

Quality and Productivity: Proven Case Study

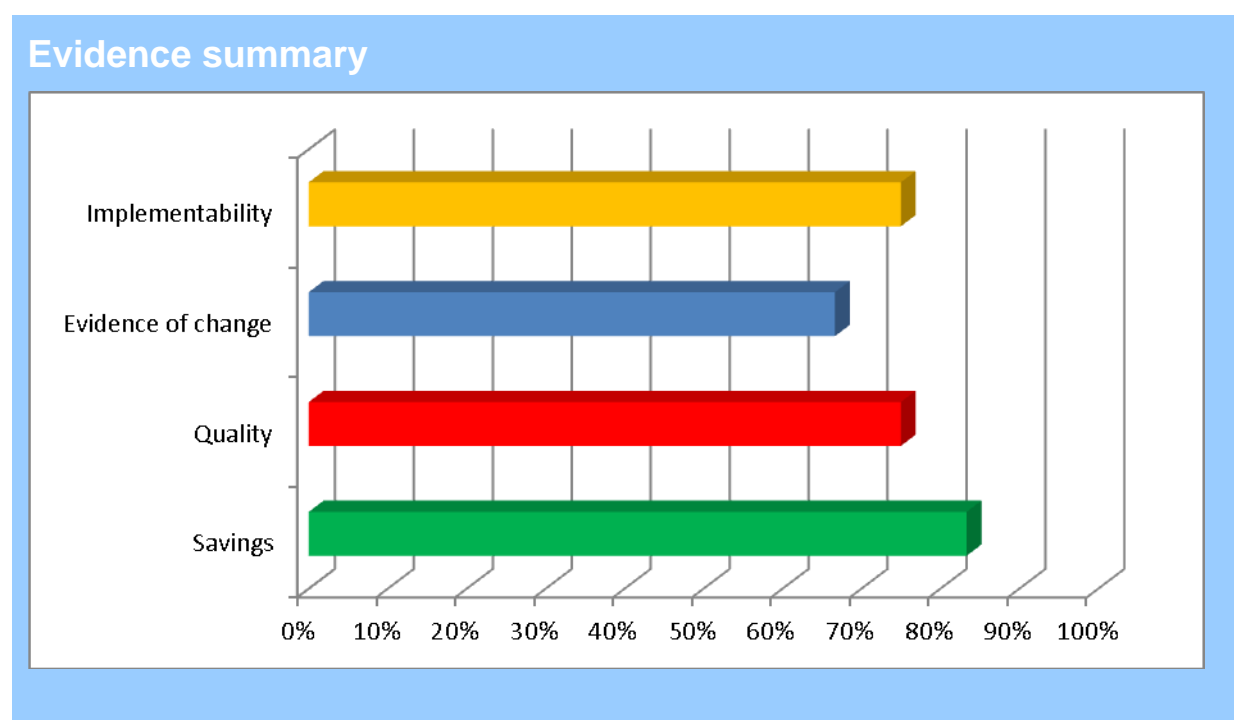
Teledermatology: diagnosis, triage and effective care of dermatology

Provided by: NHS Bristol

Publication type: Quality and productivity example

QIPP Evidence provides users with practical case studies that address the quality and productivity challenge in health and social care. All examples submitted are evaluated by NICE. This evaluation is based on the degree to which the initiative meets the QIPP criteria of savings, quality, evidence and implementability; each criterion is given a score which are then combined to give an overall score. The overall score is used to identify the best examples, which are then shown on NHS Evidence as 'recommended'.

Our assessment of the degree to which this particular case study meets the criteria is represented in the evidence summary graphic below.



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Details of initiative

Purpose	To use teledermatology to help avoid unnecessary referrals and also to improve the quality of care for other patients usually seen in primary care.
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Description (including scope)	<p>A pilot of teledermatology was carried out by 18 GP practices in the South Bristol Consortium (now the South Bristol Locality of Bristol Clinical Commissioning Group). The pilot used Vantage Teledermatology (VTD), a system developed by Vantage to access the clinical opinion of Consultant Dermatologists based at University Hospitals Bristol NHS Foundation Trust (UHB).</p> <p>Tendering the service was undertaken via a formal tendering exercise. A single supplier, volume-based tender was undertaken. The procurement was carried out as a Part B service under the 2006 Public Contracts Regulation. An evaluation panel comprising a clinical advisor (GPSI) and representatives from commissioning, procurement, finance, and IM&T was used to evaluate the bids. Providers were required to answer questions on service aims/ objectives, model of care, clinical governance, staffing, information systems, working relationships, performance reporting, contingency planning and implementation planning. After a preferred provider was selected credit checks were carried out and a contract drawn up with the relevant parties.</p> <p>It would not have been reasonable to run this as an Any Willing Provider service because the logistics of GP practices having multiple teledermatology systems does not work.</p> <p>Once a GP decided to refer a patient through VTD (with the patient's consent), images were taken of the dermatological complaint, and uploaded to VTD along with the relevant clinical information from the patient record. This is then reviewed by a Consultant Dermatologist who return a diagnosis and recommended management plan within 72 hours. The recommendation will either be that the patient is suitable to be managed in a primary care setting or will require a secondary care referral for further examination.</p> <p>This pilot was originally intended to be 12 months long, but the pilot contracts actually ran for 18 months whilst long term commissioning arrangements were sorted. At 9 months (March 2011), a comprehensive evaluation was carried out and the results of this are discussed in this case study. The evaluation found that the service was effective in preventing avoidable attendances in secondary care, delivering financial savings, reducing the time taken for patients to access specialist opinion, and was popular amongst GPs. On the strength of this evaluation, NHS Bristol has subsequently procured a teledermatology service for the whole of Bristol.</p>
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Topic	Planned care, long-term conditions, primary care, right care, safer care, clinical rationalisation, procurement and productive care.
Other information	<p>Almost 25% of the population seek GP advice on a dermatological problem each year, and over 20% of GP appointments involve dermatological issues. A significant proportion are referred to secondary care: around 4 million referrals each year (Schofield et al, 2009). With increased exposure to the sun and the resulting increase in skin cancers, the pressure on GPs and specialist dermatological resources is increasing.</p> <p>Many dermatological conditions can be triaged and/or diagnosed by qualified specialists from good photographic images, and many cases triaged or diagnosed in this way can be managed in the community by GPs, community clinics, minor surgery, especially if they have specialist support. Teledermatology allows specialists quickly to examine and triage cases from photographic images, recommending referrals to secondary care where appropriate but otherwise triaging cases back to the community with a suitable management plan. Teledermatology also improves resource allocation in secondary care. Specialists can triage, diagnose and prepare management plans, as appropriate for several times more patients an hour by using the teledermatology solution than by seeing patients in person.</p> <p>Clinical history from the patient's GP record is included as part of the teledermatology referral. If the dermatologist feels that a patient needs to be seen in clinic for a physical examination they will recommend referral to secondary care. Similarly if the Dermatologist feels that more information or better images are required they will contact the GP requesting this.</p> <p>A further aspect of the system that is sometimes under-appreciated is its educational role. Under traditional methods of working, a GP receives a letter from a consultant some time after the patient has been seen in secondary care, typically several months after the GP saw that patient. It is unlikely that the GP remembers anything about that patient's condition, and certainly not the specific appearance of any condition.</p> <p>With VTD, the GP can see the advice and the visual appearance of the condition as it was when the patient was referred side-by-side. It is possible that continued experience of receiving advice in this way may help GPs to treat and refer patients more appropriately, reducing the need for referrals to secondary care.</p>

Gate 1: Savings delivered/anticipated

Amount of savings delivered/anticipated	During the 9 month pilot period, an estimated net saving from avoidance of referrals of £45,784 was delivered. The assumptions underpinning this are as follows:
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Of the 347 patients referred via teledermatology in the 9 month period, 32% (n=111) were subsequently referred to secondary care, as confirmed by NHS number tracking, with 68% (n=247) managed in a primary care setting. Patient level analysis of dermatology referrals showed an average of 1 new and 1.92 follow-up appointments per patient. It is therefore estimated that each teledermatology referral that does not result in a secondary care referral saves a number of outpatient attendances, delivering gross saving of £63,134.78, which once the cost of teledermatology referral at £50 per referral is taken into account makes a net saving of on referrals of £45,784.78. This does not include savings made from minor surgery.

Separate to this, set up costs of £1000 per practice were also incurred. This cost included the software, 2 digital cameras, a dermatoscope and basic training. These costs are one off; when these are factored in the net saving for the pilot comes to £27,784.

Following the pilot NHS Bristol procured the system for an additional 38 practices in Bristol. The anticipated net saving across a full year in 12/13, the first full year that all practices have the system, is £202,000 or £43,000 per 100,000 population. This is based on the application of the rates seen in the pilot to referrals from all Bristol practices.

Type of saving

Real cash savings to the commissioner are a result of reduction in referrals to secondary care, with a consequent reduction in outpatient follow-ups and Did Not Attends, the avoidance of consultant-to-consultant referrals, a shift of minor surgery to the community from secondary care, and information that enables optimisation of resources.

There are also likely savings from the rationalisation of clinical pathways and the online/paperless nature of the solution.

All 18 practices in the South Bristol Consortium participated in the pilot, which was evaluated at 9 months in March 2011. The pilot contract arrangement was continued whilst a full service was procured and in December 2011, NHS Bristol formally commissioned the service and a further 38 practices implemented between January and April 2012.

Any costs required to achieve the savings

'Out of pocket' start-up costs, comprising the cost of training, software and cameras, amounted to (in the case of the pilot) £1000 per GP practice. Potentially these costs can be rolled into the fee charged per referral so that there is a clear saving on every referral made through the system. There are also training and change management costs associated with training of GPs and practice staff, and the simplification and rationalisation of

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	<p>clinical pathways.</p> <p>The digital camera and the VTD platform may be used for telewoundcare care and telepodiatry. Currently there is a pilot to measure the effectiveness of the system in both these areas.</p>
Programme budget category	Problems of the skin.
Details supporting Gate 1	<p>Savings come in a variety of ways.</p> <ul style="list-style-type: none">• Of the 347 cases referred through VTD in the pilot, 68% were recommended for management in primary care rather than secondary care. The cost of the referral through VTD is much less than the cost of referral to secondary care, and relatively few cases triaged to primary care end up back in secondary care.• Referrals in secondary care are also avoided, yielding further savings, because most cases stay in primary care.• About a third of referrals involve minor surgery that can take place in the community (where appropriate facilities exist), rather than in secondary care, at very much lower cost. The savings from this are not yet quantified.• GPs report educational benefits that over time reduce the need for referrals.• Specialists can handle many more cases and more effectively prioritise their time to those who need specialist care.• The cost and time involved with consultant-to-consultant referrals is eliminated.• The comprehensive reporting facilities available through VTD allow stakeholders at every stage to optimise resources and respond promptly and effectively to improve the system.• There is a major reduction in time and cost to patients who would otherwise have to attend secondary care, and improvements in their experience.

Gate 2: Quality outcomes

Impact on clinical quality	<p>Quality is improved because of the large numbers of patients that can be treated promptly with the right care.</p> <p>GPs report very high levels of satisfaction with the management plans they receive.</p> <p>There is also a high level of agreement between consultants' diagnoses/management plans on referrals and those sent for independent clinical audit by a second consultant dermatologist.</p>
Impact on patient safety	Where secondary care appointments are recommended, routine, urgent and suspect cancer cases are triaged to the appropriate specialist and waiting list. This also helps reduce door-to-needle

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time and unnecessary consultant-to-consultant referrals.

Impact on patient and carer experience

Feedback provided by GPs from the participating practices suggests that patient satisfaction with the service was high. With the majority of reports returned within 48 hours, several patients confirmed to their GP that the service had reduced anxiety about their condition, provided reassurance and offered treatment/intervention in a more timely manner. The convenience of a locally led service that helped avoid a hospital appointment was perceived by other patients as a positive factor. It should be noted that whilst no formal survey directly from patients was completed, no GP reported any significant negative feedback from their patients throughout the pilot.

Supporting evidence

GP's have provided feedback to show:

- 68% of patients (n = 347) referred through the VTD teledermatology pilot are triaged for care in primary care/the community, avoiding secondary care referrals and unnecessary travel and waiting times.
- A specialist diagnosis and management plan for the great majority of patients is available within 48 hours, faster than would otherwise have been the case.
- Primary care clinicians can quickly and easily obtain a second opinion when required.
- Images can be taken to track patient progress and responses to treatment over time.
- The system has been proven to act as a safety net for suspicious lesions, with reporting consultants often identifying melanomas and small-cell carcinomas. In such instances, VTD facilitates the crucial fast tracking of patients to the cancer 2-week waiting list.
- 83% (n = 154) of GP feedback responses indicated that the referring GP was 'very satisfied' or 'extremely satisfied' with the service.
- GPs state that the teledermatology solution is a valuable learning tool, helping them with future diagnoses.

Gate 3: Evidence of effectiveness

Evidence base for initiative

Informed by local experience/opinion based on the Department of Health Operating Framework 2011–12. The Department of Health Operating Framework 2011–12 seeks to encourage 'the use of digital technology in key areas to support delivery of the QIPP agenda, including:

- use of telehealth and telecare to help people stay in their own homes

introduction of digital or online services to deliver greater convenience for patients and to free up face-to-face clinical time

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	for those who really need it' (page 26).
Evidence of deliverable from implementation	During the 9 month pilot period there were 347 referrals through teledermatology.
Where implemented	VTD is widely implemented across and integrated within the NHS. The solution is now used by over 200 practices in Birmingham, Cheshire, Durham, Hampshire, Hillingdon, Lincolnshire, Reading, and Torbay and Devon.
Degree to which the actual benefits matched assumptions	Same as expected.
If initiative has been replicated how frequently/widely has it been replicated	VTD has now been replicated by a further 150+ sites across the UK. The technology is currently used by around 500 GPs.
Supporting evidence for Gate 3	No further information provided.

Gate 4: Details of implementation

Implementation details	<p>Implementation comprises two broad elements:</p> <ul style="list-style-type: none">• Establishing the most effective pathway:<ul style="list-style-type: none">– identifying suitable specialists to perform triage– identifying GP practices to refer dermatology cases, with referral protocol– identification of resources that can be allocated to triage• Installing teledermatology:<ul style="list-style-type: none">– provision and installation of software and photographic equipment by Vantage (in this pilot)– training of staff in GP practices and of specialists. <p>There is a one-off implementation cost per site that includes the imaging equipment (digital camera and dermatoscope), and a half-day onsite training session for clinicians, plus additional visits for further support.</p> <p>The ongoing cost is per referral through the system and includes consultant advice, project management, all updates to the software and IT support.</p> <p>There are no regular fixed costs after implementation, which means that if the system is not used at all no charges are levied.</p> <p>There is a feedback loop from both ends (GPs and consultants) per case. This is invaluable and enables ongoing sharing of ideas</p>
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and lessons learnt. Feedback is also used in the ongoing development of the software and service. Local consultants also offer bi-monthly sessions in the community to review cases and help advise on how to capture the best images of specific conditions. GPs and consultants have continuous access to previous cases via VTD to facilitate this learning process.

Time taken to implement

Implementation was complete within 3 months once the most effective pathway had been identified. Usage built up over time as GPs became more familiar with the system.

Benefits are realised immediately because a saving is made with each referral, and upfront costs are quickly absorbed.

Ease of implementation

Affects hospitals and a number of GP surgeries. In Bristol implementation was relatively easy. There was some difficulty finding convenient slots for GP training. The fact that the project was led by a local clinical commissioning organisation of which the practices were a member meant practices were willing to participate.

Level of support and commitment

Inevitably, some GP practices are more resistant to change than others, but overall levels of satisfaction are high among users.

In Bristol initially there were slight reservations expressed by the local consultants; however, they agreed to participate and now the entire department is fully engaged.

There is a strong emphasis on change management through a dedicated project manager and regular communication with all practices. Educational events in the community, as described above, offer further support.

Barriers to implementation

Obtaining buy-in from all stakeholders is an important part of the process. This makes it important to focus early on change management issues.

Uptake of the service varied from practice to practice during the pilot phase. From the outset, a number of sites engaged with the service and began referring through the system. However, there was a degree of 'pilot mentality' among GPs, some of whom preferred to wait until the trial had been evaluated before fully engaging with the service. It takes time to win the confidence of GPs and the importance of helping clinicians adjust to a new pathway. It also appears that there is a seasonal trend, with greater service usage over the spring and early summer months.

The patient pathway should be structured to minimise unnecessary additional appointments; this requires effective training on VTD use.

Risks

- Quality of care: managed by good real-time information flows and an independent audit of 1 in 10 of the first 1500 referrals
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(carried out on trial site in Hampshire).

- Financial robustness of business case: managed through reporting module and regular financial monitoring.
- Buy-in from all stakeholders: good change management processes and constant monitoring of feedback.

Supporting evidence for Gate 4

No further information provided.

Further evidence

Dependencies

It is important to win the confidence of GPs, commissioners and secondary care providers.

South Bristol Consortium, NHS Bristol and University Hospitals Bristol were receptive to a pilot following the publication of the PwC independent audit of VTD in NHS Hampshire. The following factors are key to successfully winning GP confidence:

- participation of local consultants
 - ongoing management support from the PCT
 - establishment of a project team involving a lead consultant, GPs, PCT manager and provider lead
 - in-house training sessions
 - ongoing support (onsite and remotely via a dedicated helpdesk)
 - online feedback loop between stakeholders
 - access to activity data.
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Contacts and resources

Contacts and resources

If you require any further information please email: contactus@evidence.nhs.uk and we will forward your enquiry and contact details to the provider of this case study. Please quote QIPP reference 11/0038 in your email.

Department of Health Operating Framework 2011–12
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_122736.pdf

Schofield J, Grindlay D, Williams H. Skin conditions in the UK: a health care needs assessment. Nottingham: Centre of Evidence Based Dermatology, University of Nottingham; 2009.
<http://www.nottingham.ac.uk/scs/documents/documentsdivisions/documentsdermatology/hcnaskinconditionsuk2009.pdf>

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