

POWERING THE PREVENTION SHIFT | THE CVDACTION IMPACT MODEL



This analysis models the health & economic benefits of enabling substantial improvement in secondary prevention of cardiovascular disease (CVD).

Increase in the uptake of 4 high impact but underused treatments is modelled.

3 ambition scenarios are considered: Step Change Improvement, Advanced Improvement and Full Uptake.

The headline table below shows the impact of achieving Step Change - defined as a realistic near-term improvement ambition.

Birmingham and Solihull ICB Year 3 – Step Change Scenario	
Events prevented: <ul style="list-style-type: none"> • 240 Heart attacks • 435 Strokes • 741 Heart failure admissions • 61 End stage kidney disease 	1,477 events* ~ 11,331 bed days (excl ESKD) <small>*Total events may not match due to rounding</small>
Health/social care savings	£27.5 million
Productivity gains	£30.7 million
Benefit to cost ratio	14.7 <small>(Over £14 saved for every £1 spent, with break-even for NHS in first year of Step Change)</small>

For full report and detailed results for England and every ICB, visit:

www.into-action.health/impactreport

A realistic step change improvement in secondary prevention will prevent thousands of serious cardiovascular events, deliver huge savings in health and social care, and add £ billions to the national economy in 3 years.

The CVD Prevention Challenge

Secondary prevention – using medication to treat high risk conditions like blood pressure and cholesterol – is very effective at preventing cardiovascular disease. But under use of NICE recommended, high impact treatments that prevent CVD is substantial and longstanding – with little change over many years.

The CVD ACTION Health Economic Impact Model

- **4 high risk conditions:** high blood pressure, high cholesterol, chronic kidney disease and diabetes
- **4 high impact treatments** that are NICE recommended but substantially under-used (Blood pressure lowering, cholesterol lowering, renin angiotensin inhibitors, SGLT2 inhibitors)
- **4 major outcomes:** heart attack, stroke, heart failure, end stage kidney disease
- **3 scenarios:**
 1. **Step Change** as the minimum realistic near-term improvement level. For example, step change for blood pressure = 80% patients treated to target.
 2. **Advanced** (representing substantial improvement on the way to Full Uptake)
 3. **Full Uptake** (not fully achievable in practice as medicines will not be appropriate for every patient)
- **Modelled costs include** use of CVD ACTION, structured support for primary care transformation and increased medication use (>90% of the total costs).

CVD ACTION targets the HOW of optimising prevention in the real world, with 3 essential pillars to enable primary care teams to work differently:

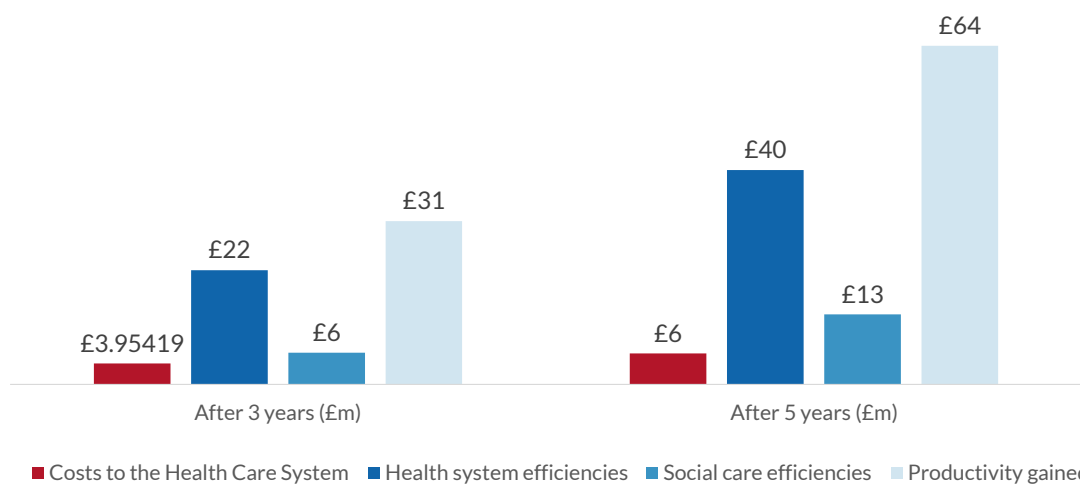
1. **Smart data** - routinely detect patients who are not on optimal treatment, and prioritise for optimisation
2. **Structured support for transformation** enabling teams to adapt workforce and pathways to optimise at scale and within capacity
3. **Partnership with primary care for step change** – supporting teams to set and achieve step-change objectives in secondary prevention

For more information on CVD ACTION contact Rosa@Into-Action.Health

CVD ACTION Modelled Impact (Step Change Scenario) Headline Costs and Benefits

Location	Birmingham and Solihull Integrated Care Board
CVD ACTION optimisation cohort	All
Number of patients optimised in year 1	56,129

	After 3 years	After 5 years
Events Prevented		
Myocardial infarctions	240	392
Strokes (ischaemic)	435	702
Heart failure admissions	741	1,184
End stage kidney disease	61	97
Total	1,477	2,375
Costs to the Health Care System	£4.0m	£5.8m
Benefits		
Health system efficiencies	£21.5m	£40.3m
Social care efficiencies	£6.0m	£13.2m
Productivity gained	£30.7m	£63.7m
Total	£58.2m	£117.3m
Total Benefits to Costs Ratio (Gross)	14.7	20.1



All costs and benefits are discounted

CVDAction: Costs and Benefits by Year

Location: Birmingham and Solihull Integrated Care Board

Scenario: Step Change

RESULTS (CUMULATIVE)

	After 1 year	After 2 years	After 3 years	After 4 years	After 5 years	After 10 years	After 15 years
Number avoided with CVDAction							
Myocardial Infarctions	81	162	240	318	392	748	1,053
Strokes	149	293	435	569	702	1,310	1,835
Heart failure admissions	257	506	741	967	1,184	2,155	2,945
End stage kidney disease	21	41	61	79	97	178	245
Costs of CVDAction and treatment (discounted)							
CVDAction	£329,580	£329,580	£329,580	£329,580	£329,580	£329,580	£329,580
Transformation cost	£411,975	£411,975	£411,975	£411,975	£411,975	£411,975	£411,975
Treatment	£1,149,815	£2,207,215	£3,212,632	£4,168,996	£5,079,001	£9,017,509	£12,120,276
Total	£1,891,370	£2,948,770	£3,954,188	£4,910,551	£5,820,556	£9,759,064	£12,861,831
Value by economic category (discounted)							
Health costs avoided	£5,881,430	£13,152,014	£21,505,568	£30,620,342	£40,344,462	£92,984,703	£144,007,915
Social care costs avoided	£1,182,170	£3,218,013	£5,975,782	£9,327,572	£13,183,136	£37,075,467	£63,576,228
Informal care costs avoided	£6,361,751	£14,894,260	£25,262,496	£37,067,320	£50,143,462	£126,237,708	£206,865,617
Lost productivity avoided	£634,272	£2,533,690	£5,467,005	£9,215,415	£13,604,356	£41,021,833	£70,655,785
Total	£14,059,622	£33,797,976	£58,210,851	£86,230,649	£117,275,415	£297,319,711	£485,105,546
Value by clinical event (discounted)							
Myocardial Infarctions	£1,218,568	£2,750,397	£4,521,577	£6,491,488	£8,594,713	£20,279,933	£31,785,947
Strokes	£11,154,978	£25,757,642	£43,275,874	£63,052,602	£84,845,449	£210,505,746	£342,709,130
Heart failure admissions	£795,692	£2,594,058	£5,165,721	£8,318,070	£11,915,140	£33,113,721	£54,715,812
End stage kidney disease	£890,384	£2,695,880	£5,247,679	£8,368,489	£11,920,113	£33,420,311	£55,894,658
Total	£14,059,622	£33,797,976	£58,210,851	£86,230,649	£117,275,415	£297,319,711	£485,105,546
Benefit to cost ratio (Gross)							
Health costs avoided	3.1	4.5	5.4	6.2	6.9	9.5	11.2
Social care costs avoided	0.6	1.1	1.5	1.9	2.3	3.8	4.9
Informal care costs avoided	3.4	5.1	6.4	7.5	8.6	12.9	16.1
Lost productivity avoided	0.3	0.9	1.4	1.9	2.3	4.2	5.5
Total	7.4	11.5	14.7	17.6	20.1	30.5	37.7

*Numbers less than 10 suppressed

CVD ACTION Optimisation Cohorts Analysis After 3 Years

Location **Birmingham and Solihull Integrated Care Board**

Step Change Scenario After 3 Years

Optimisation Cohort	Health System Costs	CVD Events Prevented ¹	Health System Efficiencies	Social Care Efficiencies	Informal Care Avoided	Productivity Gained	Total Benefits
Hypertension							
1. Blood pressure not treated to target	£701,022	531	£8,014,904	£3,069,948	£13,009,186	£1,807,116	£25,901,154
Cholesterol							
2. CVD not on Lipid Lowering Therapy (LLT)	£87,519	31	£593,039	£251,938	£1,067,595	£113,895	£2,026,467
3. CVD on suboptimal dose or intensity of statin	£289,249	62	£976,691	£292,913	£1,236,999	£208,873	£2,715,476
4. CVD on max statin but not treated to target	£591,941	25	£487,299	£156,253	£666,708	£92,521	£1,402,782
Chronic Kidney Disease							
5. RAA indicated but not prescribed	£26,476	28	£568,166	£96,545	£415,261	£163,642	£1,243,614
6. SGLT2i indicated but not prescribed	£373,398	132	£1,117,796	£0	£0	£404,459	£1,522,255
7. CVD and Statin not prescribed	£28,431	18	£370,748	£160,144	£685,079	£66,366	£1,282,337
8. BP not treated to target	£36,920	53	£816,309	£317,229	£1,338,438	£185,073	£2,657,049
Diabetes							
9. RAA indicated but not prescribed	£327,285	231	£4,273,834	£784,355	£3,299,914	£1,236,660	£9,594,762
10. SGLT2i indicated but not prescribed	£1,332,767	234	£2,068,576	£0	£0	£700,681	£2,769,258
11. DM and HTN with BP not treated to target	£132,654	121	£1,977,686	£747,972	£3,130,266	£441,718	£6,297,642
12. DM with CVD not on LLT	£26,525	13	£240,521	£98,485	£413,049	£45,999	£798,055
Total	£3,954,188	1,477	£21,505,568	£5,975,782	£25,262,496	£5,467,005	£58,210,851

All costs and benefits are discounted

1 Events include heart attacks, strokes, heart failure admissions and end stage kidney disease.