are two questions in one. We will avoid overlap with other items. The project management group will discuss items where there is no clear agreement about their deletion, amendment or inclusion and agree the final adapted QuIRC and CAT content. The revised version of the QuIRC will be piloted with two service managers and any final amendments to wording made.

Analysis

Any amended domains of the QuIRC will then undergo inter-rater reliability testing through face to face interviews with a purposive sample of 60 managers of the three types of supported accommodation services that we will recruit in WP2 (see below for details). The researchers will approach 20 managers from each type of service to take part in an interview to complete the adapted QuIRC. Two researchers will attend the interview and both will independently rate the adapted QuIRC from the answers given by the unit manager.

Analysis of the inter-rater reliability of the adapted QuIRC will involve the Kappa coefficient for categorical data (weighted Kappa where the number of categories is above two) and the intraclass correlation coefficient (ICC) for normally distributed, continuous data. Factors with low reliability or with extreme response biases will be dropped.

We will engage the same IT specialist who developed the web based version of QuIRC to develop a similar web based adapted QuIRC for supported accommodation services. This will increase its accessibility and reduce the time required to complete it compared to a face to face interview. It will provide a similar facility to the original QuIRC in producing a printable report for the unit manager about the performance of their service on the seven domains of care assessed. We have included costs for the statistician involved in developing the original QuIRC (Sarah White) to carry out the necessary amendments to the algorithm that calculates QuIRC domain scores and to liaise with the IT specialist about these. Appropriate costs for this have been included. This work will be carried out concurrent with WP2.

Output

First comprehensive, reliable quality assessment tool for supported accommodation services in England.

Timeframe

Month 1-6: Ethical and R&D approvals, prepare study materials

Month 7-9: Focus groups, refine QuIRC

Month 10-12: Inter-rater reliability testing

Month 13-24: Develop web based adapted QuIRC

Workpackage 2: National survey and prospective study of supported accommodation for people with mental health problems

Objectives

To describe provision of supported accommodation in England and to investigate service and service user factors associated with positive outcomes and service costs.

National Survey

The previous national survey of supported housing comprised a postal survey to gain a “stock take” of supported housing provision, a general description of the users of these services and the kinds of support provided [18]. We will build on this preliminary work by carrying out 1) a more detailed survey of a nationally representative sample of supported accommodation services in England and the current users of these services, and 2) a prospective study to investigate 30 month outcomes for users of these services.

Method

The sampling process adopted in the previous national survey ensured representation from 12 geographic areas with a full range of socioeconomic deprivation [38]. We will adopt a similar approach to sampling. One of our co-applicants (JE) is the policy lead for the National Housing Federation and will provide a list of eligible services within the sampled regions. The previous survey identified 481 services in 12 regions and randomly sampled 250 to participate, of whom 153 responded. Three main types of supported accommodation were identified; 57 nursing/residential care homes, 61 supported housing services and 33 floating outreach services. Five adult placements were also identified. However, since these are small in number and usually offer support to an individual service user in a family home, we will not include adult placements in our study. We will randomly select 90 services (30 of each of the three types) and invite them to participate in a face to face structured interview about their service. Where managers fail to respond or decline, we will recruit a service of the same type from the same region. We will collect data using face to face interviews since the development work on the web based version of the adapted QuIRC will not be completed in time for WP2. Some additional contextual data that may influence service user outcomes will also be collected (e.g. the availability of local rehabilitation services, the support that the service receives from local mental health services, the availability of accommodation for service users to move on to). We will also ask how many users of each service are local and how many have been placed there as “out of area” placements.

The QuIRC provides both descriptive data and quality ratings on the seven domains of care (see WP1). Examples of the data gathered include: the number of people that the service provides for; staffing; provision of staff supervision; the number of staff disciplinarys and staff turnover in the last 12 months; average length of stay; treatments and interventions available; service users’ access to advocacy and legal advice; the proportion of service users who have moved on in the last 12 months; and various markers of socially inclusive practice

e.g. links with community organisations such as day centres, colleges, employment agencies, sport and leisure facilities and the involvement of family in service users' care.

Information about the service's budget will be gathered for the health economic analysis in order to estimate the annual expenditure for each service, taking account of capital, administrative and other overheads. We will also ask whether professionals from other agencies (e.g. NHS Trusts) make regular visits to the service and if so how often. The total service cost including and excluding costs to outside agencies will be divided by relevant activity indicators including number of beds, number of occupied beds, and number of residents per year.

To complement these service data, we will recruit five service users from each service (150 from each type, 450 in all) to participate in a face to face structured interview to gather detailed data on their characteristics and experiences of care. Service managers will provide anonymised lists of their current service users. Stratified random sampling will be used to ensure similar numbers from each type of service and from individual services. Staff will approach these service users and ask them if they would like to meet the researcher to hear more about the study. For those who agree, the researcher will explain the purpose of the study and gain informed consent. Participants who lack capacity to participate will not be eligible for recruitment. If a service user declines or lacks capacity another will be randomly selected. Through structured face to face interview, descriptive data will be gathered on their sociodemographic characteristics (gender, age, ethnicity, marital status, education and employment history) and clinical history (diagnosis, length of contact with mental health services, number and lengths of previous hospitalisations and whether these were voluntary or involuntary). With their consent, these data will be corroborated from the case records and information about their previous and current risks will also be gathered (risk to self or others, risk of vulnerability to exploitation). Standardised measures will be used to assess their quality of life (Manchester Short Assessment of Quality of Life [39]), their views on the therapeutic culture of the service (General Milieu Index [40]), their views on the treatment (the adapted CAT) and the degree of autonomy they have to make decisions (Resident Choice Scale - RCS [41]). These instruments have been used in other studies of people with complex mental health needs and have been chosen as they are acceptable and relatively brief. Together they take no more than 30 minutes to complete through a face to face interview. Participants will also be asked to consent for the researcher to contact staff about their progress 30 months later. Participants will be paid £20 for their time.

Staff will complete standardised assessments of service users' challenging behaviours (Special Problems Rating Scale, SPRS [42]), needs (Camberwell Assessment of Needs Short Assessment Scale, CANSAS [43]), use of substances (Clinician Alcohol and Drugs Scale, CADS [44]) and social functioning (Life Skills Profile, LSP [45]). Staff will also complete an adapted version of the Client Service Receipt Inventory (CSRI) [46] for each service user to collect details of their service use for the health economic analysis. This will include use of services during the past month (in the unit and externally). Inpatient use will be measured for the previous year or since the participant entered the service if less than one year ago. These staff rated instruments have previously been used in studies of people with longer term mental health problems and have been chosen to minimise the burden on staff time. Together they take no more than 30 minutes.

We will have two full time researchers collecting these data over a 12 month period. This is feasible based on recruitment of one service and five service users per week. Preparatory

work (initial contact with services, R&D approvals etc) will be completed prior to this 12 month period.

Data Management

Data will be entered onto a purpose designed database by the researchers. Data management will be according to the Barts and the London Pragmatic Clinical Trials Unit (PCTU) Standard Operating Procedures. Data checking and cleaning will be carried out by the junior statistician in conjunction with the researchers. Cleaned data will be transferred to Stata statistical software for analysis at PCTU. All paper data will be stored in locked filing cabinets and electronic data will be password protected. Once analysis is complete all superfluous paper data will be shredded and appropriate data will be stored in Barts and The London archives for 20 years.

Data Analysis

Differences between services, including the adapted QuIRC domain scores, service user characteristics and ratings of standardised assessments will be investigated using simple descriptive statistics and regression analyses. Multilevel regression will investigate the association between service factors (adapted QuIRC domain ratings and contextual factors) and service user factors (sociodemographic characteristics, clinical history, social functioning, needs, substance misuse and challenging behaviours) with service user ratings of quality of life, autonomy and therapeutic milieu. We will use the convention that in any regression analysis at least 10-20 participants for each predictor should be entered into the model. Thus on conservative estimates, a sample of 450 will allow us to examine 22 predictors.

Health Economic Analysis

We will use two approaches to costing care. A 'top-down' approach will involve dividing the annual costs of the services by a relevant unit of activity. However, as this will not reflect the varying levels of resources used by residents (other than the impact of length of stay), the CSRI [46] data will be used to provide 'bottom-up' costs. Service use costs will be combined with appropriate unit costs. Costs of contacts with external services will be taken from nationally applicable sources [47,48]. For internal contacts we will derive unit costs from the expenditure data provided by managers. Costs will vary across the sample and predictors of these costs will be identified using multi-level regression models. Variables reflecting clinical and demographic characteristics will be included in the models.

Cost-effectiveness analyses rely on comparisons between different service models/interventions. The costs of nursing/residential care, supported housing, and floating outreach will be compared and combined with data on service user ratings of quality of life, autonomy and therapeutic milieu and the adapted QuIRC domain ratings. If these ratings are better for one model of care than another and costs are higher we will then calculate incremental cost-effectiveness ratios. We will also compare each model against the others individually (three comparisons) using cost-effectiveness planes constructed using bootstrapped re-samples from the data. This will help to address the uncertainty around the point estimates of cost and outcome differences. It is likely that the service user characteristics will differ between the three models and the impact that such differences have on cost-effectiveness will be explored using the net benefit approach. Net benefits are defined as the monetary value of outcome minus cost and thus this can be calculated for each participant allowing for multivariate analyses. Account will be taken of service user

characteristics that suggest more complex mental health problems (e.g. diagnosis, length of contact with services social functioning, needs, challenging behaviours and use of substances).

Outputs

- i) First detailed description of supported accommodation services in England including costs and quality.
- ii) Identification of the types of service, costs, aspects of care and service user characteristics associated with autonomy, social functioning and quality of life.
- iii) Comparison of cost-effectiveness of different service types.

Prospective Cohort Study

We will carry out a prospective study to A) benchmark the most important clinical outcome from the three types of supported accommodation, namely the proportion who move on successfully (progress to more independent accommodation without placement breakdown or readmission to hospital) and B) investigate service and service user characteristics associated with this outcome.

Method

We will gather outcome data 30 months after participants were recruited into the national survey described above. We will record from staff/case notes whether each person has move on successfully. For service users still residing at the original service, this outcome will be easily collected from the supported accommodation service staff. For those who have moved on, the researchers will need to identify and contact a key staff member (such as the care co-ordinator) who will have information about the individual's progress since leaving the supported accommodation service. Our aim is to collect follow-up data by telephone interview with key staff but we have included travel and subsistence costs in cases where the researcher needs to visit a service to collect these data from notes. We estimate this will be necessary in no more than a third of cases

Sample size

To estimate the proportion moving on successfully to within 5%, assuming a conservative intra-service correlation coefficient of 0.1 and a mean cluster size of 5, requires 150 service users from each type of service. We plan to collect data on this one outcome on five service users of 90 services (30 of each of the three types), that is, from a total of 450 individuals.

For the analysis considering predictors of outcome we will have service data on all 90 services and thus can explore the relationship between service characteristics and outcome for all 450 individuals sampled. We will aim to collect detailed data from all 450 service users at recruitment to investigate variation between the three service types and across sub-groups of service users but we will endeavour to have a minimum, complete data set (including gender, age, length of history, history of risk) on all service users.

Data Management and Analysis

The same approach to data management as described above will be taken. Service type and service user characteristics will be modelled statistically to identify factors associated with higher proportions of positive outcome (successful move-on). If necessary, we will employ a data reduction strategy, based on the prevalence of factors and correlations between them, to eliminate those which are rare and therefore unlikely to have any prognostic effect and those that are highly correlated where choices will have to be made between factors or they will

need to be combined. Multivariate logistic regression models will be fitted to ascertain the effect of the remaining factors on successful move on.

Health Economic Analysis

The impact of receiving different care inputs on successful move-on will be assessed. Given that we will be obtaining data from staff and/or case notes a simple approach will be required and we will thus record the length of time in hospital during the period prior to a successful move-on or end of the study period, the length of time in the accommodation, and whether specialist community teams were involved in the participant's care. These variables will be included in the regression model described above.

Outputs

- i) Evaluation of the clinical and cost-effectiveness of different service types.
- ii) Identification of service user characteristics associated with successful move-on.

Timeframe

Month 3-12: R&D approvals, initial contact with potential participating sites

Month 13-24: recruit and collect data from 90 services and 450 service users

Month 24-30: write-up results of national survey

Month 45-54: collect 30 month follow-up data

Month 54-60: write up results of prospective study

Workpackage 3: Qualitative investigation of the content of care in supported housing

Objective

To explore staff and service users' perspectives on the purpose and approach in supported accommodation services.

There is a lack of robust qualitative research on the accommodation needs and experiences of mental health service users which can be used to inform policy and practice. For example, while service users' housing preferences tend to be regarded as immutable, it is more likely that they are affected by a range of factors and events that may alter over time. Similarly, individual accommodation placements by provider organisations may be a pragmatic response to various pressures and/or more determined by availability than clinical appropriateness. The determining factors and the difficulties arising from this type of allocation have not been studied in detail. Thus a more nuanced, qualitative approach will address this gap and complement the findings of WP2.

Method

A purposive sample of 30 service users, recruited proportionately from each of the three different types of service studied in WP2 (residential care, supported housing, floating outreach) will be selected to represent a range of gender, age, diagnosis and length of stay from across the 12 areas sampled in WP2. They will be invited to participate in in-depth qualitative interviews. A topic guide will be developed by members of the project management group and service user reference group. We will explore the service users' experiences of, and preferences for, different types of supported housing, their views on the specific support they receive including aspects of care that they find helpful and unhelpful, any barriers to gaining more independence and move-on including their attitude towards this. The interview will start with a brief biographical exploration of social background and

psychiatric context, proceeding through their accommodation history. We will ask participants to provide specific examples from their own experience to illustrate significant events or critical issues that may have a bearing on successful or problematic placements. Issues of social isolation and exclusion will be included. Additionally, we will explore their willingness to participate in a randomised trial to compare different models of support. Thus, we will seek to obtain a comprehensive understanding of factors that may deter or enhance recruitment to such a trial.

A purposively selected sample of 30 staff (10 from each type of service, selected to represent different disciplines and seniority) will be invited to participate in similar semi-structured interviews about their views on the most effective components of care in supported accommodation and different models of support. Participants will also be asked their views on appropriate measures of outcome in studies of supported accommodation. Although assisted by a topic-guide, we intend that the interview will be sufficiently flexible and responsive to issues emerging from respondents' accounts.

Analysis

Interviews will be independently transcribed and anonymised. The text data will be entered into a software package (Atlas-ti) to assist management and coding. A coding frame will be developed by one of the researchers with supervision from SP and GL. The main topics included in the interview prompts will be used as the basis for the coding frame which will then be expanded and modified to include further codes as new themes and sub-themes emerge in the course of interviews and analysis. A detailed and comprehensive analysis strategy will be agreed at the early stages of data collection. However, it is not our intention to produce overly interpretative accounts of the experiences of service users and staff, rather to systematically elicit and detail what works and what doesn't (and why) in housing placements. We will be interested in chronologies and critical events and the comparative perspectives between groups with regard to need and support.

A sample of service user and staff transcripts will be randomly selected and re-coded by a second researcher to assess the validity and correlation of coding. Agreement will be considered to have occurred if both coders used the same code(s) for a paragraph of text.

Analysis will be informed by the principles and guidelines for quality in qualitative research [51]. A full report detailing the coding and thematic development, alongside a comprehensive list of quotations and exemplars, will be made available.

Outputs

In-depth understanding of service user and staff views on:

- i) aspects of care considered most beneficial in promoting independent living skills;
- ii) challenges to providing effective support;
- iii) the most appropriate measures of outcome in studies of supported accommodation.

Timeframe (concurrent with WP2)

Month 13-18: Qualitative interviews with 30 service users and 30 staff, contemporaneous transcription and coding

Month 19-24: Data analysis and write-up

Workpackage 4: Pilot trial of two models of supported accommodation

Objective

To test the feasibility of a randomised evaluation of two supported accommodation models.

Method

We will assess the feasibility, sample size and outcomes for a large scale trial to compare the clinical and cost-effectiveness of two commonly used models of mental health supported accommodation; supported housing and floating outreach. We will include services providing these types of support in three sites where the lead applicant and co-applicants have good links.

Inclusion/Exclusion Criteria

All service users in the three study sites referred to either supported housing or floating outreach services will be eligible for inclusion. Those unable to give informed consent will be ineligible. Given these services provide for users who are considered able to manage in such settings, it is unlikely that many will lack capacity to give consent.

Allocation of Participants

Based on the previous national survey data and our local knowledge, we estimate there are at least three supported housing and three floating outreach services in each of the three study sites offering support to an average 20 service users each (120 service users per site). We estimate an average five service users will move on each year from each service leaving vacancies for 30 new referrals per year per site. We aim to randomise 50 clients across sites and have allowed 15 months for recruitment. A major aim of the pilot trial is to establish whether randomisation to different types of supported accommodation is possible, including its acceptability to service users, clinicians and service providers and its feasibility given the complex logistics involved. A relevant comparison here is with the "Individual, Place and Support" model of supported employment. Though considered too logistically challenging for evaluation through randomised controlled trials originally, such trials have now been carried out successfully [52-54]. Similar challenges may apply here. Service users do not necessarily have much control over the type of supported accommodation they are referred to. Clinicians and providers tend to steer the process and may be anxious about a service user's suitability for one of the two types of supported accommodation we propose to compare. We will need to engage with key individuals in each region to agree acceptable protocols. Where there is agreement for a participant to be randomised and they have given their informed consent, they will be randomly allocated on an equal basis to either the supported housing service or the floating outreach service. Randomisation will be conducted independently of the research team by a statistician from the PCTU. Randomisation will be stratified by site to ensure equal numbers of participants are allocated to both types of service within and across sites.

Comparison of Services

The supported housing services provide a constant level of staffing on-site to a number of service users living in individual or shared flats with the expectation of move-on within two years (the "Train and Place" approach). The floating outreach services provide support of flexible intensity to service users living in an independent tenancy which is time-unlimited (the "Place and Train" approach). The previous national survey found that staff made contact with users on average six days a week in supported housing and four days a week in floating outreach services. The programme management group, the panel of experts described in WP1 and the service user reference group will agree on specific aspects of care associated with better outcomes from the results of WP2 and WP3. We will encourage the services to incorporate these into their work through staff training sessions (facilitated by HK, SP, GS

and GL). Delivery of these components of care will be assessed independently half way through the pilot trial using a standard proforma and adapted QuIRC domain ratings. All other aspects of care will be delivered according to usual practice.

Outcome Assessments

We will record the number of referrals to the trial, the number recruited, attrition (i.e. the number who withdraw consent to continue with the research, decline to move to the allocated service, or cannot be located at follow-up), and the time from recruitment to moving into either type of supported accommodation. Data on these areas of uncertainty will inform the feasibility of a larger scale trial including the rate recruitment could take place. We will ask service users who do not wish to be randomised (and clinicians who do not agree for their service users to participate) their reasons for this. We will invite them to participate in a naturalistic follow-up to determine their outcomes over time.

Before randomisation we will collect data on participants' age, gender, ethnic group, diagnosis and length of contact with mental health services from staff and case notes. We will assess their social function using the staff rated Life Skills Profile [45] and predictors of outcome identified in WP2 using the same standardised measures. We will consider stratifying our randomisation on the basis of these. Costs of care will be assessed using the CSRI [46].

We will assess outcomes suggested in WP3 12 months after randomisation through face to face interviews with staff and participants and case note review. Outcomes are not known at this stage but may include e.g. service costs, any loss of placement, moves to other accommodation, hospital admissions, satisfaction with services, quality of life, markers of recovery and social inclusion (e.g. autonomy, social functioning, family contact, participation in work, education or leisure in mainstream and sheltered settings) and any episodes of risk to self or others (including exploitation).

Adaptation to independent living and integration into wider society is complex for people with serious mental health problems. Choosing one primary outcome for a large scale trial does not reflect the real world of recovery where there are multiple social and psychological outcomes to consider, and it ignores the probable correlation between different outcomes and their predictors [55]. Therefore we shall use this opportunity to explore analysis of more than one key outcome in a single multivariate statistical model whilst preserving the distinctness of the outcomes. We already have experience of such analysis in a randomised trial involving people with intellectual disability [56]. We expect to consider at most three outcomes for joint analysis. Given the small sample size, this analysis will be exploratory.

Qualitative Evaluation

We will carry out in-depth qualitative interviews with 10 participants and 10 staff (five each from each type of service) to assess their experiences of the trial including the process of randomisation, the delivery of the specific aspects of care identified in WP2 and WP3 and their views on the usefulness and feasibility of a larger scale trial. In a similar way to WP3 we will record, transcribe and analyse data to identify common themes that will inform the feasibility of a larger trial.

Data Management

The same approach to data management will be taken as detailed in WP2.

Given that the researchers will need to visit the services to collect baseline and follow-up data it will not be possible for them to remain masked to participant allocation. However, many of our likely outcomes are objective and independent of potential rater bias.

It is unlikely that we shall lose many service users to follow-up due to the high support they receive from services. However, we will ensure that some outcomes chosen are assessable from case notes and staff rated measures so that if a service user is not contactable we will be able to gather some outcome data. We will seek consent for this at recruitment.

Analysis

We shall follow CONSORT guidelines for the analysis of randomised trials for the presentation of our results. However, our analysis will be mainly descriptive and will focus on the recruitment rate, acceptability of randomisation to participants and staff, ease of collection of data, characteristics of participants, other baseline and outcome variables, loss to follow-up and any adverse events. We shall provide a descriptive analysis of our principal outcomes and assess the potential for combining them in one multivariate analysis in a main trial. Although we do not expect any statistically significant difference in our outcomes, the confidence intervals of our estimates will assist in calculating power and sample size for a full trial.

Cost Effectiveness

Service use in the period before follow-up will be measured using the CSRI [46] and combined with unit costs. The service costs will be derived from expenditure data. Cost-effectiveness of the two types of service will be assessed by combining service costs with the composite outcomes described above. We will also use the SF12 [57] and EQ5D [58] to derive QALYs. The use of both is appropriate because there are concerns about using the EQ5D in this population [59]. The relationship between EQ5D and SF12 (via the SF6D) QALYs and the other outcome measures will be examined. Uncertainty around the cost-effectiveness estimate will be assessed using planes and cost-effectiveness acceptability curves and will depend ultimately on which primary outcome(s) is chosen.

Outputs

Assessment of feasibility, required sample size and appropriate outcomes for a large scale randomised trial of two supported accommodation models.

Timeframe

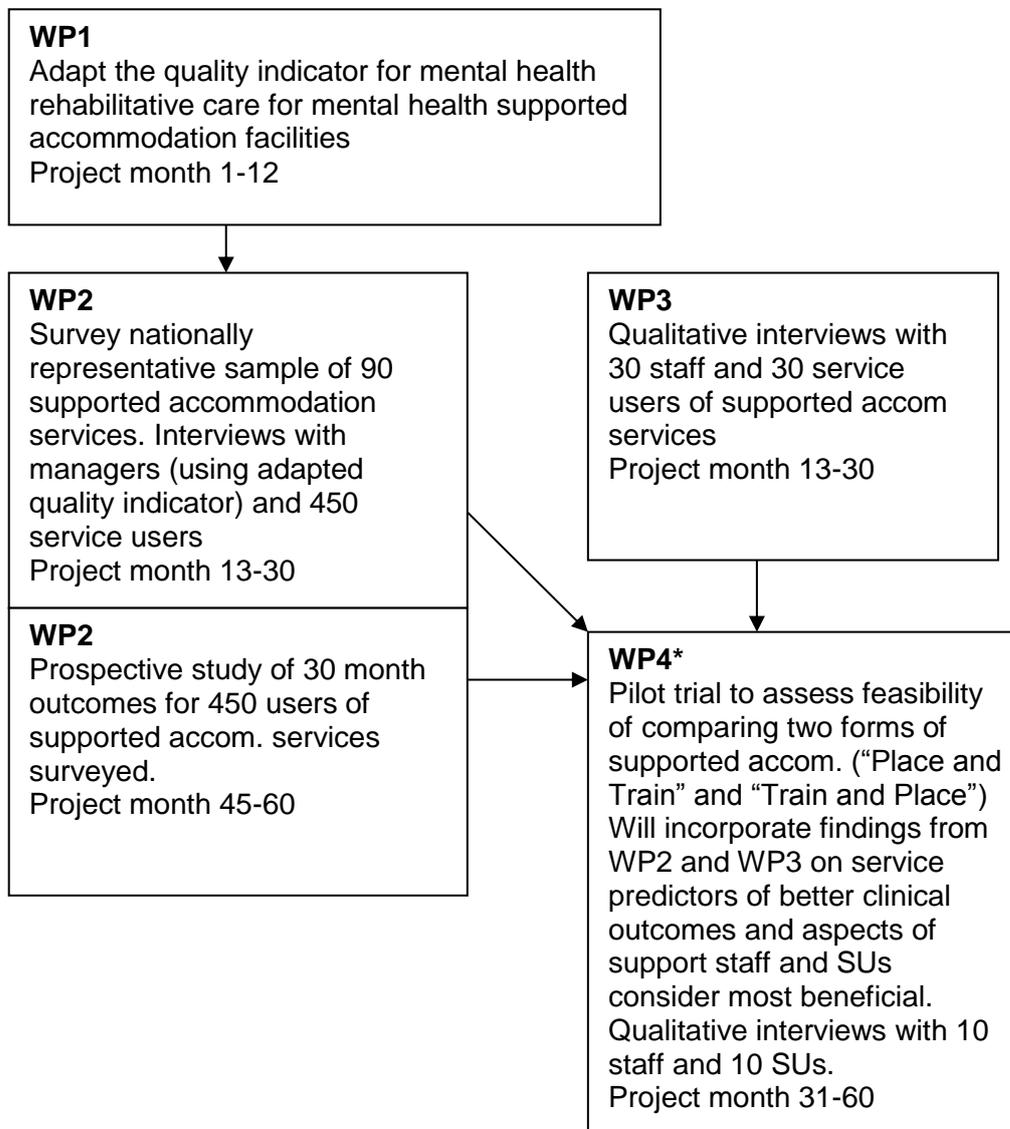
Month 31-44: Recruitment and baseline data collection

Month 31-40: Qualitative interviews with staff and service users

Month 41-54: Follow-up data gathered 12 months after randomisation

Month 55-60: Data cleaning, analysis and write-up

Flow chart to illustrate relationship between Workpackages in Quality and Effectiveness of Supported Tenancies for people with mental health problems (QEST) research programme (RP-PG-0610-10097)



*Separate REC application to be submitted for workpackage 4.

Expected Outcomes of the Study

This project is the first programme of research into mental health supported accommodation. It will deliver a number of concrete outputs that will be of direct relevance to service users and provide evidence relevant to commissioners of these services to guide their investment in models of support that are most beneficial and most cost-effective. The findings will also be of interest to providers of these services especially given the increasing emphasis on mixed economies of provision within a competitive market.

- 1) WP1 will deliver the first valid and reliable quality indicator for mental health supported accommodation services. The development of the web based version in WP1 will ensure that it is easily accessible for service managers to

use and the results are easily interpreted by them. Our experience from the DEMoBinc project (that developed the original tool that will be adapted in WP1) is that regulatory authorities such as the Care Quality Commission will find the tool helpful for benchmarking and monitoring quality of service provision nationally in relation to registration. This will ensure its ongoing usefulness beyond the end of this programme of research.

- 2) WP2 will deliver the first detailed survey of mental health supported accommodation in England, providing comprehensive data on the quality of care provided and descriptive data on staffing and interventions delivered. It will also provide the first detailed survey of service users' experiences of care in these facilities. The prospective study in WP2 will provide the first robust data on the clinical effectiveness of supported accommodation. The health economic components in WP2 will provide evidence about the cost-effectiveness of different types of supported accommodation. Clearly the findings from WP2 will be of direct relevance to patients, service providers and commissioners
- 3) WP3 will provide in-depth qualitative data to complement the findings in WP2, allowing a finer grained understanding of the kinds of support that service users and staff find most helpful in promoting skills for more independent living, and the barriers to providing it. The findings from WP2 and WP3 will identify the kinds of support that are most helpful and for whom. These aspects of care will be included in the two approaches to supported housing that we will compare in WP4.
- 4) The findings from WP4 will inform the feasibility of carrying out a larger trial to compare clinical and cost-effectiveness of two supported accommodation models. Provision of one of these ("Train and Place") is more expensive than the other ("Place and Train") and there is some evidence that the "Place and Train" approach is more popular with service users. The results of a larger trial would therefore be of importance to commissioners, users and service providers. Such a trial could be carried out within five years of the completion of this programme of research.

Dissemination of Results and Publication Policy

The research team regards dissemination as a fundamental task for the full delivery of the programme's aims. A project website will be set up in conjunction with all partners and with the support of the IT services at UCL. The website will be regularly updated by the project manager as the programme progresses to provide a description of the project aims, methods and outputs that will be available to the public and any interested parties.

A biannual newsletter will be prepared by the project manager and sent to all participating services and other relevant organisations throughout the programme.

The findings of each Workpackage will be prepared for presentation at scientific and non-scientific national and local seminars, meetings and conferences. The findings will also be prepared for publication in high impact scientific journals in the mental health field (e.g.

Psychological Medicine, British Journal of Psychiatry, BMC Psychiatry) to maximise their dissemination nationally and internationally. Wherever possible, we will aim to publish in open access journals to ensure the findings are accessible to all those who may be interested, including service users. We have included appropriate costs for this.

At the end of WP2 and WP3 we will co-host an invited seminar with the National Housing Federation to ensure that the findings are disseminated to the organisations that provide mental health supported accommodation services and to discuss the implementation of the adapted quality indicator into routine quality assessment processes. Costs for this seminar have also been included in the study budget. We will also discuss the implementation of the quality indicator into routine quality assessment with the Care Quality Commission (CQC). The mental health lead for the CQC has agreed to join our “expert panel” in WP1 and was on our international expert panel during the DEMoBinc study (through which we developed the original quality indicator). She is therefore well placed to advise on adaptation of the quality indicator for supported housing and its implementation into existing systems for quality assessment.

Ethics

We shall comply with legislation and guidance that regulate good ethical practice for research as detailed in the DH’s Research Governance Framework for Health and Social Care. We will apply to the National Research Ethics Service for approval of the research programme. We will register the study with the R & D Departments of all participating Trusts in line with their local procedures. The Data Protection Act (1998) is legally binding and ensures the privacy and protection of personal information and data collected for research purposes. Good practice includes the anonymisation of personal information by the use of Personal Identification Numbers, password protection of databases and PCs on which databases are stored, and locked storage units for hard (paper) data storage. We will comply with these procedures throughout our research programme.

All WPs will only include participants who have capacity to give informed consent to take part. We do not consider that this is likely to cause significant non-response bias as the numbers without capacity are likely to be very small. We have minimised the amount of data required from service user interviews since we are aware of the stress that this may cause for this service user group. Participants will be reimbursed for their time in accordance with usual practice and rates in research in this field.

In WP4 we will test the feasibility of randomising service users to two different kinds of supported accommodation. We are likely to face logistic obstacles and some resistance, particularly from clinicians. However, at present decisions about individuals’ supported housing needs are made without recourse to any evidence on the clinical effectiveness of the different models in operation. WP4 will inform whether trials in this area are possible.

Patient and Public Involvement

We propose strong PPI throughout this research programme. This includes having a lead for PPI (GL), having service user members of the programme management group, consulting with a service user reference group throughout the programme, consulting with the North London Service User Research Forum (SURF) regularly and engagement through the

National Housing Federation (NHF) with users and providers of mental health supported housing.

The service user reference group will provide an independent view on aspects of the research that are of particular relevance to users of supported housing services. These include the adaptation of the quality indicator and PROM in WP1, the development of the topic guides in WP3 and WP4, the interpretation of the study findings and dissemination plans. We propose to recruit a maximum of six service users, ideally with experience of the three types of supported accommodation under study, through advertising to established service user groups such as the North London MHRN hub service user group (which covers two of the study sites proposed in WP4) and service user organisations affiliated with the NHF. A maximum of 10 meetings will be held over the five years of the programme, facilitated by GL who will feedback views to the programme management group.

MA is a co-applicant on this proposal and assisted in writing the lay summary. He has extensive experience of service user representation in clinical and research settings. He is the Chair of his local service user organisation in South Westminster. He is a service user representative on the Executive Committee of the Rehabilitation and Social Faculty of the Royal College of Psychiatrists. He is a member of the SURF, and a member of the Steering Committee for the NIHR funded Rehabilitation Effectiveness for Activities for Life project, the Trial Steering Committee for the “MATISSE” study and the International Expert Panel on the DEMoBinc study.

The research team has already consulted with the SURF about this proposal. The SURF was co-founded in 2007 by HK, MK and Scott Stevens (service user) to provide meaningful consultation on research. It has 12 members with serious mental health problems. Since 2007 it has consulted on over 30 projects and SURF members have been invited to join steering groups on many of these. The SURF was supportive of the proposal and many members have experience of living in supported housing. We will consult with SURF on three further occasions during the programme of research.

JE is Policy Lead at the NHF. He will liaise with housing providers to identify a second service user representative to join the programme management group and potential members of the service user reference group. Through his extensive knowledge of the supported housing system he will be a vital contact in ensuring engagement in the project from housing providers. The NHF will also co-host a seminar to disseminate findings to providers (see Section 18).

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