

Northern Care Alliance

An Economic Assessment to evaluate the
Bradford telemedicine service provided by
the Metabolic Medicine team at Salford
Royal Hospital

Telemedicine Clinic

Introduction

This Economic Assessment aims to review the telemedicine clinic that is provided as part of the metabolic medicine service at Salford Royal Foundation Trust (SRFT). The reader should treat this

Service design

The main service is provided at Salford Royal Hospital, this is a consultant led out-patient clinic with MDT input from dietitians, nurse specialists, physiotherapist, pharmacist and research practitioners as deemed appropriate. Due to the high number of metabolic patients living in the Bradford area, an out-reach service has been provided for a number of years; this clinic was attended by an adult consultant from SRFT only and took place in Bradford once a month with the paediatric dietitians and nurses supporting these patients. In 2013 it was decided by commissioners that this service was not economically viable or appropriate anymore and all patients needed to transfer to Salford Royal hospital and attend there for future appointments. This caused issues with the patients and they campaigned for the clinic to be reinstated. It was recognised that the adult metabolic patient cohort in Bradford had very specific clinical needs and travelling during the winter months to Salford was problematic. This combined with travel time (approximately 1-2 hours depending on traffic by car and 2-3 hours by public transport) and the cost of using public transport made attending appointments for some patients difficult (Bleakley et al, 2015). Other options needed to be considered.

In 2014 it was discussed within the metabolic team that one of the challenges facing the service was a limited budget with an increasing population of rare conditions and a service with a large geographic spread. This is a problem in sparsely populated countries across the worldthe worl 1ua72rtri 3.95 Tr

receive care from the metabolic team closer
inefficiencies by reducing

this included 0 1 iredale hospital.

sessments and interventions

or provide routine out-

This was used within a variety of settings

consultation with a healthcare professional using the telephone or online technology can offer a much more convenient way of accessing NHS services (NHS, 2011). It was then discussed how the service would work and

could be provided and with agreement from managers and commissioner this was set up in 2014.

from the governance lead. We

the new clinic, information about the services that would be offered in the telemedicine clinic and were given a choice on whether they wanted to attend an appointment at the local telemedicine clinic or be seen at the specialist unit at Salford Royal hospital. However, if the patient required any investigations (MRI, Bone density, 24 hr tapes, and physical examination) which can't be arranged locally or joint appointments with other specialties the patients had to attend the specialist unit. Patients are screened before being offered a telemedicine appointment, ensuring the telemedicine clinic consultation will meet their specific needs.

Outcomes

The Pathways to Outcome (PtO) model has been completed in order to map out the service (*figure 1*); this model allows the complexities of the service innovation to be presented in a clear and concise way (McMahon & Hoong Sin, 2015). It shows the inputs required both direct and indirect, mainly about the staffing of the service. The outcomes are broken up into different sub heading so that staff, patient and organisational outcomes are listed.

Figure 1

Key costs

The costs have all been provided by the departmental business manager in conjunction with the Trust finance team. Full economic costs are presented and where necessary adjusted to 2018 prices. The set up costs of telemedicine for direct and indirect have been identified (*see appendix 1*). 20% add on costs have been used as this is the figure quoted by the trust. The services that

The running costs of the telemedicine service have been identified based on the year 2018 and the current service that is provided (see *appendix 2*). A summary of the costs for the telemedicine clinic including income from clinic appointments, compared to Bradford clinic with a consultant present, which would result in 2 programmed activities (PA's) are listed below (*figure 2*). The Bradford telehealth service would include a nurse and advanced practitioner attending the clinic with the consultant linked in via video-link, figure 2 compares the costs if the consultant were to physically attend the out-reach clinic in Bradford; this reflects the financial benefits of having the service set up as a telemedicine service. The difference is 0 0 1 405.34 687.-4(i)5()13()-4(an).34 687.-4(i)5()13()

Bradford telehealth: 8 appointments per clinic for – 2 new slots per clinic (£1574) and 6 follow up slots (£2796) - Total: £4370

Difference: £4370 - £2262.12 = **£2107.88**

NB: This does include the potential loss of income avoided by freeing up the Consultant capacity to run an additional clinic in Salford (see Model 2 below).

Model 2: Bradford Consultant attendance

Income - Clinic slots: Bradford telehealth: 6/clinic for – 2 new slots per clinic (£1574) and 4 follow up slots (£1864) - Total: £3438

Difference: £3438 - £3075.71 = **£362.29**

By sending the consultant to physically do the clinic it decreases the amount of clinic appointments that could be done, so there could only be 6 slots per clinic, instead on 8 slots; these cost have been calculated (*see appendix 3*). By the consultant physically attending Bradford the telemedicine equipment license is not needed as the programme won't be used, however the laptop will still be needed to access patient's notes. Also, by the consultant travelling there is the additional cost of their parking and mileage, as well as the fact that due to travel time it will be classed as 2 PA's meaning that 2 clinics are cancelled at SRFT instead of just 1. This could mean a potential loss of income of £2584.

Salford Royal Clinic

Replacement of equipment	£84
Advanced Practitioner	£434.69
Specialist Nurse	£306.61
Administration support	£183.33
Car Park	£16
Mileage AP	£36.90
Mileage Nurse	£36.90
Clinic room/phlebotomy	£200
Total Cost per clinic	£1431.43
Income from clinic tariff	£3728
Net benefit	£2296.57

The tariff for a new patient differs between the consultant carrying out the consultation and the advanced practitioner, whereas the tariffs for follow up appointments are the same; this has been determined by commissioners.

Model 4: Two Telehealth clinics per day / 24 per year

The demand for the Bradford service is increasing with more patients wanting to access the telemedicine service and more patients transferring from the paediatric centre. Therefore, there is another option that could be considered, currently the service is provided in an afternoon, if there was room availability at Bradford to provide a clinic in the morning as well then this would mean that a full day clinic could take place. This could mean increasing to 24 clinics per year but with 2

Car Park	£16
Mileage AP	£36.90
Mileage Nurse	£36.90
Clinic room/phlebotomy	£400
Total Cost	£4250.44
Income from clinic tariff	£8740
Net benefit	£4489.56

This therefore shows that it would be economically viable to carry out a whole day clinic in Bradford, as the team is already there so travel costs and parking has already been paid for; so this would avoid additional costs of travelling to do separate clinics. In addition it takes 2 hours travelling time per person to get to Bradford and back, therefore 2 hours of a nurse time is recouped and 2 hours of the advanced practitioner time. It is not normal practice to carry out 2 clinics in one day, however due to how efficient the clinic can be run the team involved feel that they could manage this clinic. Although this would take up more of the consultant's time doing this clinic, which would mean that other non-clinical duties would need to be relooked at.

Benefits

There are a number of benefits to the patients, the staff and the organisation; some of these benefits can be monetised to show the financial implications of the benefit more easily than others. Qualitative benefits can be evidenced through other routes such as patient satisfaction surveys.

1. **life** – The service will be provided closer to their home, patients will receive the care and support that they require in order to manage their condition. Patients care is the priority and their quality of life is the main reason for this telehealth service. Through SRFT's patient satisfaction survey that took place in May 2017 patients felt that they saved money by having their appointment via telehealth, they had no issues using the technology and they were happy to have a telehealth consultation in the future.
2. **Reduce DNA rates** - Patients who live in Bradford would not need to travel too far to be reviewed by a metabolic consultant. DNA rates are high within the service pa1(i)5can for far to re 9(5T

- 4. Promote patient independence** - Patients become more actively involved in the consultation as the consultant isn't physically in the room. As the venue is closer to their home, they could potentially travel to the appointment independently. By developing patient independence we are supporting them to take more control of their health. Fewer reviews would be needed if the patient is more independent, follow up appointments could be 12 monthly. This is evidenced in the patient satisfaction results from May 2017 where patients stated that they felt confident to take their medication safely following their appointment. By supporting people with learning disabilities to develop their independence with the use of technology benefits to the patient can be seen including reducing costs as they require less support (Fry, 2016).
- 5. Allows flexibility of appointments** - If a patient cancels an appointment at SRFT due to transport issues, they could potentially access the Bradford service. Reasonable adjustments are able to be put in place for learning disability patients; as they are booked at the start of the clinic, so that they attend clinic when it is quieter and can be seen quickly without a delay. This may stop a DNA from happening as reasonable adjustments have been put in place in line with SRFT's reasonable adjustment policy. Each DNA at Salford would mean that there would be a loss of income to the trust of £334. However if these patients were offered an appointment at Bradford instead so that they would be closer to home then this would generate an income of £466.
- 6. Improve clinic capacity** - The appointment time would be shorter allowing for more slots on the clinic and due to the limited number of clinics provided they would be fully utilised. Important to show the clinics are utilised well, this would allow more space in clinic for new referral's that must be booked into clinic within 2-4 weeks of being received. For the Bradford tele-health clinics there are 8 appointments slot, which would generate an income of £2021. There is an increase in demand for the service and this would mean that more slots are required at Bradford, which would create more available slots at Salford.
- 7. Reduce patient complaints** – A high number of complaints were received originally when the Bradford service was closed and this took a lot of the manager's time to investigate. Since the Bradford telehealth service has begun there have no formal complaints from patients regarding the lack of service for Bradford patients.
- 8. Increase in capacity to accept referrals** - As patients who are unable to travel long distances to appointments could access a service closer to home. On average the department receives 18 new referrals per month; if more referrals were able to be accepted then this could generate additional income of at least £787 (ie: one new patient).
- 9. Review patient at appropriate time** – Metabolic patients often become unwell at home and have emergency regimes that they follow; they often require an emergency blood test to check certain blood levels that can only be done in a hospital setting due to the blood sample needing to be taken to the laboratory for processing within half an hour. This could be done in the telemedicine clinic and clinical advice given, which may avoid a hospital admission. Over a 12 month period an audit was carried out within the team from June 2015 to May 2016 and 89 inpatient admissions were recorded, out of these 16 admissions were planned. In Bradford there were 2 planned admissions and 13 unplanned admissions to hospital.
- 10. Improve networking/ visibility** - Closer working relationships with Bradford teams, especially with the specialist nurse and dietitian on site for the clinic.

Telehealth in Practice

Recommendations

Telemedicine service in Bradford to continue

Specialist nurse and dietitian to continue to physically attend Bradford

Patients with learning disabilities to continue to access this service – support of community learning disabilities were involved to support

Based on an increase demand for the service, an all-day clinic once a month could be explored

Advanced practitioner to do Bradford clinic with the telemedicine as an option for accessing consultant support for more complex patients

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Unit costs of health and special care, (

Appendix 1

2018		Set up costs				
£2310.55 +	1	Telehealth equipment	2 laptops, 2 webcams	£2310.55		
		Total: £4070.11				
		2	Human Resources	£600 (inclusive of VAT)	3	
		Virtual Patient Network				
		£31.31 IT development patient resource success				
		Indirect		Identify	Quantify	Monetise
						approval
						2. IMI Support
						3. IT success of IMI network

Appendix 2

Running costs - Telemedicine					2018	
Quantify	Monetise	Total	Direct	Identify	Cost	
1. Telehealth programme	license fee	£1200/year	£100 per clinic	100 + 84 = 184	£184.00	
2. Admin support	Band 3 0.1WTE	£21999.60/year				
3. Travel	Car park costs	£8/person/clinic				
	Mileage – Nurse 82 miles/clinic	£0.45/mile				
	984miles/year	£442.80/year				
4. Admin support	Band 3 0.1WTE	£21999.60/year				
5. Travel	Car park costs	£8/person/clinic				
	Mileage – Nurse 82 miles/clinic	£0.45/mile				
	984miles/year	£442.80/year				
6. IT support	IT support at Bradford	£600/clinic				
	Use of on-site computer					
	Travel to clinic appointment					
	Use of on-site computer					

Appendix 3

Table 5: Identify, quantify and monetise running costs NAME: Briony McNelly Term

	Direct	Identify	Quantify	Monetise	
1. Replacement of equipment	Replacement of equipment	Replacement of equipment	Replacement of equipment	£1000 / 604/clinic	
2. Staffing	Advanced Practitioner Band 9c 0.1WTE	Advanced Practitioner Band 9c 0.1WTE	Advanced Practitioner Band 9c 0.1WTE +20% on costs	£52162.80/annum - £424.60/clinic	
Admin support	Band 3 0.1WTE	Band 3 0.1WTE	Band 3 0.1WTE	£21999.60/annum - £183.33/clinic	
Travel	Car park costs Mileage – Nurse 82 miles/clinic 984miles/year AP – 82miles/clinic 984 miles/year Consultant – 82miles/clinic 984miles/year	Car park costs Mileage – Nurse 82 miles/clinic 984miles/year AP – 82miles/clinic 984 miles/year Consultant – 82miles/clinic 984miles/year	Car park costs Mileage – Nurse 82 miles/clinic 984miles/year AP – 82miles/clinic 984 miles/year Consultant – 82miles/clinic 984miles/year	£8/person/clinic Total: 24 0.45/mile - £442.80/year – £36.90/clinic/per person Total; £110.70	4.
Service Level Agreement	Clinic room	Clinic room	Clinic room	£200/clinic	
	Indirect	Identify	Quantify	Monetise	
	1.	Patient Travel	Travel to clinic appointment		