

CMDHB Pacific Population Diabetes Type II Modelling

Pacific Provider's Fono Pacific Perspectives

24 February 2006

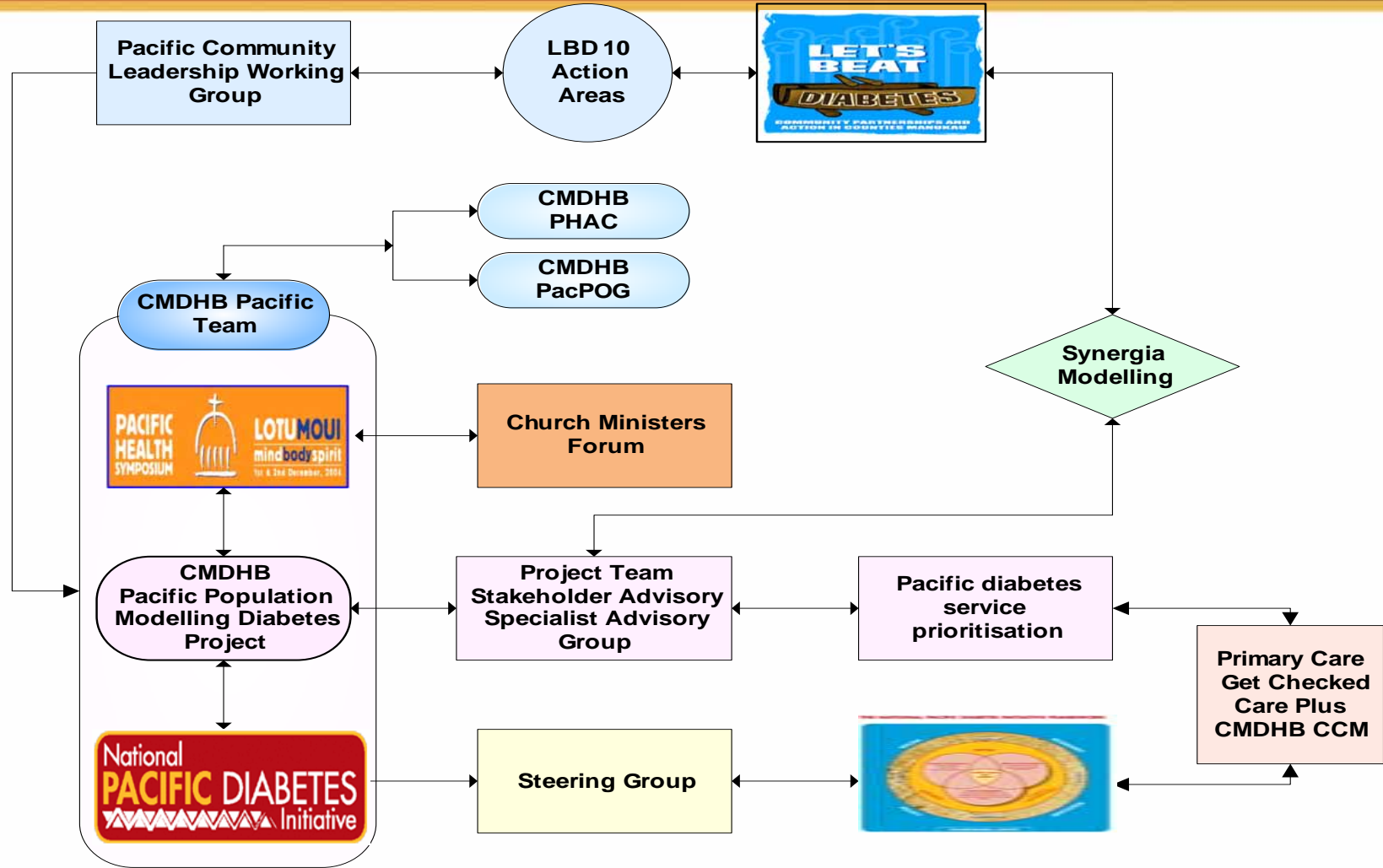
PPDM Stakeholders Advisory

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- Viliami Tutone CMDHB - Renal
- Teuila Percival CMDHB - Paed
- Debbie Ryan MOH
- David Schaaf Auckland Uni - Pacific
- Josephine Samuelu NPDI
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- Maika Kinahoi-Veikune CMDHB - CA

PPDM Project Team

- David Rees Synergia
 - Paul Stephenson Synergia
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 - Robert Scragg Auckland Uni
 - Aumea Herman CMDHB
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- Gary Jackson CMDHB
 - Patricia Metcalf Auckland Uni

Pacific Diabetes Projects Inter-Relationships



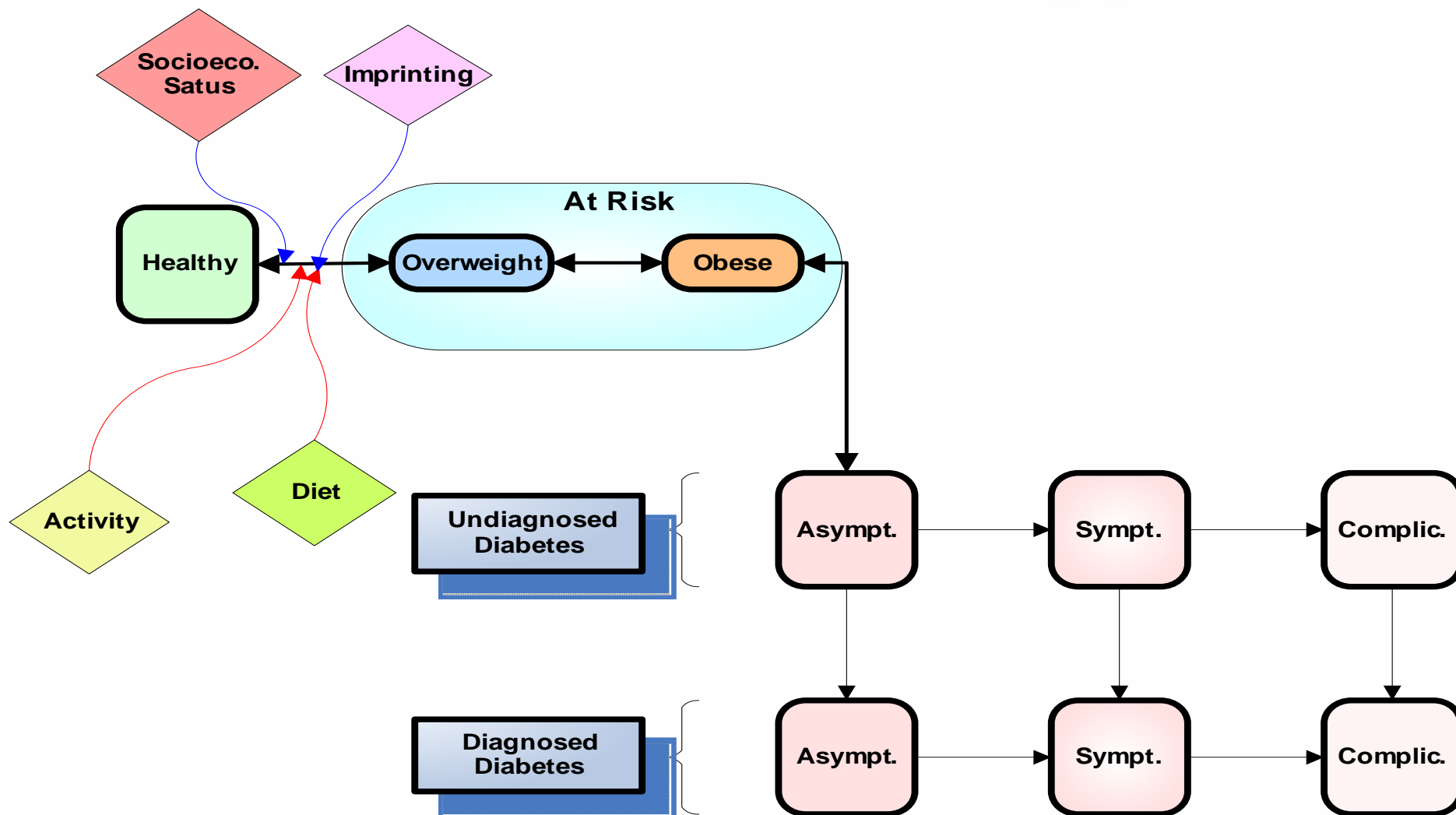
Project - Aim

1. Model - risk factors impacting on diabetes prevalence.
2. Analyse - scenarios for population health interventions and/or risk factor management.
3. ID - options for service and/or population health priorities.
4. ID - investment and/or funding implications

Setting the Context

- Complexity of Pacific people
- Eating based society
- Broader determinants – poverty, housing
- Demographics – young
- Few studies – internationally
- Interventions – Kids in Action/OPIC
- Prevention – investing resources
- Targeting Church leaders
- Working with whole families
- Focus on children

Drivers of Flow



Model - assumptions

And the answer is....

Model - assumptions

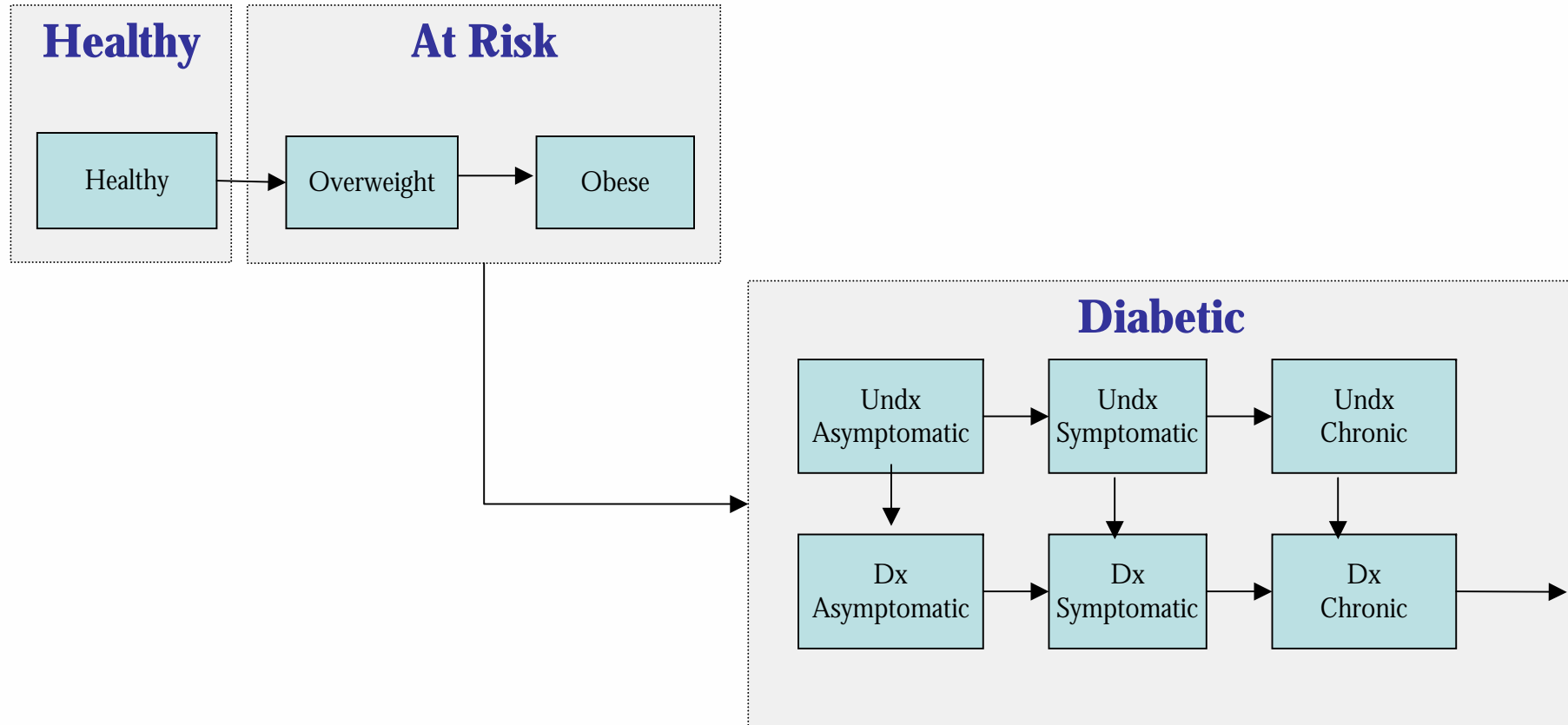
And the answer is....

0.25306

Model - assumptions

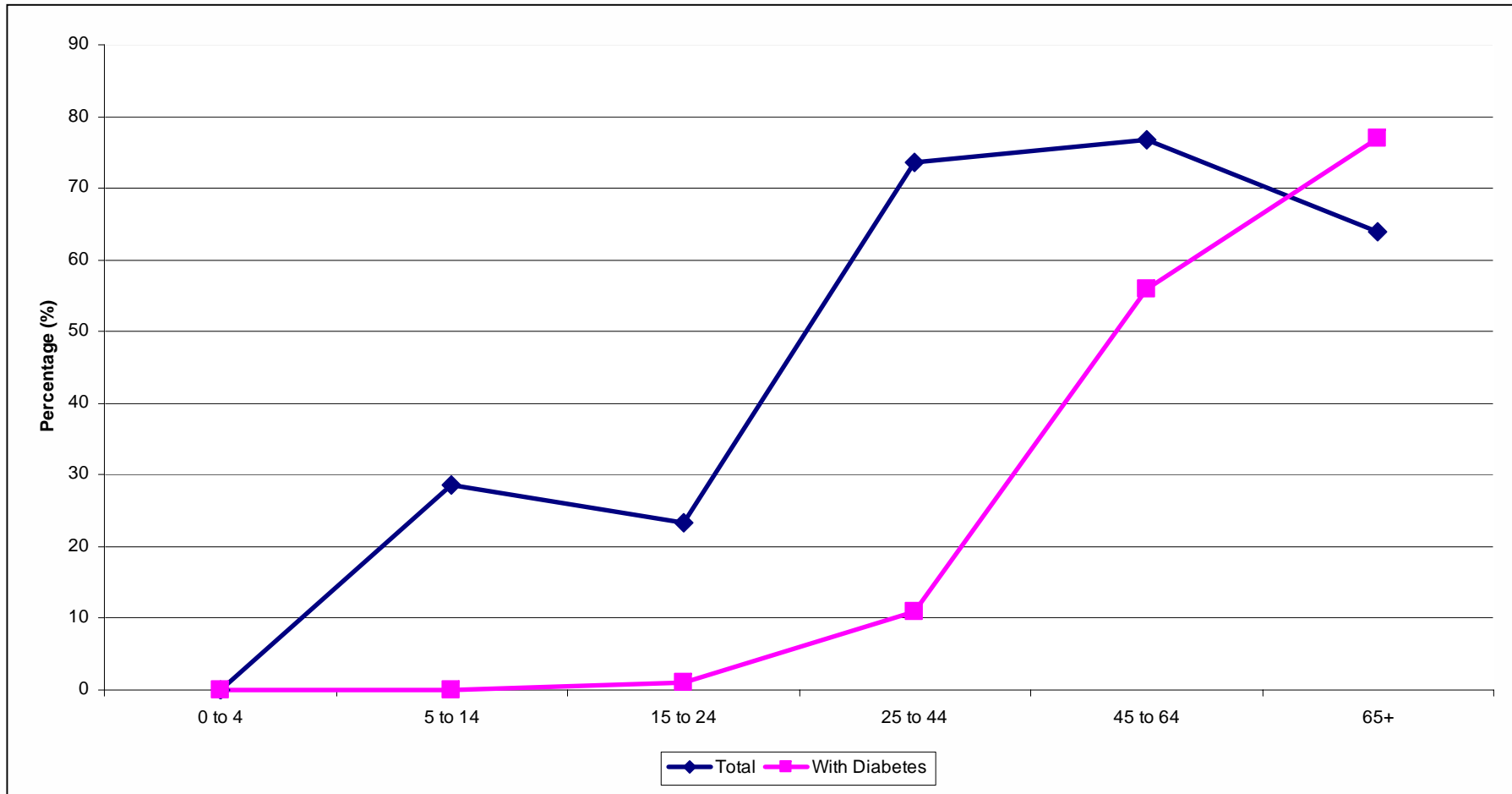
- Brings together the best information
- Broad sweep of future – run over 30 years
- Likely improvements if intervene in certain areas
- Based on population growth and ageing – no change in flow rates of obesity and diabetes
- Excludes other variables – smoking

Model - basic structure



Model - assumptions

Baseline population dynamics - prevalence overweight & obesity



Model - assumptions

Interventions – cost and effectiveness

Programme	Cost \$ per person/year	Effectiveness
Population wide	\$1.00	1%
Targeted	\$40.00	10%
Intensive	\$2000.00	70%

Scenario 1

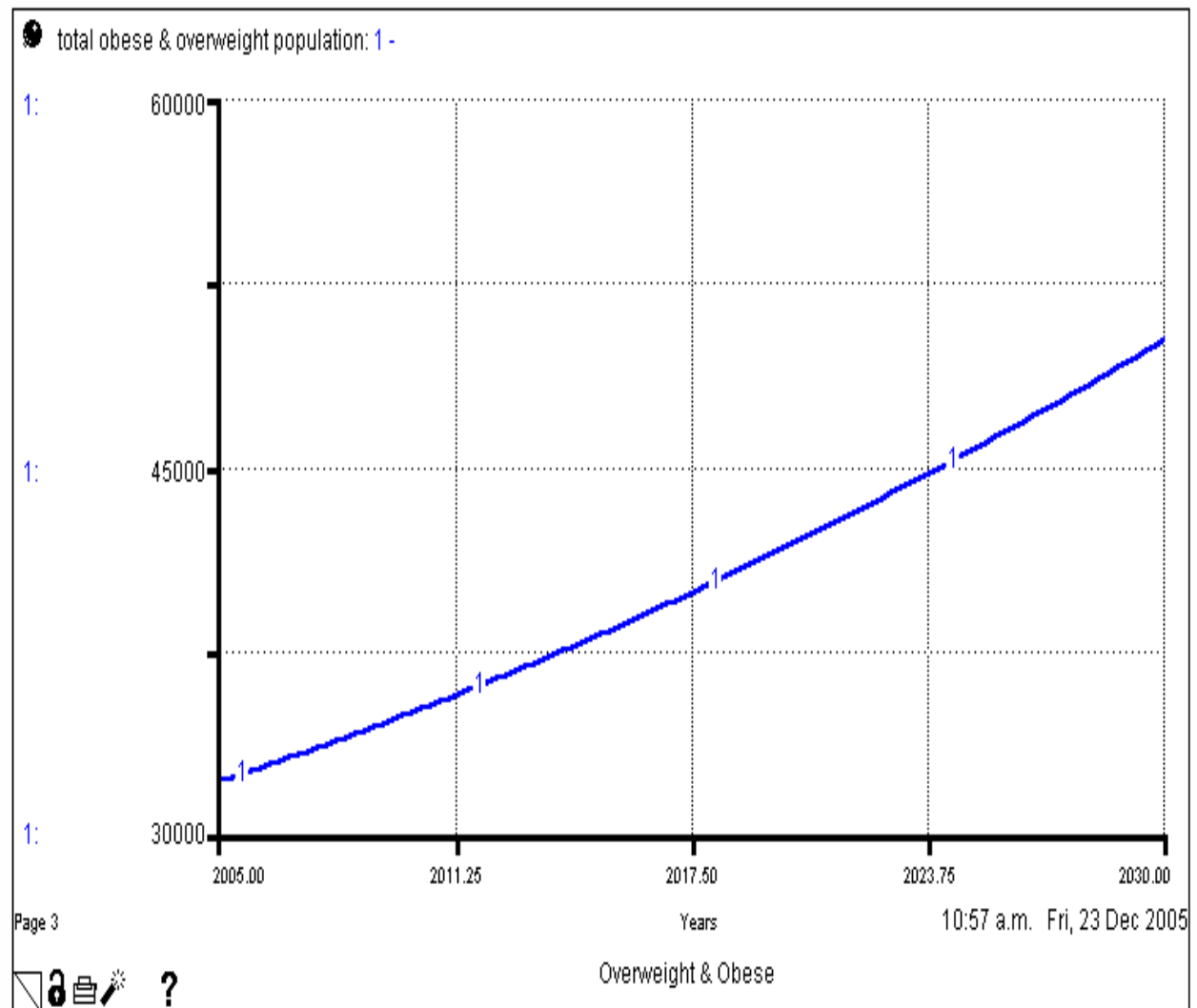
- Status Quo

Status quo – obese & overweight

Conservative est.
based on 2005 rates

Prevalence -
32,000 ... > 50,000

Incidence -
1,000.... > 1,800/yr

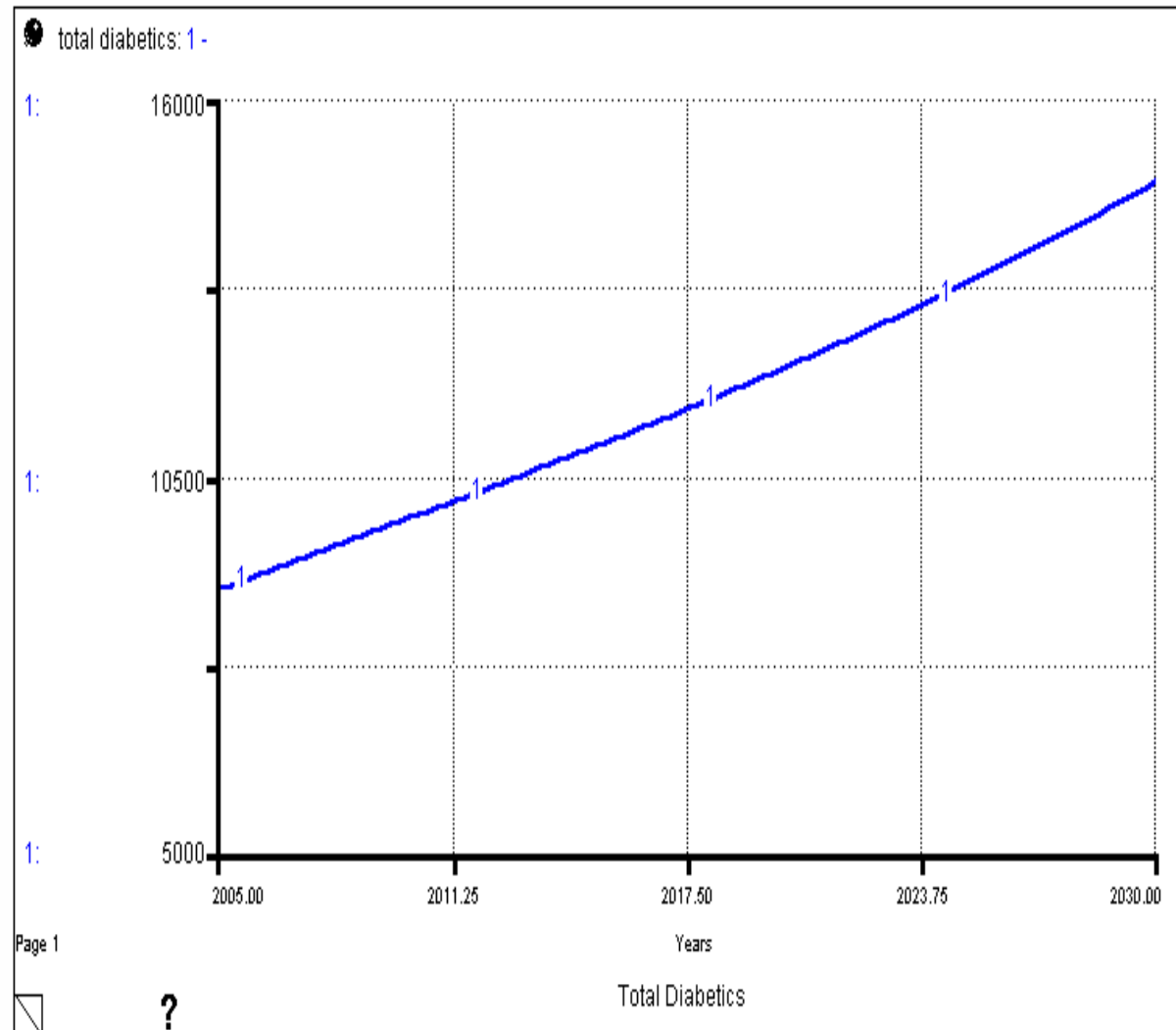


Status quo - diabetics

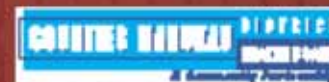
Conservative est.
based on 2005 rates

Prevalence -
8,000 > 15,000

Incidence -
452.... 830 per year



32,000 to 50,000

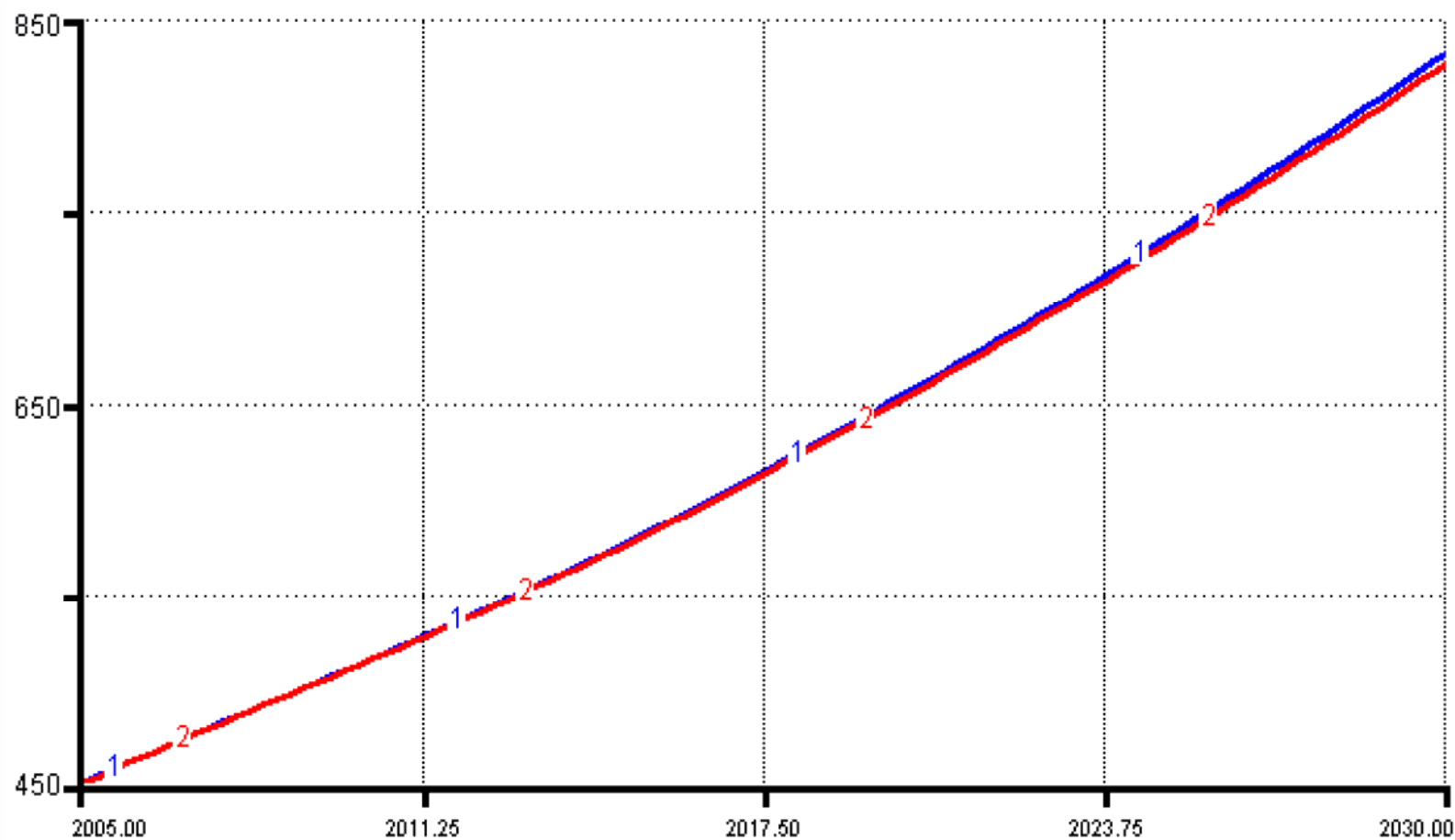


Scenario 2

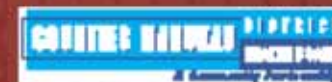
- Targeted health programmes – Children and youth
- \$ 40:00 per person per year
- 10% effective
- 500 children and 500 youth per annum
- Investment - \$ 40,000

Targeting 1000 Children & Youth

Impact on Diabetic Incidence

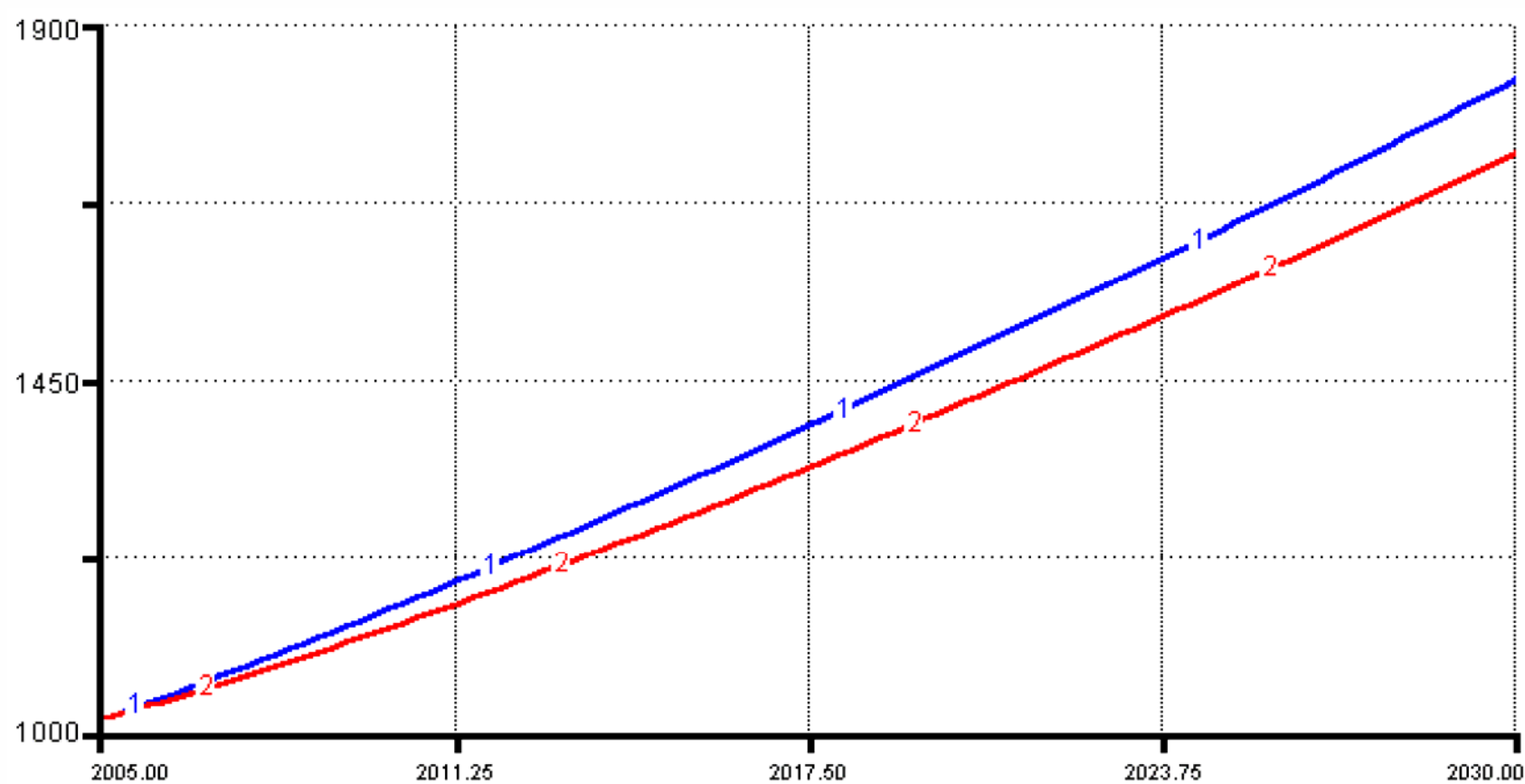


Investment - \$ 40,000



Targeting 1000 Children & Youth

Impact on Overweight and Obese Incidence

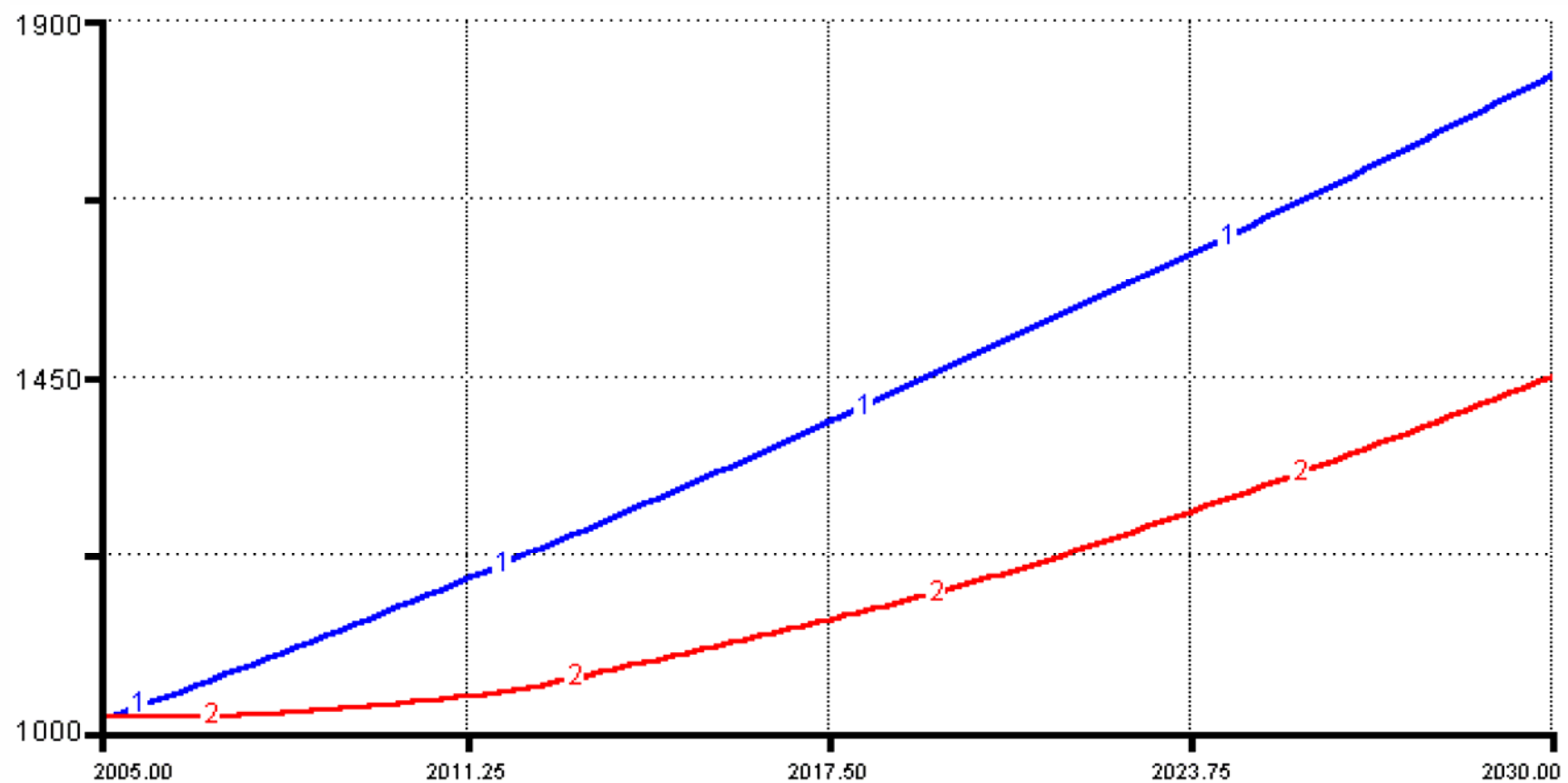


Investment - \$ 40,000



Targeting 5000 Children & Youth

Impact on Overweight and Obese incidence



Investment - \$ 200,000

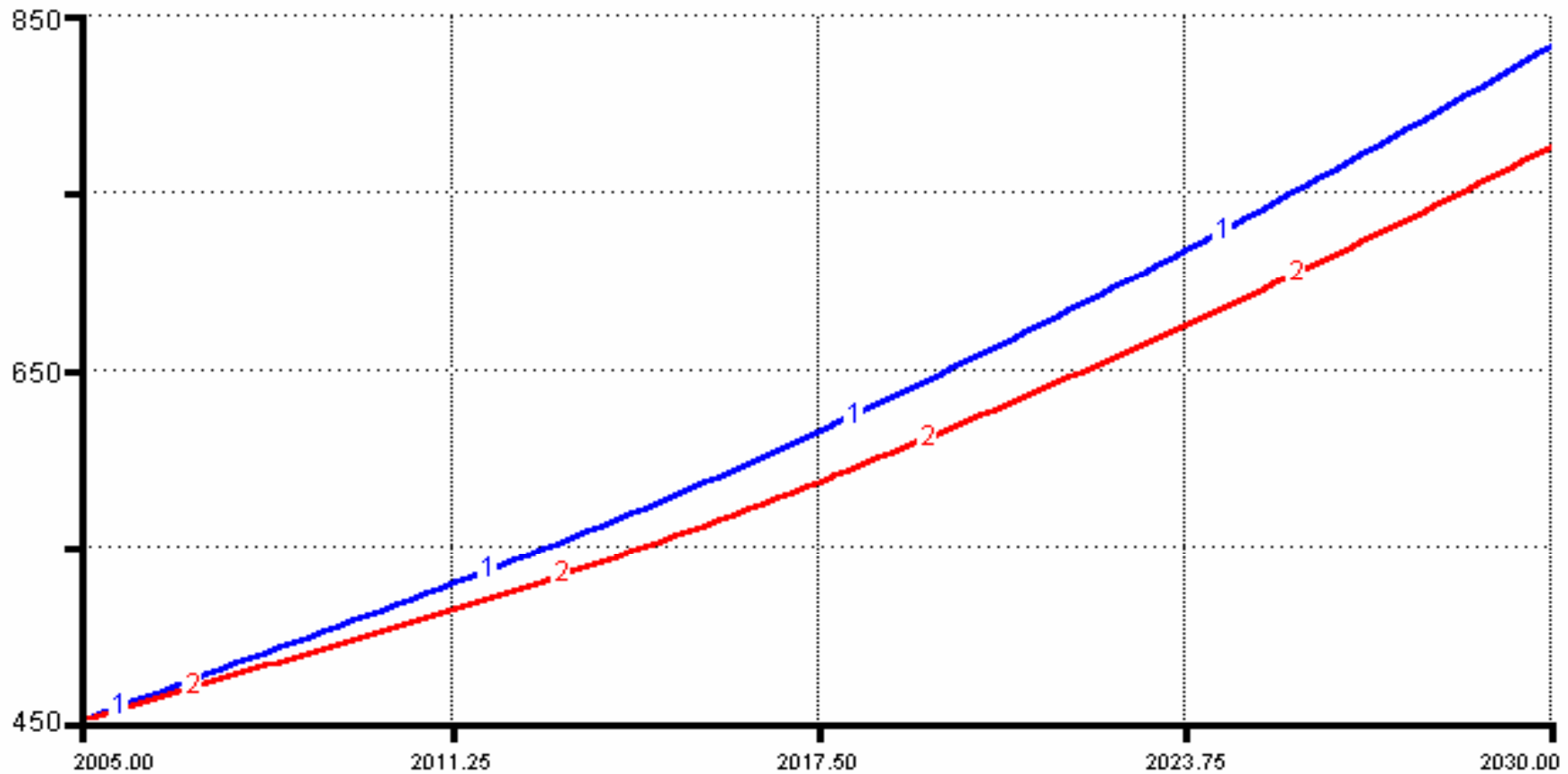


Scenario 3

- Targeted health programmes - Adult
- \$ 40:00 per person per year
- 10% effective
- 1000 adults per annum
- Investment - \$ 40,000

Targeting 1000 Adults

Impact on Diabetic Incidence

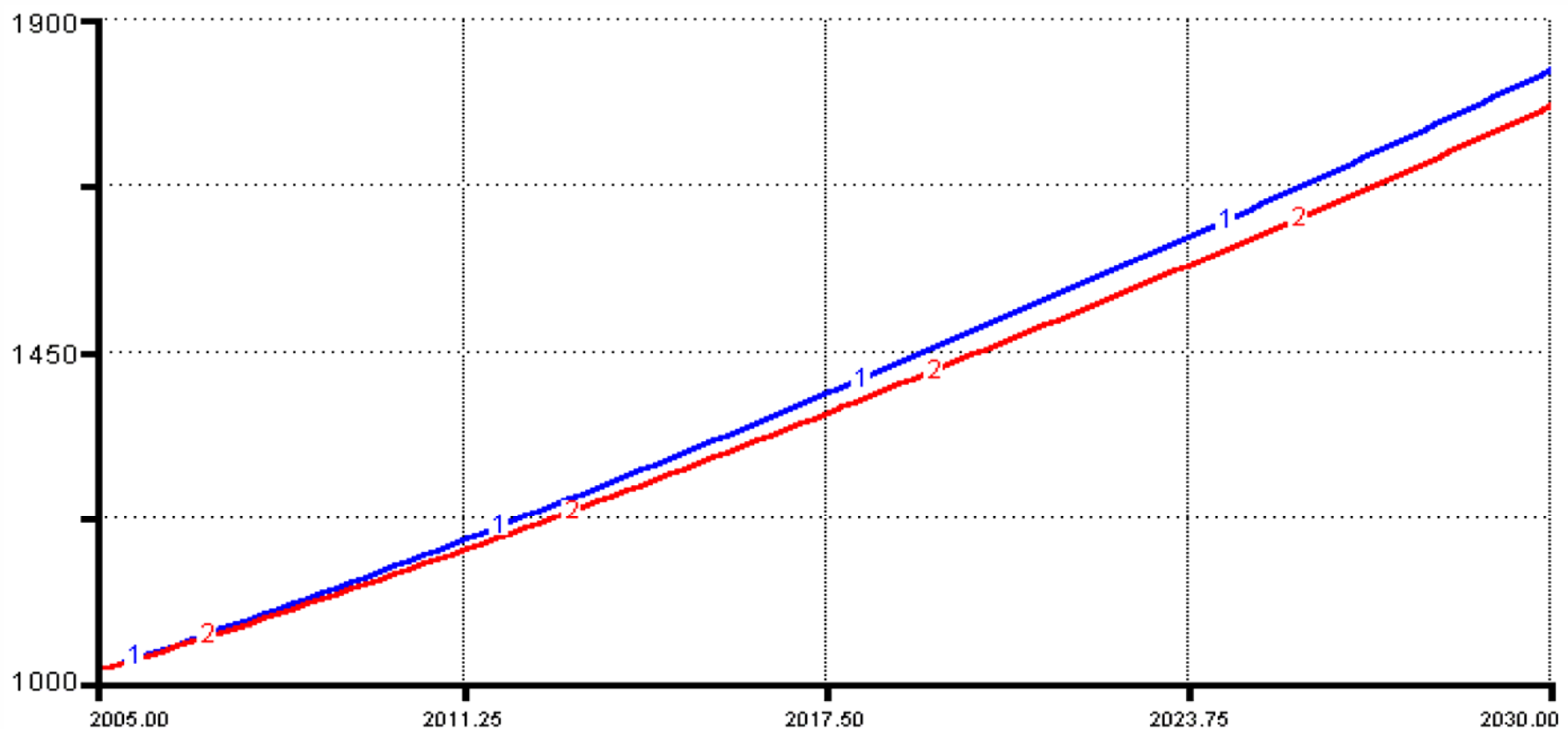


Investment - \$ 40,000

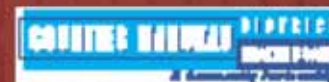


Targeting 1000 Adults

Impact on Overweight and Obese Incidence



Investment - \$ 40,000

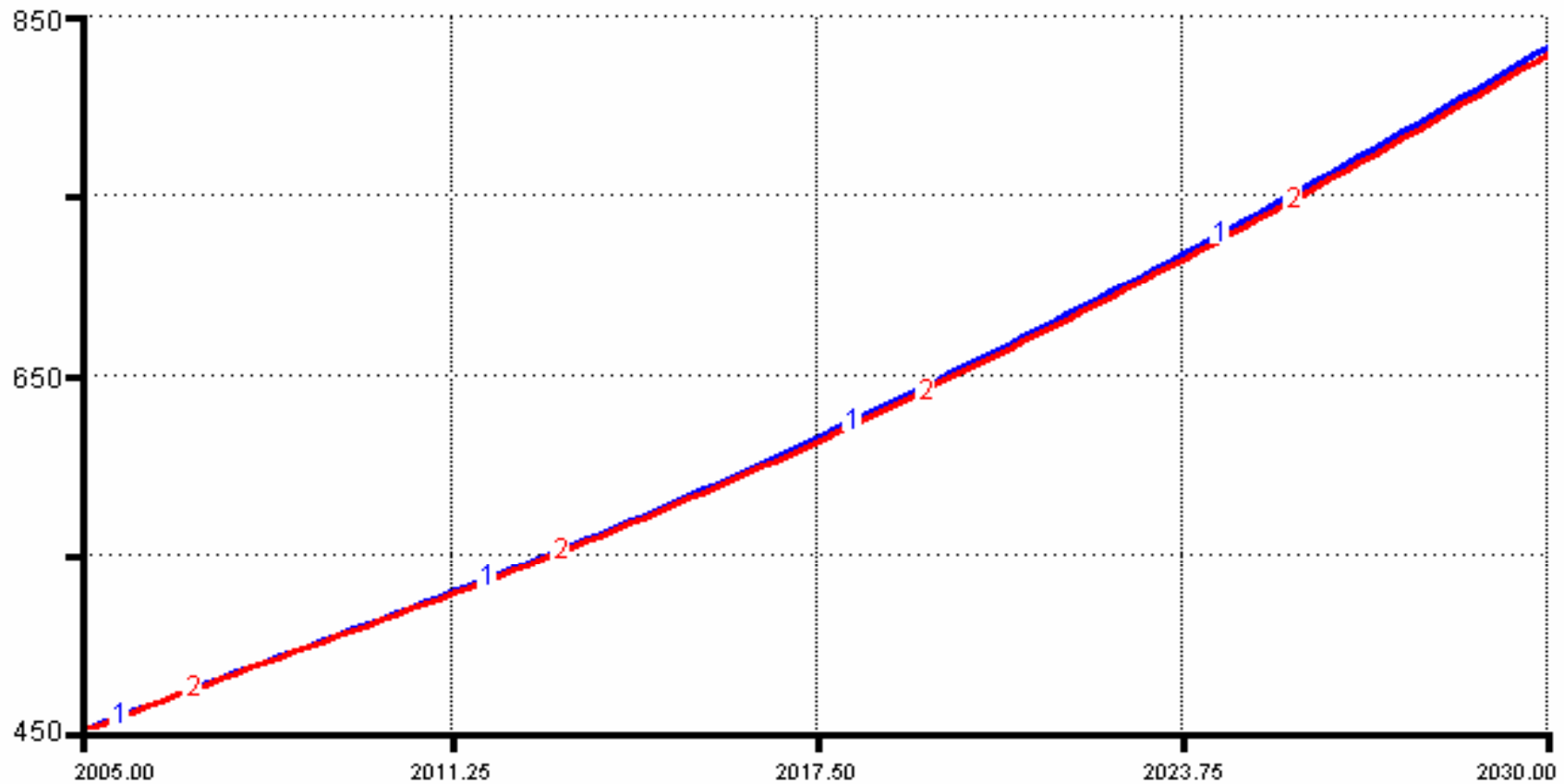


Scenario 4

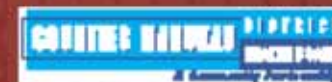
- Population health programmes
- \$ 1:00 per person per year
- 1% effective
- 100,000 people per year
- Investment - \$ 100,000

Population programmes - 100,000

Impact on Diabetic Incidence

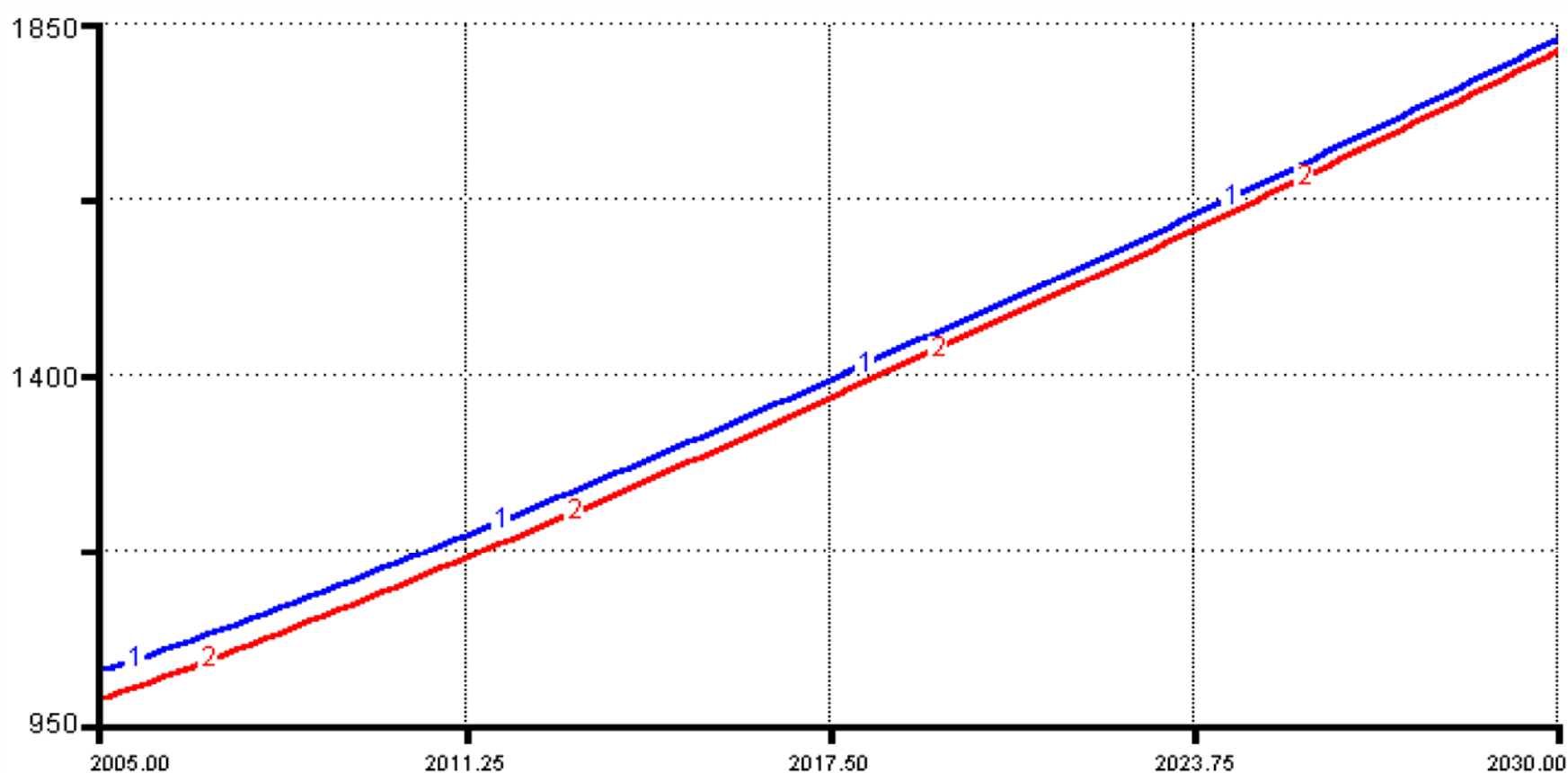


Investment - \$ 100,000

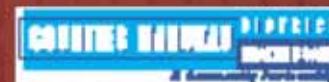


Population programmes – 100,000

Impact on Overweight and Obese Incidence

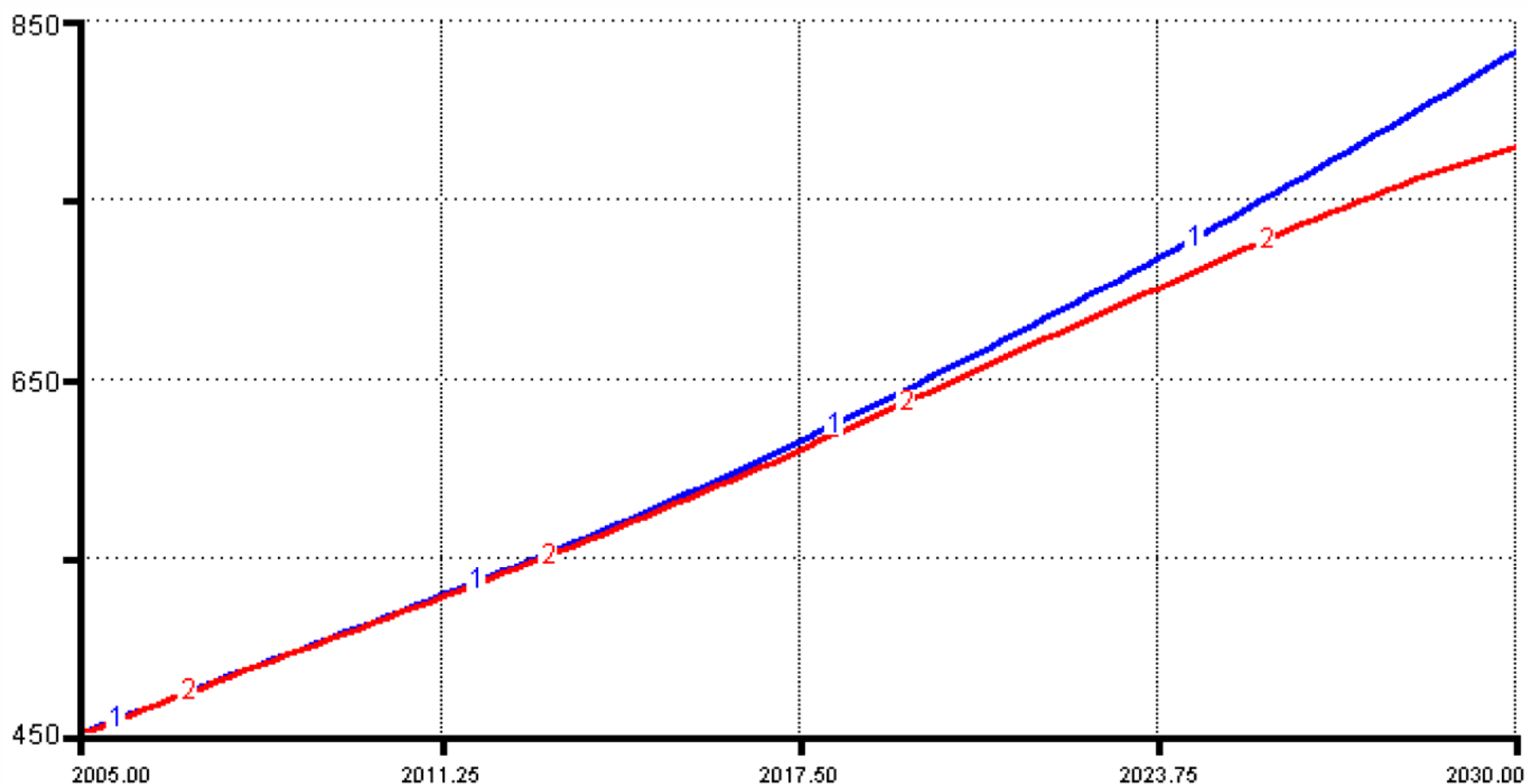


Investing \$100,000/year



Population programmes - effective

Impact on Diabetic Incidence

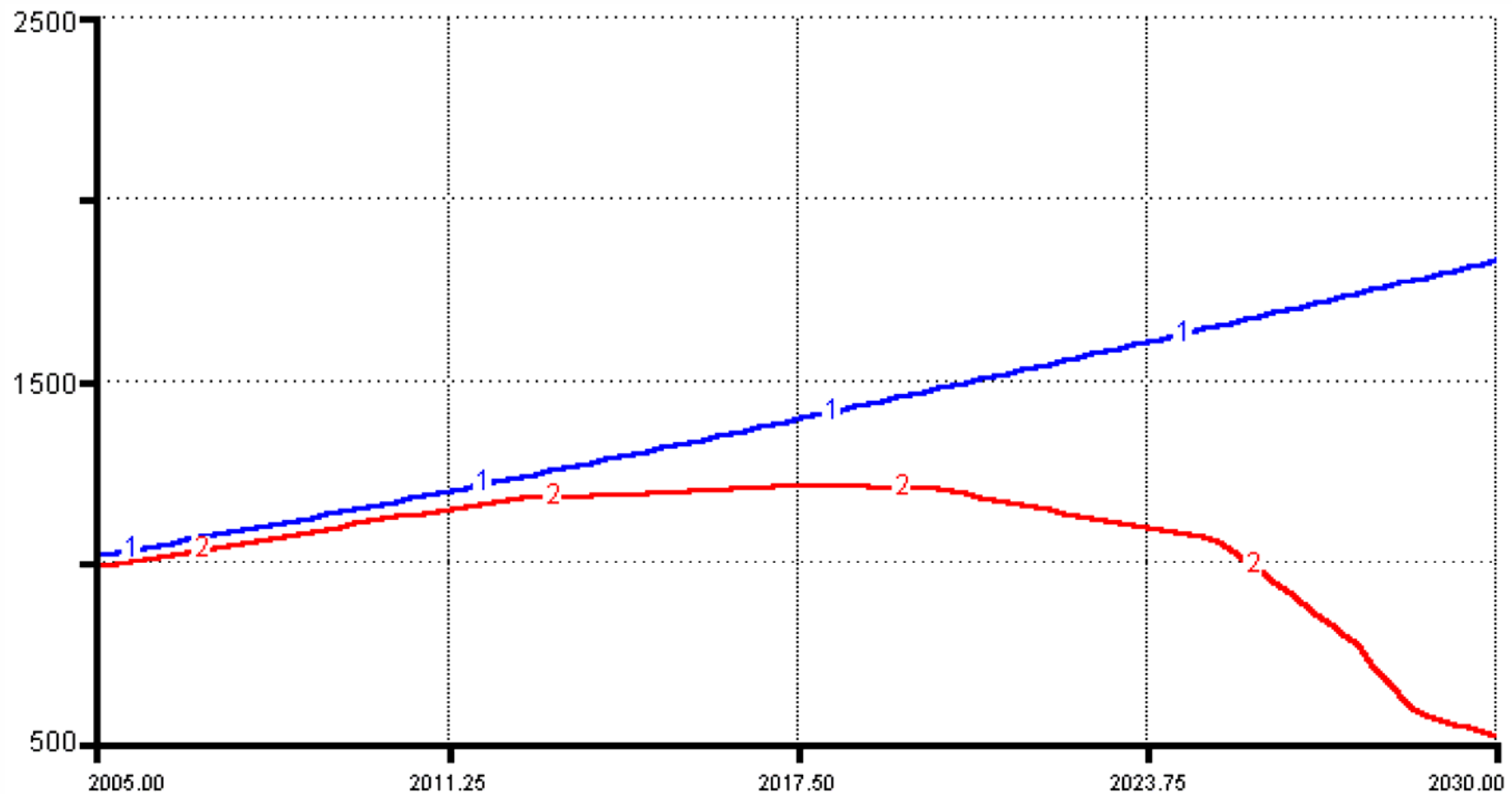


Building momentum to 50%

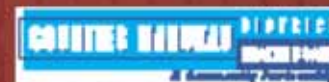


Population programmes - effective

Impact on Overweight and Obese Incidence



Building momentum to 50%

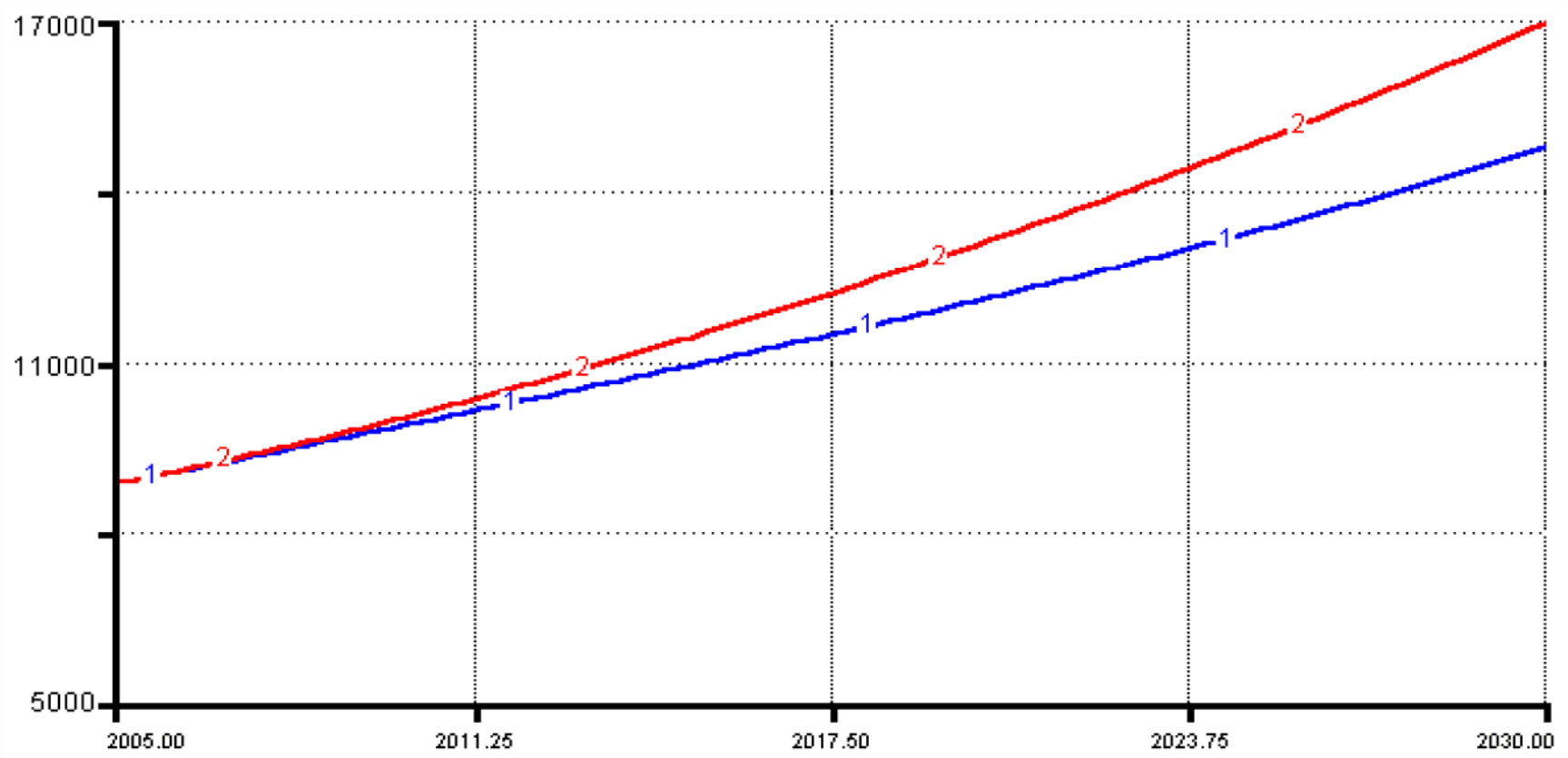


Scenario 5

- Working with the Diabetic population
- 50% diagnosed
- 50% diagnosed are in managed care
- No change in rate of flow
- Investment - 6,000 x \$ 2,000

Screening and Post Dx. management

Impact on Diabetic population - prevalence

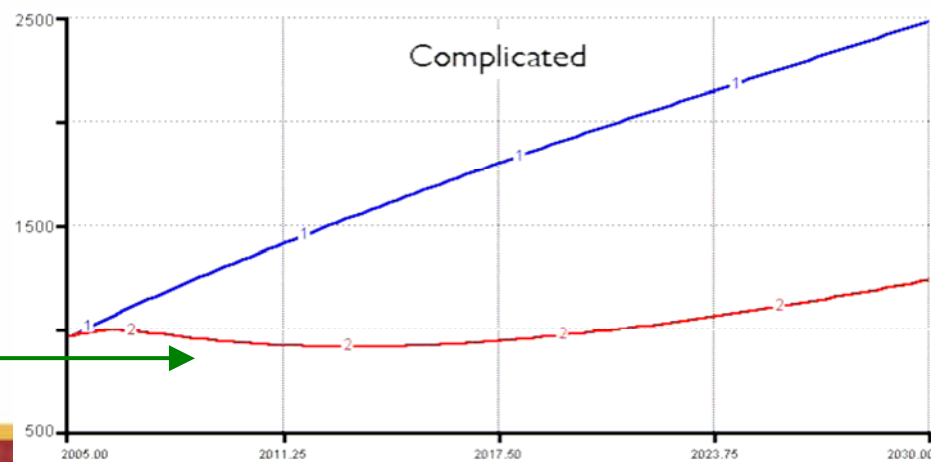
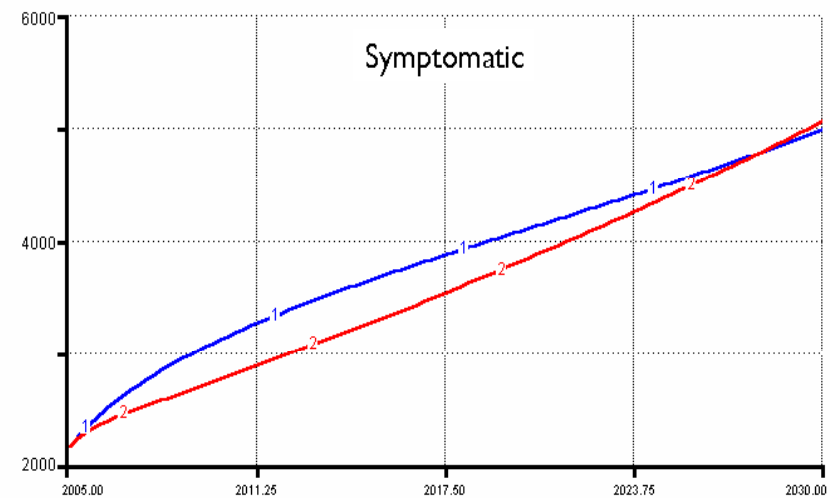
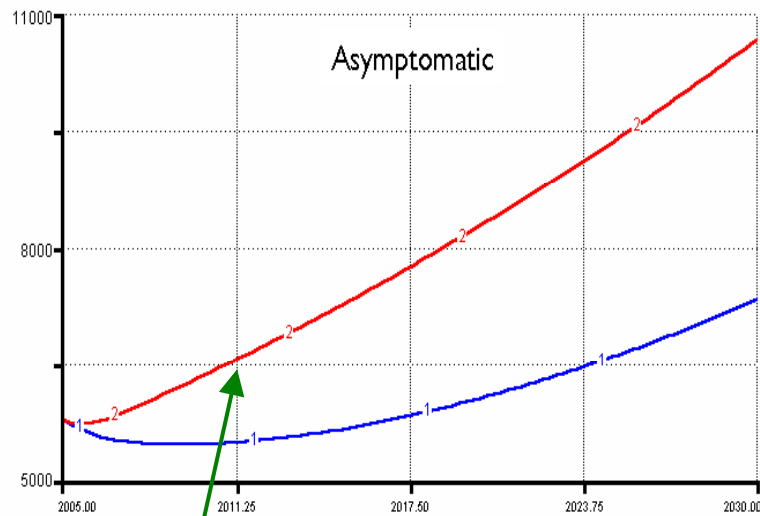


100% effective



Screening and Post Dx. management

Impact on nature of Diabetic population



Change

Summary

- Difficult to shift trend for DM prevalence
- Effective screening and post diagnosis management can change nature of DM population
- Target – youth – impact obesity
- Target – adults – impact diabetes
- Population programmes - require long term commitment to impact current trends
- Benefits – for other chronic diseases ..