Clinical opportunistic screening for Type 2 diabetes

Full reference and link to full text of paper
Evans P, Langley P and Pereira Gray D. Diagnosing Type 2 diabetes before patients complain of diabetic symptoms- clinical opportunistic screening in a single general practice. *Family Practice* 2008; **25**:376-81 (https://academic.oup.com/fampra/article/25/5/376/444163)

Summary
Type 2 diabetes (T2DM) is increasing in prevalence linked to ageing populations and lifestyle factors including obesity. In the UK, most T2DM is diagnosed and managed in general practice. Despite a widespread belief that early diagnosis is beneficial, there is no national screening program, partially due to cost. In this paper, the authors use the data from their own general practice to investigate and alternative to population screening- clinical opportunistic screening. This involves GPs testing asymptomatic patients for T2DM when they consult their GP for another reason.

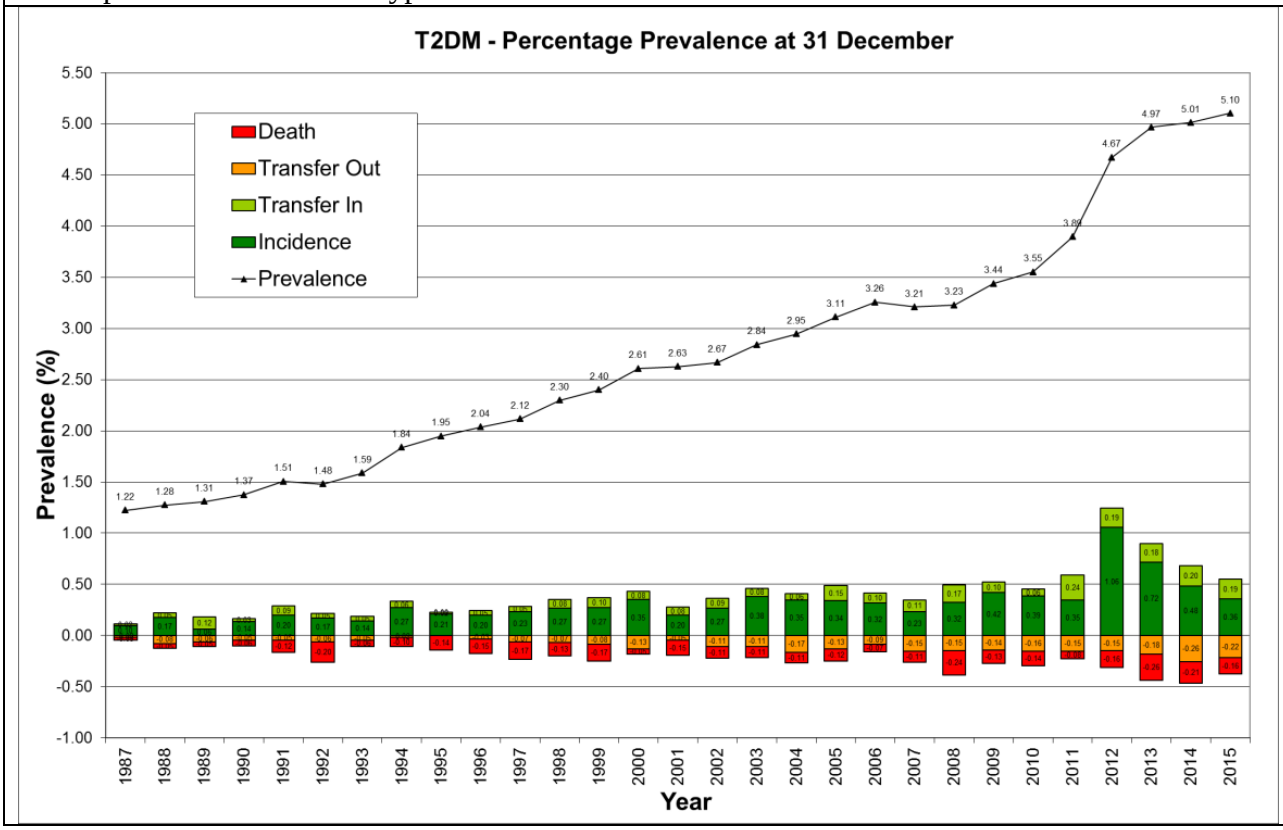
Although this is an observational study something similar to a PICO can be worked out:
Population: All patients diagnosed with T2DM 1987-2006 in a single general practice.
Intervention: Diagnosed through clinical opportunistic screening before symptoms reported.
Comparator: Diagnosed after reporting symptoms.
Outcome: HbA1c levels at diagnosis.

All diagnoses of T2DM made within the practice for 19 years were checked to see whether diagnosis occurred after the patient reported symptoms or through opportunistic screening. The HbA1c (which is a measure reflecting blood sugar levels over the last month) within 60 days of diagnosis was recorded. They found that 57.9% of diagnoses were made asymptomatically and patients diagnosed through screening had significantly lower HbA1c levels.

Key researcher
Philip Evans joined St Leonard's Practice in 1986 and told the then senior partner, Professor Denis Pereira Gray, that he was not interested in research. By 1988, he had become an RCGP Research Training Fellow and he completed a research-based Masters degree in 1995. Since then he has published a number of studies on diabetes with a particular focus on the diagnosis of T2DM and on pre-diabetes. He worked as a GP partner until retirement in 2018 and was a senior lecturer at the University of Exeter for many years. He recently became Associate Professor of General Practice and Primary Care in the University of Exeter Medical School. He is also the National Lead for the cluster that includes Primary Care within the National Institute for Health Research (NIHR) Clinical Research Network which works with universities and other researchers to co-ordinate patient recruitment and promote research in the NHS.

Graph showing prevalence of T2DM in the practice until 2015

Prevalence and incidence per year as a percentage of the total practice population. An earlier version (up to 2005) was previously published in Evans et al 2008.
Published in 2018 in: Pereira Gray D, Sidaway-Lee K. National standard setting and local developments in the care of type 2 diabetes. *Practical Diabetes* 2018 **35**:7-9



Thinking points

1. During the study, the prevalence of T2DM rose from 1.1% to 3.0%. It is currently at 5% (see graph) although this increase is partly due to a change in diagnosis method. At the time of the paper, a fasting glucose test was required. In 2012, HbA1c became the main diagnostic test, as this did not require fasting, it made clinical opportunistic screening simpler and made it possible to test previously hard-to-reach groups such as frail elderly and those with learning difficulties.
2. This study was carried out in a single general practice. This meant that the researchers could check each record individually and, if necessary, ask the GP for more details. The precision and accuracy of the data is likely to be good. However, the disadvantage is that the results of the study may be less applicable to other general practices. There may be some special feature of this practice which produces these results. Historically, single practice studies have been extremely influential. More recently, however, they may be becoming less so as large cohort studies and well-conducted randomised controlled trials are more prevalent and considered to be better evidence.
3. It is quite likely that a large number of GPs around the country were testing patients opportunistically for T2DM. A large trial of population level screening for T2DM found no improvement over usual care, in part because the GPs in practice in the usual care arm were using testing their patients opportunistically and finding quite a large proportion of cases of

T2DM.

4. Although, it is generally thought that early diagnosis is better as lower HbA1c is linked to fewer complications of diabetes, this has not yet been conclusively shown. It is difficult to prove whether people would have suffered more complications if they had been diagnosed later. The problem is when to measure complications from: if people are diagnosed later in the disease trajectory, they are likely to develop complications sooner after diagnosis, even if diagnosis (and potential treatment) made no difference. However, if early diagnosis makes no difference, this means the first few years of diabetes treatments are pointless!