RISK
medical solutions

e-Health

Individual & less expensive screening for diabetic retinopathy in

The United Kingdom

www.risk.is

Individualized allocation of health care resources
UK Summary

Solution

We use individualized risk assessment to control screening for diabetic retinopathy in order to reduce costs and re-allocate available health-care services towards high risk patients who need them. The software solution assesses the risk for sight threatening retinopathy and controls screening frequency. It can reduce the frequency of diabetic eye screening by up to 58% without compromising clinical outcome. This approach not only economizes health care but creates more comfort for patients in regards to effort and money.

UK – Cost of diabetic retinopathy screening

We have used available literature to estimate the cost of screening for diabetic retinopathy in the UK. Diabetic retinopathy is the leading cause of blindness amongst patients of working age in the UK and represents a significant workload for the NHS[1], both in regards to governmental cost and social cost, lack of earning capacity and social support. NHS spends 10% of its annual budget on diabetes, around 9 billion pounds[2]. This cost does not consider social cost due to blindness.

According to Diabetes UK[3] there are 2.7 million diabetics in the UK (2011) representing 1% of the world population. By 2025 this number is estimtated to have reached 4 million people, equal to 400 new cases per day. Cost per screening visit may vary. From gathered information on screening cost in Europe we assume a flat rate of £30 pounds per visit and estimate 90% participation of the UK population, i.e. 90% of the total diabetic popluation goes annually for screening. This tells us that 2.25 million patients are screened annually with incurring cost of £30 pounds per visit. It will take most patients roughly 2 hours to travel back and forth for a screening visit, reducing their workload activity by the same amount.

From these numbers we can calculate that the total cost of diabetic retionpathy screening in the UK is close to £73 million pounds and 4.9 million working hours per year.

[1] Evans J. Cause of blindness and partial sight in England and Wales 1990-1991. HMSO 1995

[2] This is based on 2007/2008 budget for the NHS of approximately 90.7 billion pounds

[3] Diabetes in the UK 2010: Key statistics on diabetes

Cost benefit – individualized screening

By implementing our software in the UK and building on results achieved in previous data testing, the software could save £42 million pounds a year and 2.8 million working hours with the same clinical results as the current approach, i.e. annual screening. We assume a 58% reduction in screening visits.

UK individualized screening	
Total cost of annual screening	72,900,000
Travel time - lost working hours	4,860,000
Cost reduction	**42,282,000**
Reduction in lost working hours	**2,818,800**

Over a 10 year span or by 2022 the system could have saved more than £500 million pounds and 320 million working hours, considering the increase in prevalence of diabetes.

The estimated 58% reduction in screening visits builds on a fairly healthy cohort from Denmark. Validating the system in the UK on a British cohort is likely to produce a slightly lesser reduction rate seeing the deteriorating clinical state of the British diabetic population. We still anticipate the overall reduction to be more than half.

It is important to note that our system does not only recommend screening intervals one year and longer but also one year and less, down to 3 months depending on patients condition. This means that added quality is achieved in certain cases. This is being done by using available information and technology by categorizing those who need screening from those who do not, separating high risk from medium and low risk individuals.

Validation & Use

The goal is to have the system tried and approved in the UK by local physicians and according to the ENSPDR[4]. Validating the system on a British cohort will give reliable estimates of how much the system can save based on the population's clinical state in the UK.

The solution is adaptable to different electronic health-care platforms and can be easily implemented. The main reasons for slow progress in IT development within the health-care industry can be traced to the significant cost commitment it brings with it. This is not the case with our product. By synergizing leading expertise and available epidemiological data we can deliver a reliable, cost effective system that works with low implementation cost.

[4] The English National Screening Program for Diabetic Retinopathy