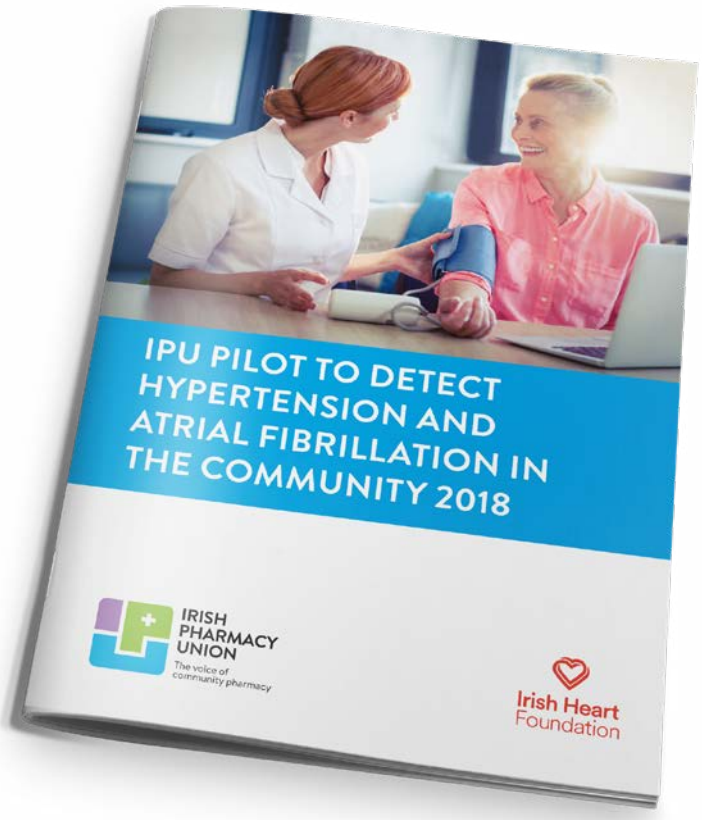
IPU Pilot to detect Hypertension and Atrial Fibrillation in the Community

High blood pressure is the leading cause of stroke and heart attack. High blood pressure is a silent killer that more than 1.2 million people in Ireland are set to have by 2020[1].

Irish data on hypertension and atrial fibrillation suggests that the prevalence of each is rising with the growing elderly population. The data suggests that 64% of people over the age of 50 have high blood pressure, equivalent to 797,000 people in this age group, and nearly half of those are undiagnosed. Regarding atrial fibrillation, TILDA research suggests an overall Irish prevalence estimate of 3% atrial fibrillation in the over 50s; its prevalence is projected to at least double in the next 50 years as the population ages[1,2].

Whilst atrial fibrillation (AF) is not immediately life-threatening in the same way as some arrhythmias, it can lead to heart failure or stroke and so it has potentially serious effects. If undiagnosed, AF confers a 5-fold increase in risk of stroke, and one in five of all strokes is attributed to this arrhythmia. Ischaemic strokes in association with AF are often fatal and those patients who survive are left more disabled by their stroke and more likely to suffer a recurrence than patients with other causes of stroke. In consequence, the risk of death from AF-related stroke is doubled and the cost of care is increased 1.5-fold[3].

The Cost of Stroke in Ireland study, carried out for the Irish Heart Foundation by the ESRI, estimated a total direct cost of stroke to the economy of up to €557 million per annum[4]. It is also estimated that stroke incidence will increase by



59% by 2030. As discussed previously, both hypertension and atrial fibrillation confer a high risk of stroke.

The need for prevention, early detection and comprehensive patient centred management of chronic illnesses, including hypertension and atrial fibrillation, have been recognised by a number of Irish health system reports including the HSE report *Living Well with a Chronic Condition: Framework for Self-Management Support*[5], the PSI's *Future Pharmacy Practice in Ireland: Meeting Patients' Needs*[6] and the Oireachtas Committee on the Future of Healthcare's *Sláintecare* Report[7], which recommends the use of all available mechanisms and processes to ensure healthcare is delivered at the lowest level of complexity and is safe, efficient and good for patients. It also states that, "population health approaches can prevent chronic illness from developing in the first place, so prevention must be a strong focus of our health system".

Pilot Aim and Outcomes

The aim of the *IPU Pilot to Detect Hypertension and Atrial Fibrillation in the Community* was to provide a health check and heart health information service to people 50 years of age and over, to determine the proportion of people in that cohort who may be at risk of hypertension and/or atrial fibrillation. A target was set to check 1,000 people during the pilot.

The proposed pilot outcomes were:

- Health check for people 50 years of age and over for hypertension and/or atrial fibrillation;
- Provision of heart health information to all participants;
- Referral of participant to GP where appropriate;
- Documentation of all health check outcomes and follow-up;
- Assessment of participant acceptability of the service; and
- Assessment of pharmacist acceptability of the service.

In order to ensure competence, conformity and uniformity across the pilot, in terms of health checks and information provided to patients, the Irish Heart Foundation was invited to work with the IPU on this pilot. The Irish Heart Foundation Standard Operating Procedures (SOPs) were used to ensure consistency in the health check. People who undertook the health check were offered lifestyle advice as appropriate and referred to their GP if considered necessary, using Irish Heart Foundation criteria.

Ethics approval and clinical trial registration

Ethics approval for the pilot was granted by the National University of Ireland (NUI)

Sinead McCool, Pilot Project Manager, Dr Declan O'Callaghan, Medical Director, Pfizer, Dr Angie Brown, Consultant Cardiologist and Medical Director, Irish Heart Foundation and Daragh Connolly, President of the Irish Pharmacy Union.

Galway Research and Ethics Committee. Dr Gerry Molloy from NUI Galway acted as an advisor in developing the methodology of the pilot. The pilot was registered as a clinical trial on the International Standard Registered Clinical/Social Study Number registry, ISRCTN with Study No: ISRCTN26825087.

Study design

Pharmacists who are members of the IPU were invited to take part in the pilot by letter and through the IPU's weekly eNewsletter and monthly GM. Recruitment was undertaken in April and May 2018. All 105 pharmacists who expressed an interest in the pilot had to attend a mandatory training day, held in conjunction with the Irish Heart Foundation, on 5 July 2018. Each pharmacy was asked to recruit 20 people, with the aim of enrolling a total of 1,000 participants onto the pilot. The pilot ran from July 2018 to August 2018.

Participants who enrolled onto the pilot were provided with an information sheet on the pilot and asked to sign a consent form in advance of the health check taking place. All health checks were carried out in the pharmacy's private consultation room. The pharmacist measured the person's blood pressure, according to the Irish Heart Foundation SOP, and measured the person's pulse, using the Kardia Mobile device[9]. The pharmacist had the option of completing a manual pulse check, as per the Irish Heart Foundation SOP, if preferred. Each participant was given a written copy of their results. The IPU used their web-based platform, called IPUnet, to collect pilot data. Each participating pharmacist input all data collected from the consultation and survey into the IPUnet platform.

Depending on the results, people were offered lifestyle advice or counselling or a repeat health check as appropriate and referred to their GP if considered necessary, using Irish Heart Foundation referral criteria outlined in the SOPs.

People who were referred to the GP received a phone call from the pharmacy a few weeks later to ascertain if they had been diagnosed with hypertension or atrial fibrillation, prescribed a medicine or referred for further tests.

People who underwent the health check were asked to complete a survey with the pharmacist at the end of their health check to assess their acceptability of the service. The participant survey was also hosted on Survey Monkey so that the participant could be offered the option to complete the survey on their own.

Pharmacists were asked to complete an online survey at the end of the pilot to determine acceptability of the service, the reasons for success or lack of success and the feasibility within the service delivery environment.

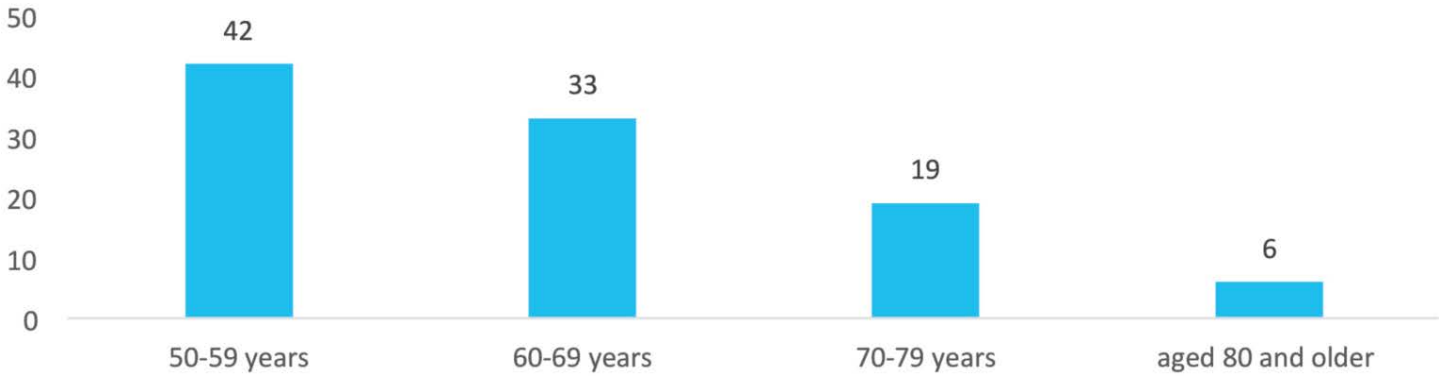
Results

A total of 1,194 participants received a health check in 68 community pharmacies across Ireland over a two month period, which represents a check rate of approximately 16 patients nationally per day. The overall participant age range was from age 50 to age 96.

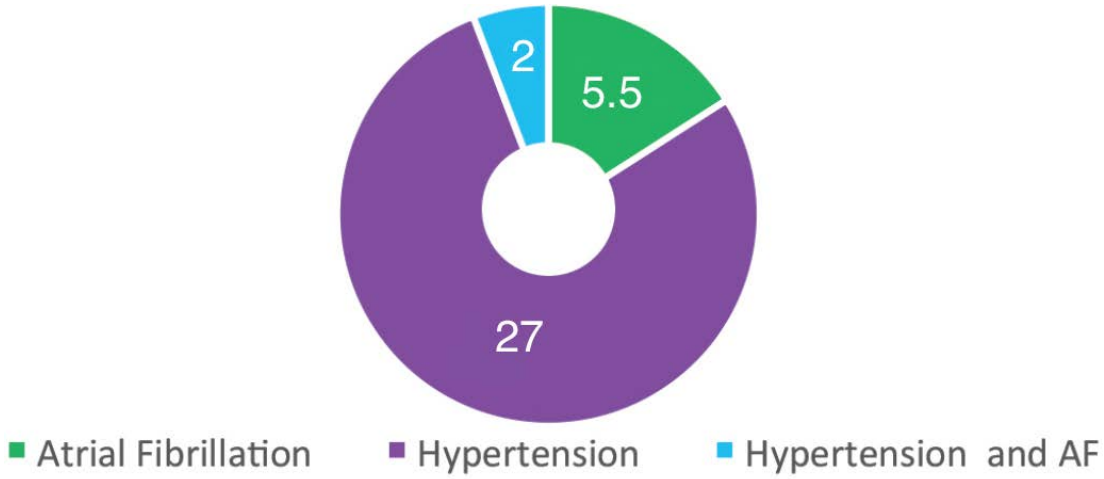
Results show that:

- An irregular pulse (possible atrial fibrillation) was detected in 5.5% of participants who were checked;
- 27% of participants were identified with high blood pressure (possible hypertension);
- Both an irregular pulse (possible atrial fibrillation) and high blood pressure (possible hypertension) were noted in 2% of participants;
- 26% of all participants checked were referred to their GP; and
- 4% of the total population checked were commenced on medicines for hypertension, atrial fibrillation or both.

Graph 1: **Age Range (%) of Participants**



Graph 2: **Detection rates (%)**



The overall gender breakdown for pilot participants was 35% male and 65% female. In participants where hypertension was suspected, 44% were male and 56% were female. In patients where atrial fibrillation was suspected, the results were similar with 54% female and 46% male. These results suggest that, although more females undertook the health check, almost half of males checked were found to be at risk for either hypertension or atrial fibrillation.

Hypertension

In participants where hypertension was suspected, 79% of participants were referred to their GP. A review of follow up on participants who were referred to their GP found that 15% of this cohort had a new antihypertensive started; 1% had the dose of their current antihypertensive increased; 8% were found to have normal blood pressure readings on recheck at their GP; in 5% the GP was undertaking further monitoring; 3% were awaiting their GP appointment; non-adherence issues were identified in 2% of this group; a further 2% were referred on to a consultant; and 1% had a diagnosis of anxiety. 51% of participants in whom hypertension was suspected were lost to follow up.

Within this cohort of patients, 39% were currently prescribed antihypertensives, which could signal that there are issues around adherence or monitoring of blood pressure. This would correlate with the HSE's *Living Well with a Chronic Condition Framework*[5], which acknowledged a high level of undetected hypertension, poor control of hypertension in Ireland, and the need to implement support for self-management of hypertension. The 2017 *IPU New Medicine Service Pilot*[8] demonstrated that the pharmacist-led NMS intervention resulted in a positive effect on patient adherence, and the PSI *Future Pharmacy Practice in Ireland: Meeting Patients' Needs*[6] recommended that pharmacists should be integrated into building the capacity for patients' self-care and self-management of chronic diseases including helping patients manage their medicines.

Atrial fibrillation

In participants where an irregular heart rate was suspected, 89% of participants were referred to their GP. Further follow-on participants showed that 15% of this group were then referred on to a consultant for further investigations, and 13% had a medicine started for the management of atrial fibrillation, with 1% having medicines for both atrial fibrillation and hypertension commenced. 10% of referrals were found to have a normal heart rate on re-testing at their GP; 3% were awaiting their GP appointment; 1% had a diagnosis of anxiety and 1% had a diagnosis of heart failure. 47% of this group were lost to follow up.

Atrial fibrillation and hypertension

Of the participants referred to the GP with possible atrial fibrillation or hypertension, further follow up demonstrated that 7% had both an antihypertensive and anticoagulant commenced; 7% had an antihypertensive commenced and 7% were referred on to a consultant. In 28% of participants, the GP was monitoring the person. 14% of participants had not yet attended their GP and 35% were lost to follow up.

Participant feedback

There was a proactive element in participants seeking checks, with 20% alerted to the pilot via information on display in the pharmacy or social media, 10% took part as they were worried about their health in general, 14% as they were worried about their blood pressure and 7% as they were worried about their heart health.

Participants appeared to have a reasonable knowledge of blood pressure and its detection and management, with 43% of participants aware of what their blood pressure reading was. The majority of participants were aware of what a normal blood pressure reading was (58%), and the problems high blood pressure could potentially cause (61%). However, in regards to knowledge of issues around pulse rate, only 25% of participants knew what atrial fibrillation was, 22% knew what their pulse rate was and only 20% knew of problems associated with an irregular pulse rate. This represents a large knowledge gap in those that were checked, as the figures suggest that only one in five checked had an awareness of the issues around pulse rate and pulse checks.

Overall, the information and support provided by pharmacists during the health check was rated very highly by participants, with 83% happy with the information they were given by the pharmacist who undertook the health check. Almost all participants (98.5%) would like their community pharmacist to be able to provide the blood pressure and pulse health check service to all people 50 years of age and older. This meets the *Sláintecare*[7] principles of ensuring that healthcare is delivered at the lowest level of complexity and is safe, efficient and good for the patients, and that priority is given to health promotion and preventive care.

Pharmacist feedback

The benefits of the pilot training programme provided by the IPU and the Irish Heart Foundation can be seen in the pharmacist survey results, as almost all pharmacists who completed the survey (97%) felt they had been given sufficient training to provide the health check service and 88.5% of respondents rated the training as very good or excellent. The health check service also had a positive impact on pharmacists' activities; in addition to the 42% who stated they already carried out other health check activities, others have decided to include the addition of pulse checks to the blood pressure checks the pharmacy already provided, and more are considering commencing health checks in their practice.

98% of pharmacists thought that this health check service should be rolled out as a HSE-remunerated service. Funding for health check services should allow for protected time to conduct the health check, educate and follow up on patients, whilst not compromising other activities in the community pharmacy.

Use of the Kardia© Mobile Device was a major success as 91% of pharmacists rated it as very good or excellent. Some pharmacists made the following comments in relation to the Kardia© Mobile Device:

- Since pilot has finished, I am still using the Kardia© device and sent a patient to hospital with possible AF. It is a great device to have as a further check on patients you might have concern about.
- The Kardia© gadget was great to use. Helped in particular with one young gentleman in eliminating MI. But GP very happy he was referred as was a torn muscle in sternum.
- We have added on a Kardia© check as part of all our BP screenings going forward.

Feedback from pharmacists concurred with the extremely positive feedback from participants:

- Feedback from patients was good from the outset.
- Patients were interested and grateful.

Pharmacist feedback also identified the role of the community pharmacist in identifying and managing the unmet needs of patients via this health check service:

- Resulted in referral of patients who otherwise would not have attended a GP.
- Enabled early detection, which in the long run will save on extra health service costs further down the road.
- We, as pharmacists, have the ability to do this kind of screening which can identify conditions earlier, allowing GPs to manage these conditions and keep patients out of hospitals.
- It was a useful screening exercise and health promotion tool.

The *Sláintecare* Report[7] recommended the use of all available mechanisms and processes to ensure healthcare is delivered at the lowest level of complexity and is safe, efficient and good for the patients, and that population health approaches can prevent chronic illness from developing in the first place, so prevention must be a strong focus of the Irish health system.

The IPU pilot demonstrated that, by carrying out a standardised population health check for hypertension and atrial fibrillation in the community pharmacy, a highly accessible healthcare location, community pharmacists can deliver an extremely positive benefit to participants in terms of prevention, detection and initial management of the conditions of hypertension and atrial fibrillation.

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