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.

South Yorkshire ICB Year 3 – Step Change Scenario	
Events prevented: • 217 Heart attacks • 363 Strokes • 628 Heart failure admissions • 53 End stage kidney disease	**1,261 events*** **~ 9,662 bed days** (excl ESKD) *Total events may not match due to rounding
Health/social care savings	**£23.4 million**
Productivity gains	**£25.8 million**
Benefit to cost ratio	**12.8** (Over £12 saved for every £1 spent, with break-even for NHS in first year of Step Change)

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 CVDACTION 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 CVDACTION, structured support for primary care transformation and increased medication use (>90% of the total costs).

CVDACTION 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

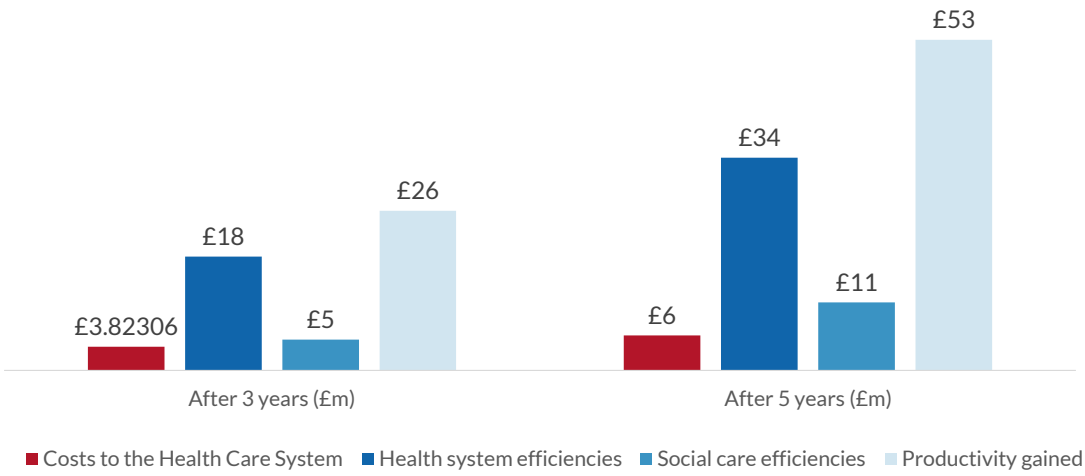
3. **Partnership with primary care for step change** – supporting teams to set and achieve step-change objectives in secondary prevention

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

CVDACTION Modelled Impact (Step Change Scenario)
Headline Costs and Benefits

Location	South Yorkshire Integrated Care Board
CVDACTION optimisation cohort	All
Number of patients optimised in year 1	50,210

	After 3 years	After 5 years
Events Prevented		
Myocardial infarctions	217	353
Strokes (ischaemic)	363	586
Heart failure admissions	628	997
End stage kidney disease	53	84
Total	**1,261**	**2,019**
Costs to the Health Care System	**£3.8m**	**£5.6m**
Benefits		
Health system efficiencies	£18.4m	£34.3m
Social care efficiencies	£5.0m	£11.0m
Productivity gained	£25.8m	£53.3m
Total	**£49.1m**	**£98.6m**
Total Benefits to Costs Ratio (Gross)	**12.8**	**17.5**



All costs and benefits are discounted

CVDACTION: Costs and Benefits by Year

Location: South Yorkshire 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	74	146	217	286	353	667	934
Strokes	125	245	363	475	586	1,090	1,523
Heart failure admissions	219	430	628	816	997	1,794	2,427
End stage kidney disease	18	36	53	68	84	152	207
Costs of CVDACTION and treatment (discounted)							
CVDACTION	£304,953	£304,953	£304,953	£304,953	£304,953	£304,953	£304,953
Transformation cost	£381,191	£381,191	£381,191	£381,191	£381,191	£381,191	£381,191
Treatment	£1,124,936	£2,156,756	£3,136,919	£4,068,399	£4,953,929	£8,777,401	£11,778,762
Total	**£1,811,079**	**£2,842,900**	**£3,823,062**	**£4,754,543**	**£5,640,073**	**£9,463,545**	**£12,464,906**
Value by economic category (discounted)							
Health costs avoided	£5,035,703	£11,252,693	£18,369,005	£26,109,157	£34,335,960	£78,390,477	£120,425,096
Social care costs avoided	£988,543	£2,687,760	£4,984,089	£7,771,780	£10,974,640	£30,768,056	£52,619,010
Informal care costs avoided	£5,319,762	£12,447,700	£21,081,305	£30,903,165	£41,768,517	£104,818,180	£171,300,648
Lost productivity avoided	£543,066	£2,169,519	£4,671,314	£7,854,053	£11,564,183	£34,460,256	£58,800,108
Total	**£11,887,074**	**£28,557,672**	**£49,105,713**	**£72,638,154**	**£98,643,299**	**£248,436,969**	**£403,144,861**
Value by clinical event (discounted)							
Myocardial Infarctions	£1,103,722	£2,486,603	£4,087,067	£5,862,339	£7,756,293	£18,223,718	£28,458,672
Strokes	£9,327,909	£21,527,961	£36,115,396	£52,570,898	£70,679,888	£174,801,155	£283,811,031
Heart failure admissions	£678,491	£2,199,950	£4,359,043	£6,984,522	£9,958,235	£27,141,739	£44,216,019
End stage kidney disease	£776,953	£2,343,158	£4,544,208	£7,220,396	£10,248,883	£28,270,357	£46,659,139
Total	**£11,887,074**	**£28,557,672**	**£49,105,713**	**£72,638,154**	**£98,643,299**	**£248,436,969**	**£403,144,861**
Benefit to cost ratio (Gross)							
Health costs avoided	2.8	4.0	4.8	5.5	6.1	8.3	9.7
Social care costs avoided	0.5	0.9	1.3	1.6	1.9	3.3	4.2
Informal care costs avoided	2.9	4.4	5.5	6.5	7.4	11.1	13.7
Lost productivity avoided	0.3	0.8	1.2	1.7	2.1	3.6	4.7
Total	**6.6**	**10.0**	**12.8**	**15.3**	**17.5**	**26.3**	**32.3**

*Numbers less than 10 suppressed

CVDACTION Optimisation Cohorts Analysis After 3 Years

Location South Yorkshire Integrated Care Board

Step Change Scenario After 3 Years

Optimisation Cohort	Heath System Costs	CVD Events Prevented[1]	Health System Efficiencies	*Social Care Efficencies*	*Informal Care Avoided*	*Productivity Gained*	*Total Benefits*
Hypertension							
1 .Blood pressure not treated to target	£522,765	390	£5,894,042	*£2,257,595*	*£9,566,764*	*£1,328,927*	*£19,047,327*
Cholesterol							
2. CVD not on Lipid Lowering Therapy (LLT)	£143,837	51	£967,726	*£411,114*	*£1,742,110*	*£185,855*	*£3,306,806*
3. CVD on suboptimal dose or intensity of statin	£383,480	81	£1,279,475	*£383,719*	*£1,620,482*	*£273,626*	*£3,557,301*
4. CVD on max statin but not treated to target	£776,466	33	£638,366	*£204,693*	*£873,394*	*£121,204*	*£1,837,658*
Chronic Kidney Disease							
5. RAA indicated but not prescribed	£28,008	29	£595,714	*£101,226*	*£435,395*	*£171,576*	*£1,303,911*
6. SGLT2i indicated but not prescribed	£392,643	138	£1,171,993	*£0*	*£0*	*£424,070*	*£1,596,063*
7. CVD and Statin not prescribed	£30,036	19	£388,724	*£167,909*	*£718,295*	*£69,584*	*£1,344,512*
8. BP not treated to target	£28,898	41	£629,905	*£244,790*	*£1,032,806*	*£142,812*	*£2,050,313*
Diabetes							
9. RAA indicated but not prescribed	£279,447	195	£3,617,013	*£663,812*	*£2,792,769*	*£1,046,605*	*£8,120,199*
10. SGLT2i indicated but not prescribed	£1,131,080	198	£1,750,669	*£0*	*£0*	*£592,998*	*£2,343,666*
11. DM and HTN with BP not treated to target	£83,787	75	£1,231,822	*£465,882*	*£1,949,718*	*£275,129*	*£3,922,551*
12. DM with CVD not on LLT	£22,615	11	£203,556	*£83,350*	*£349,570*	*£38,930*	*£675,406*
Total	**£3,823,062**	**1,261**	**£18,369,005**	*£4,984,089*	*£21,081,305*	*£4,671,314*	*£49,105,713*

All costs and benefits are discounted

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