Home-monitoring for neovascular age-related macular degeneration in older adults within the UK: the MONARCH diagnostic accuracy study

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Plain language summary

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What was the question?

Treatment for neovascular age-related macular degeneration, the most common cause of sight loss in those over 50 years, involves regular eye injections and frequent follow-up appointments. This is inconvenient for patients and causes capacity issues in the hospital eye service. Finding tests that could be undertaken at home that could detect if a further injection and hospital appointment was required or not would increase capacity to see those at highest risk of sight loss and also reduce the burden on patients and their carers.

What did we do?

We investigated three different visual function tests, one paper-based and two applications on an iPod Touch$_{TM}$ tablet (Apple, Cupertino, CA, USA). We wanted to see if they could detect an increase in disease activity that would require treatment, compared to the decision by a retinal specialist at a traditional hospital eye outpatient visit based on clinical examination and retinal imaging. To encourage those without a smartphone or home internet to participate, we provided both an iPod Touch and Mobile Wireless-Fidelity device with a mobile contract.

What did we find?

None of the tests performed well enough to safely monitor patients at home. Those who were willing to participate tended to be younger, had previous experience of using smartphones, sending e-mail and internet access and were more well-off than those who chose not to participate. Some participants also experienced difficulties with the devices provided and successfully uploading the data which were not related to the extent of previous information technology experience. There were also significant technical challenges for the research team. The study helpline was used heavily, considerably more than we anticipated.

What does it mean?

These tests are not ready to be used in this context. Future studies involving mobile health technology need to carefully consider how to reach those unlikely to participate and provide sufficient technical support to support long-term follow-up.

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This article

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