

An inner-city practice's experience of transmitting hyper-resolution pictures of patients' eardrums to ENT consultants for their clinical guidance

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BACKGROUND

The endoscope-i is a diagnostic device designed by two ENT consultant surgeons with engineers which consists of a rigid endoscope tube that can be easily attached to an i-pod, i-phone device for the examination and recording of high resolution diagnostic images from the ear canal and eardrum (endoscope-i.com).¹

Diagnostic and management uncertainty is a particular problem for general practitioners as 'our knowledge is more general than specific, as patients consult the GP in the early and often undifferentiated stages of an illness'.² The use of technology in general practice can potentially change the way we diagnose and manage patients' problems. Specialized assistance from secondary care can reduce primary care physician uncertainty² which in turn can avoid inappropriate investigations and unnecessary referrals to secondary care, and improve patient satisfaction by involving them earlier in the diagnostic and management processes. Other examples of appropriate use of technology in primary care is in the diagnosis of musculoskeletal problems by pocket-sized ultrasound by GPs helped by specialist in secondary care.³

AIM

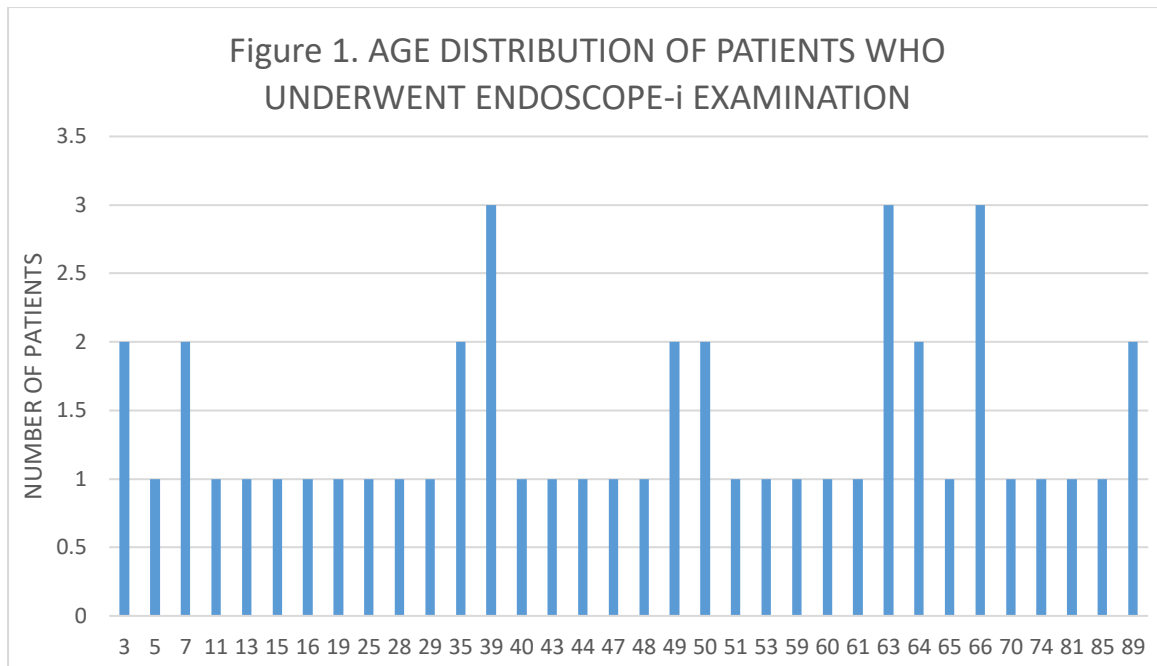
From a practice perspective we hoped for to improve patient satisfaction, provide a high quality and safe service, reduce the referral rate to ENT secondary care.

METHOD

The Higherland surgery, an inner city practice of about 4500 patients piloted endoscope-I for twelve months. Pictures were e-mailed, after obtaining patient's verbal consent for a consultant review via secure nhs.net e-mail account using the patient's NHS number as patient identification. Feedback time from the images sent to consultant averaged between 2 to 6 hours. Patients were contacted either on the same day if the pictures were e-mailed during the morning surgery or the following working day if pictures were sent later on in the day.

RESULTS

A total of 47 patients were identified as being suitable for a remote ENT consultation involving the endoscope-i by GPs in Higherland surgery project. These spanned a wide age range – see Figure 1.



After receiving the 47 consultant reviews of the transmitted images, six (13%) were referred to secondary care ENT service (see Figure 2); 49% were female.

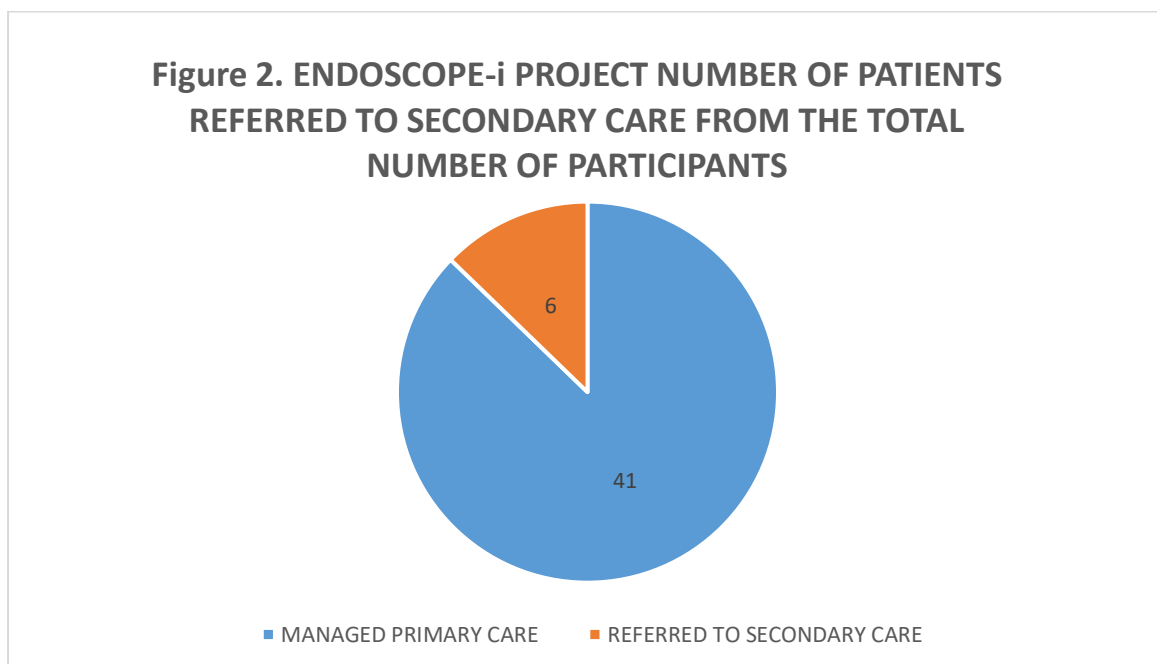


Figure 3 relays the wide range of symptoms and signs relating to ear conditions presented to GP that triggered the endoscope-i examination. Figure 4 describes the final diagnoses.

Figure 3. MAIN SYMPTOMS AT PRESENTATION AS DESCRIBED BY PATIENTS

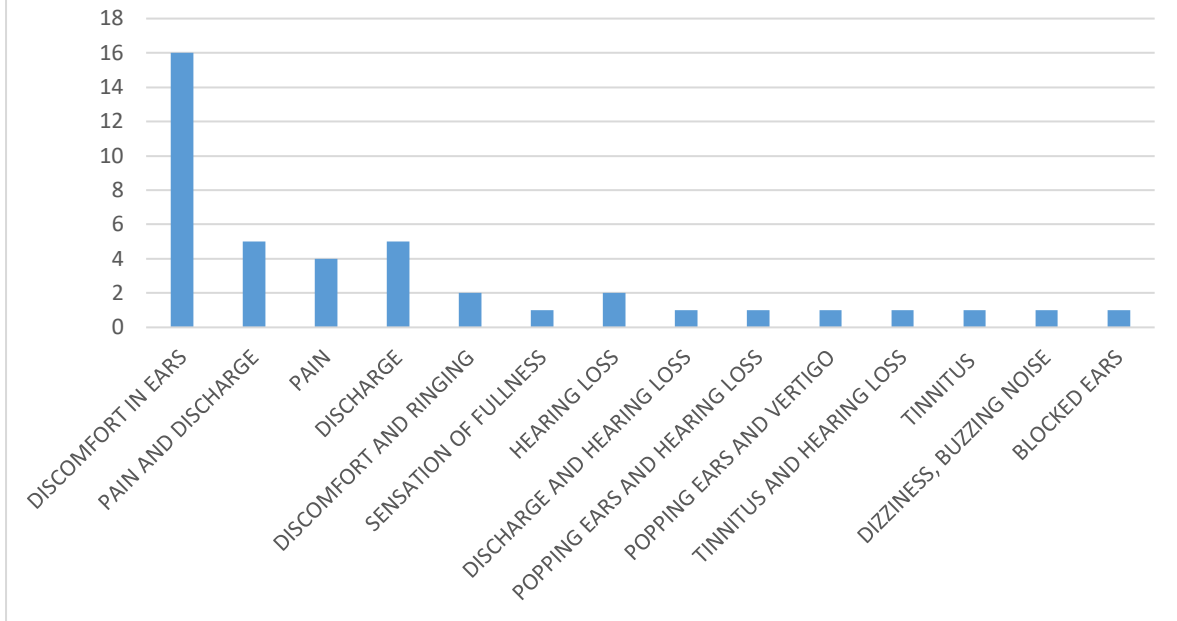
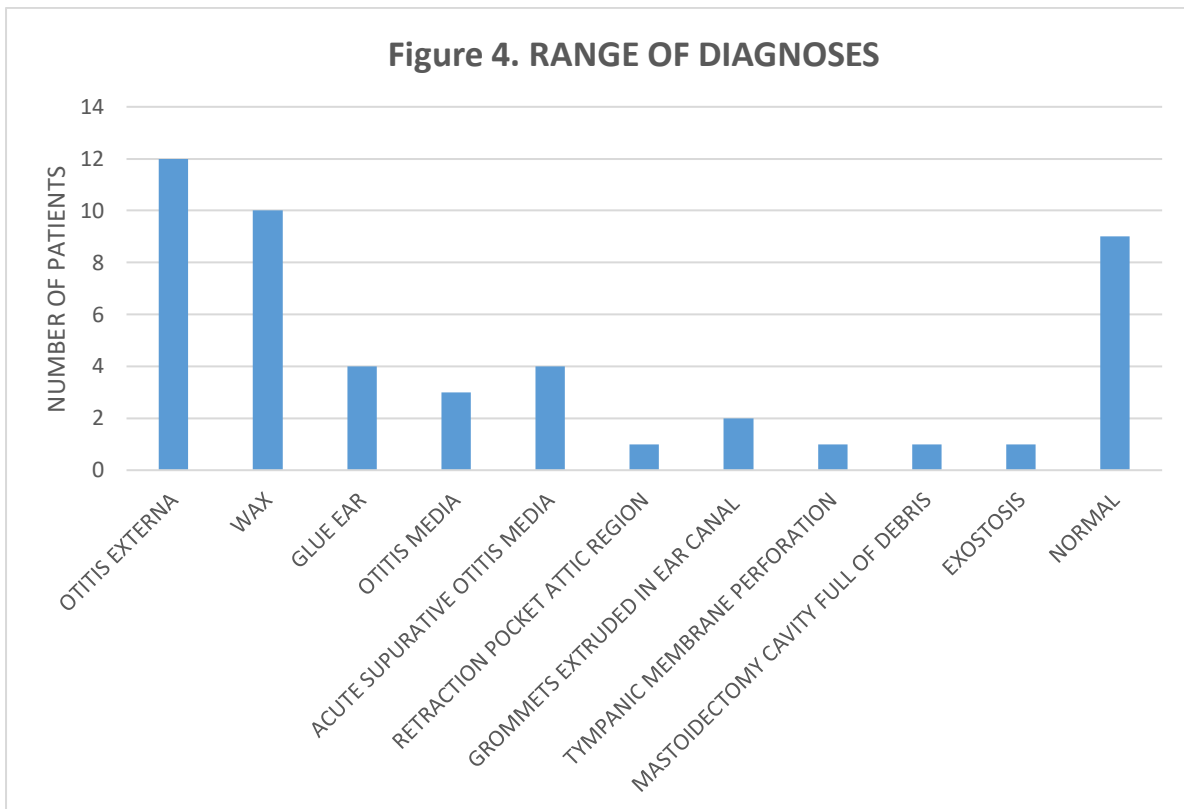
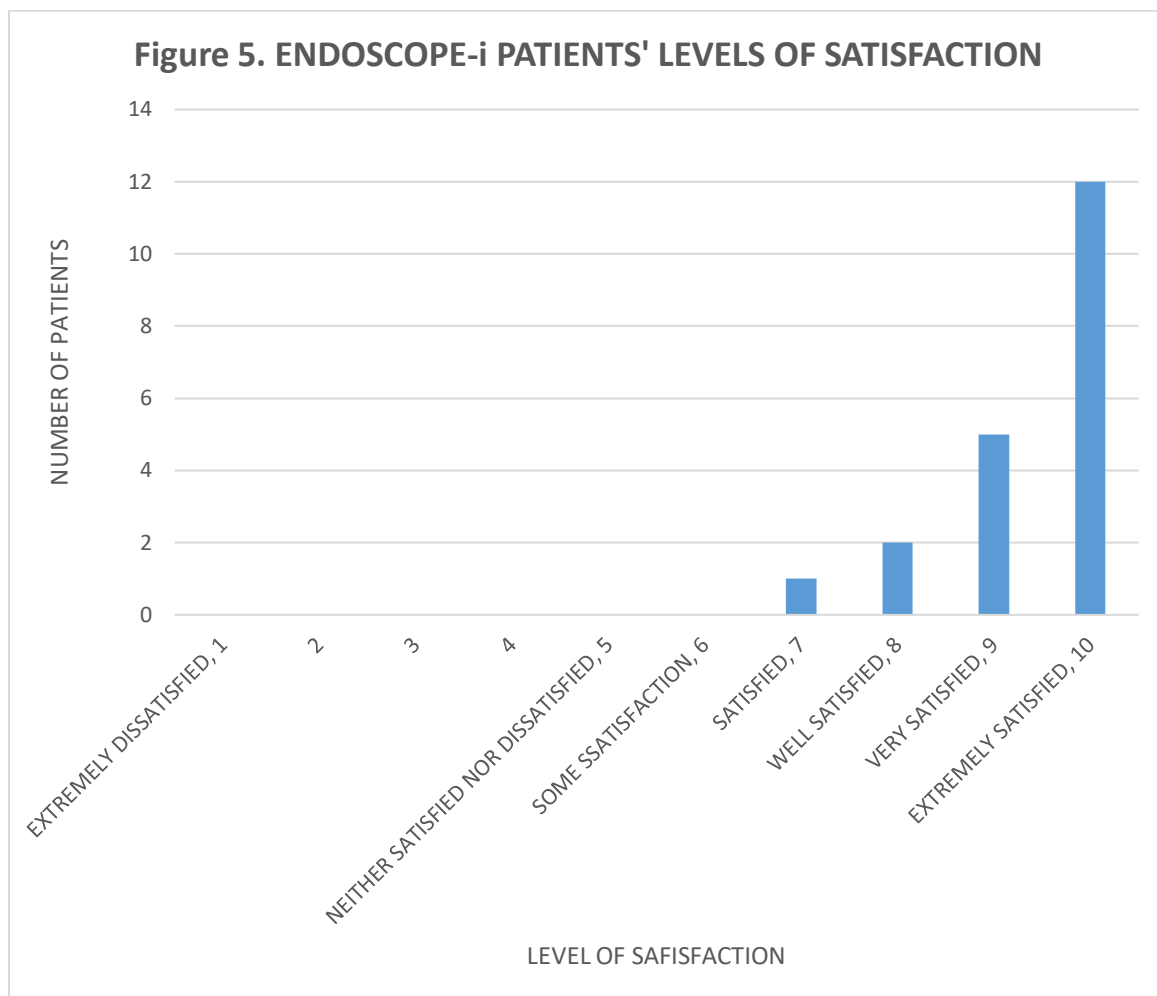


Figure 4. RANGE OF DIAGNOSES



Twenty of the 47 participants provided written feedback and comments. Patients involved in the project, particularly valued the fact that they could see the pictures, understand what the problem was, to be able to be actively involved in the management process⁴ and to have the reassurance that the pictures were also reviewed by an ENT consultant – see Figure 5.



Overall, patients felt that more technology should be used in general practice (100% response) and all of the responders would recommend the service to a friend (100% response). See Figure 6 for the elements most valued by individual patients from the endoscope-i service.

Qualitative feedback generated some common themes and quotes on the patient's 'free to comment' part of the written feedback:

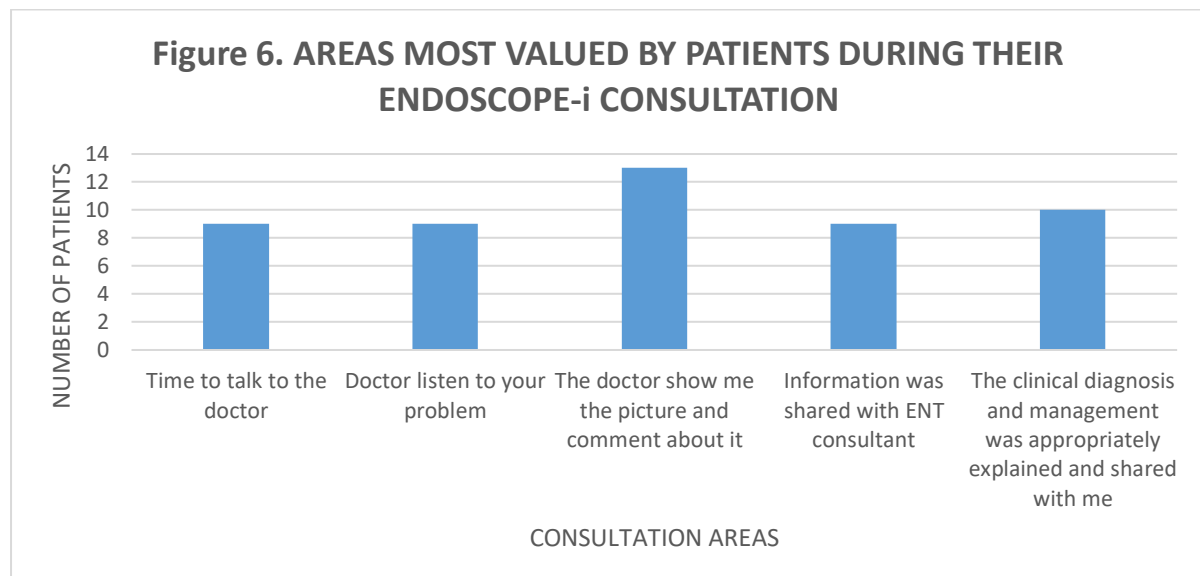
Why would you recommend this service to a friend?

- *"The GP uses the latest technology"*
- *"Diagnosed of a previously missed problem using conventional examination technique (otoscope)"*
- *"The GP was able to detect a problem not previously aware of it"*
- *"The patient can see the problem and talk about it"*
- ... *"It was very easy to understand"*
- *"No visit needed to hospital, problem was managed in surgery"*
- *"Because even though I have hearing loss, I could see it was clear inside"*
- *"It is effective"*

- *“Because it utilises the latest technology”*
- *“Because it diagnosed a problem that had been previously missed”*

Free comments by patients:

- *“The doctor was thorough and used new technology”*
- *“The doctor was able to see with the endoscope what the standard otoscope could not detect”*
- *“Pain free procedure”*
- *“I found interesting to see the problem and be explained what the issue was”*
- *“Talking and explaining all aspects”*
- *“Children are reluctant to go to A+E, more comfortable attending and seeing own GP”*
- *“Excellent service but be on time”*
- *“Excellent outcome so I was very satisfied”*
- *“Very satisfactory from the condition I am suffering from, I have an appointment with ENT Consultant”*
- *“I prefer the problem to be sorted in Surgery rather than queuing in A+E”*
- *“GPs need more up to date equipment”*
- *“I thought it was very good and interesting”*
- *“The doctor is always very thorough in making a diagnosis and is reassuring that the use of new technology is maximised”*
- *“A positive experience that lead to further action being taken to help to solve the problem. When my ears had been looked at previously, they were unable to see anything, but the endoscope-i proved that there was a blockage”*
- *“It is not painful and it is worth being checked out”*



IMPLICATIONS FOR OUR PRACTICE

We believe that this project is a good example of shared diagnostic and management action plans between primary and secondary care, bridging the gap between them.

1. The need for education for GPs in order to acquire the skills and competence in performing this diagnostic test in a safe manner.¹
2. Development of a practice protocol for the referral to the lead GP for the endoscope-otological examination in cases where there is a diagnostic uncertainty with normal otoscopy examination.
3. The need of allocated time slots during the surgeries in order to perform the procedure, receive the Consultant Feedback and communicate to the patient the final outcome and to share the management plan with the patient.
4. Improvement in patient's satisfaction, reduction in inappropriate referrals to secondary care. All referrals to ENT were assessed by ENT Consultant, rendering them appropriate ENT referrals to specialized ENT services.
5. There is potential and expectations from NICE for GPs to develop and offer a further specialized service in primary care with the help of technology potential areas for ear wax/debris suction at a practice level.⁵
6. The portability of the system makes it very useful for the delivery of care in the community settings like Nursing and Residential homes, improving the access of vulnerable, frail adults to specialised services without discrimination.^{6,7}
7. The possibility to use this diagnostic tool in a wide range of patients' ages, in our practice the age range was from three years of age to 89 years of age.
8. The practice has already received a positive comment about the project from the CQC: *"The practice provides an endoscope-ot service. This provides a mobile image enabling a video or still photograph, for example of the ear, which the GP uses to discuss any identified concerns or need for referral with the secondary care specialist in ENT. On occasion reducing the need for patients to attend hospital."*
9. A truly new model of care with clear cooperation between primary and secondary care where the patient is really at the centre of the consultation and he/she is empowered to take more control of their health.⁴
10. In a systematic review⁸, 71% of patients wished "To be active partners in their treatment decisions". Our feedback data from patients matches the results in this study, patients valued the fact that they "could see the picture" and the information and management was shared with the patient. Patients in our study want more technology to be used in primary care.
11. Under the GP Forward View, CCGs are receiving increased funding for IT in General Practice: Among other projects, this investment in General Practice will pay for the roll-out of Wi-Fi in practices.⁹

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<https://endoscope-i.com> etc & Mr Ajith George /Mr Chris Coulson- ENT consultants & directors of endoscope-I company

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