Views of US insurance companies (payers) on the polypill

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Companies interviewed

Organisation	Lives covered	Annual revenue
UnitedHealth Group	70m	$100b
Aetna	17m	$32b
Wellpoint	34m	$61b

Proviso

- None of the companies have a formal policy on the polypill. These were informal conversations with senior doctors in the companies.
- All took roughly the same position

Findings

- All aware of the polypill
- None had spent any serious resources investigating the polypill
- Suspicious of combination therapy in that it might be a way for drug companies to repackage drugs to maintain or even increase revenue without advantages to patients
- All were nervous of “leading”—by, for example, producing reports urging widespread adoption of the polypill
- All wanted to wait for bodies like the American Heart Association or the US Preventive Task Force to take the lead

Findings

- None would approach the FDA to encourage licensing of the polypill
- None would be willing to commit to an advance mass purchase of the polypill
- “Isn’t the job of payers to try and get maximum benefit from expenditure on healthcare?” Yes, but cautiously. Anxious about being seen to push particular lines.
- One company said that if there was a suggestion of substantial savings they might try to be more active in promoting the polypill—but no such sign yet
- Many people are taking the component drugs already. Would there really be savings?

Findings

- One company said it might be more interested in a polypill for patients with the metabolic syndrome, one perhaps that included metformin
- One company was most interested in the “radical idea” of everybody starting to take the polypill at 55 and then having minimal medical supervision
- All wanted more evidence of the polypill for primary prevention—an RCT with major cardiac events as the outcome measure
- If the FDA approves a polypill for secondary prevention they would all be willing to pay for it unless it was more expensive than the individual pills

Findings

- If it was more expensive they would want evidence of improved value—perhaps improved adherence
- If it did seem that the polypill was more cost effective than current treatments they might cautiously promote the drug to patients/members and physicians
- If the FDA approved the polypill for secondary prevention then the companies would probably not stand in the way of physicians prescribing it for primary prevention

Conclusion

- US insurance companies are unlikely to take the lead in promoting mass use of the polypill

The potential impact of the polypill on the US population: an Archimedes simulation

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A very big thank you to Archimedes for letting us run the model for free and to Peter Alperin for running the model

Apologies in advance for all that I get wrong

Archimedes basics

- A model of the US population and health system
- Built from carefully validated data on pathophysiology, interventions, patient and physician behaviour, and the US health system, including costs
- Has been widely used (including by Kaiser Permanente) and published in journals
- “Perfect” for modelling the likely effects of the polypill

Modelled populations

- Everybody over 55
- People with history of CVD
- Diabetics
- Everybody over 50 with no history of CVD
- Everybody over 55 with no history of CVD
- POLYPILL MODELLED IN ADDITION TO PRESENT CARE

Current drug use in two populations

Drug	People over 55	People with history of CVD
Antihypertensive	46%	85%
Aspirin	48%	50%
Statin	27%	45%

Model: initial assumptions

- Results from three polypill trials used:
  - TIPS1 and TIPS2 data used for FDA submission
  - Polypill Prevention Trial (with aspirin added by the model) as giving “best” results
- Polypill was given on top of background care (but patients were not double dosed)
- Polypill cost $0.10/day
- Initial analysis was based on observed results in the trials (~80% adherence in TIPS trials; ~100% in PPT)
- Time course 20 yrs
- Assumed 3% discount rate for costs

Polypill components

- TIPS 1. Polycap
  - thiazide (12.5 mg)
  - atenolol (50 mg)
  - ramipril (5 mg)
  - simvastatin (20 mg)
  - aspirin (100 mg)
- TIPS 2
  - Double dose of TIPS 1 plus potassium
- Polypill Prevention Trial
  - amlodipine (2.5 mg)
  - losartan (25 mg)
  - hydrochlorothiazide (12.5 mg)
  - simvastatin (40 mg)

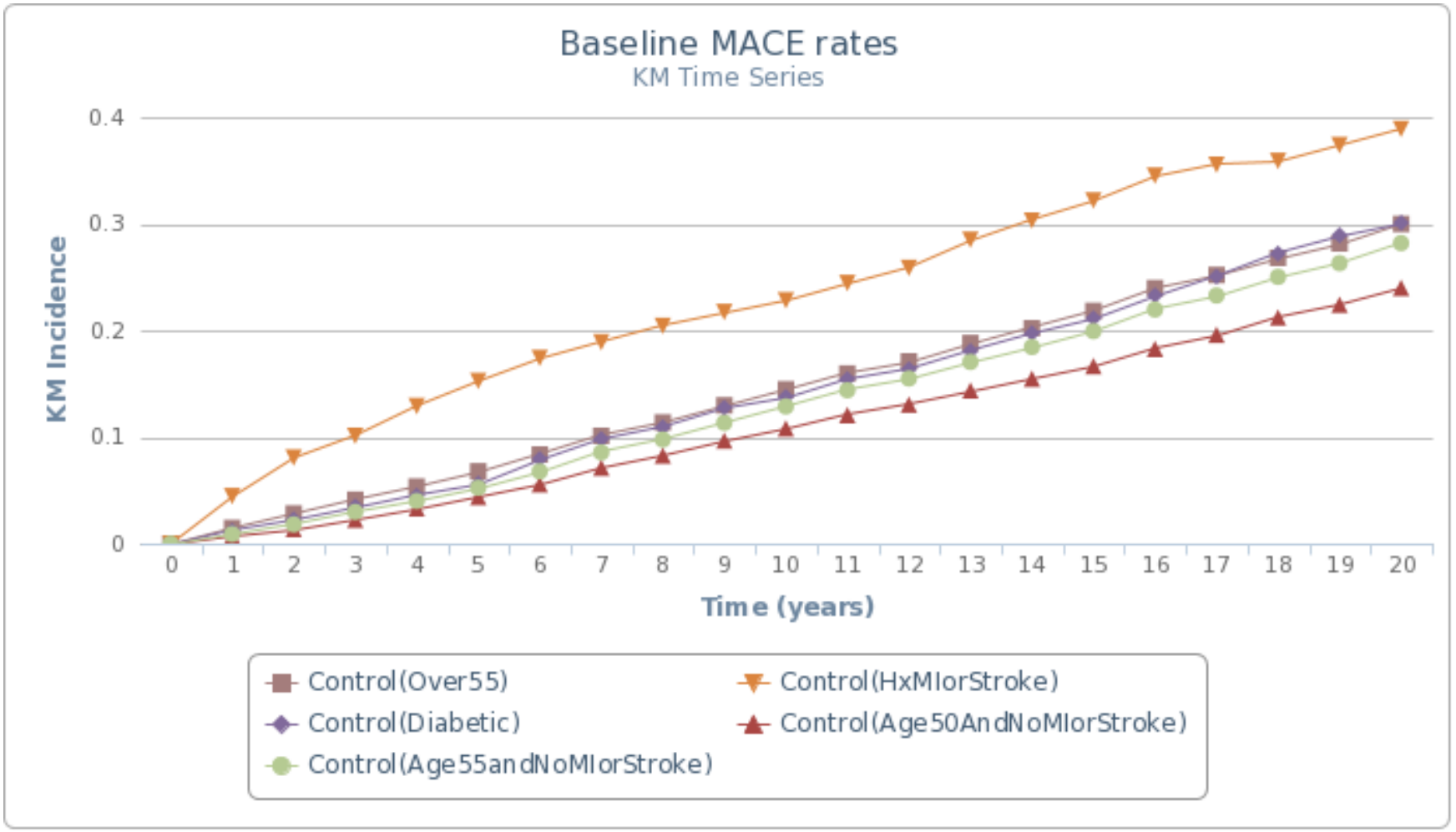
Effects observed in the trials

Trial	**LDL reduction (mmol/l)**	**Systolic BP reduction (mmHg)**
TIPS 1	0.7	7.4
TIPS 2	0.87	10.2
PPT	1.4	17.9

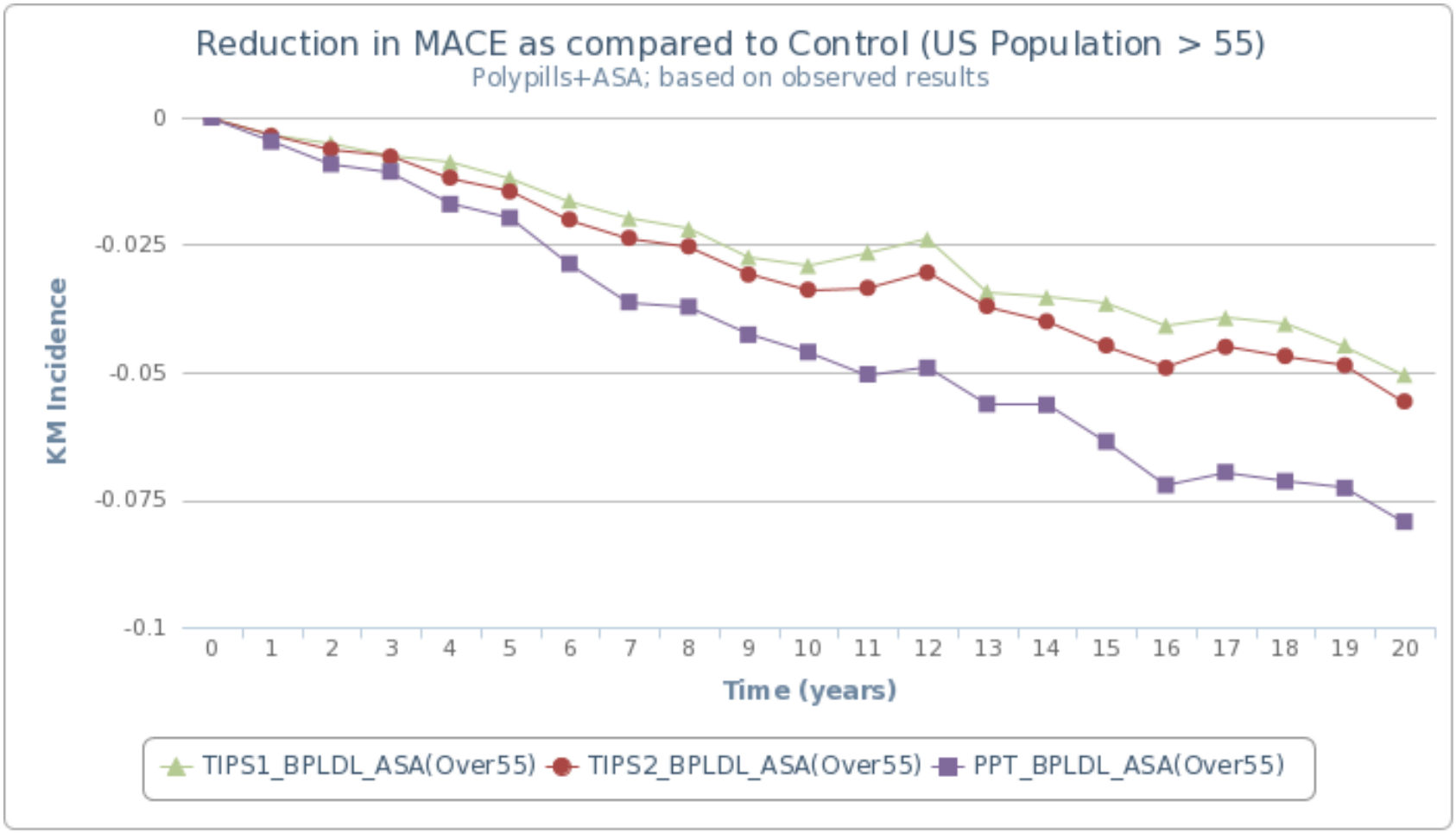
Baseline data on major acute cardiac event (MI, stroke, death) over 20 years

Group	Percentage of population	Incidence of MACE (%)	Percentage of total MACE
Over 55	25	30	53
Over 50 no CVD	33	24	57
Over 55 no CVD	22	28	45
Diabetic	8.5	30	18
History of CVD	4	39	11

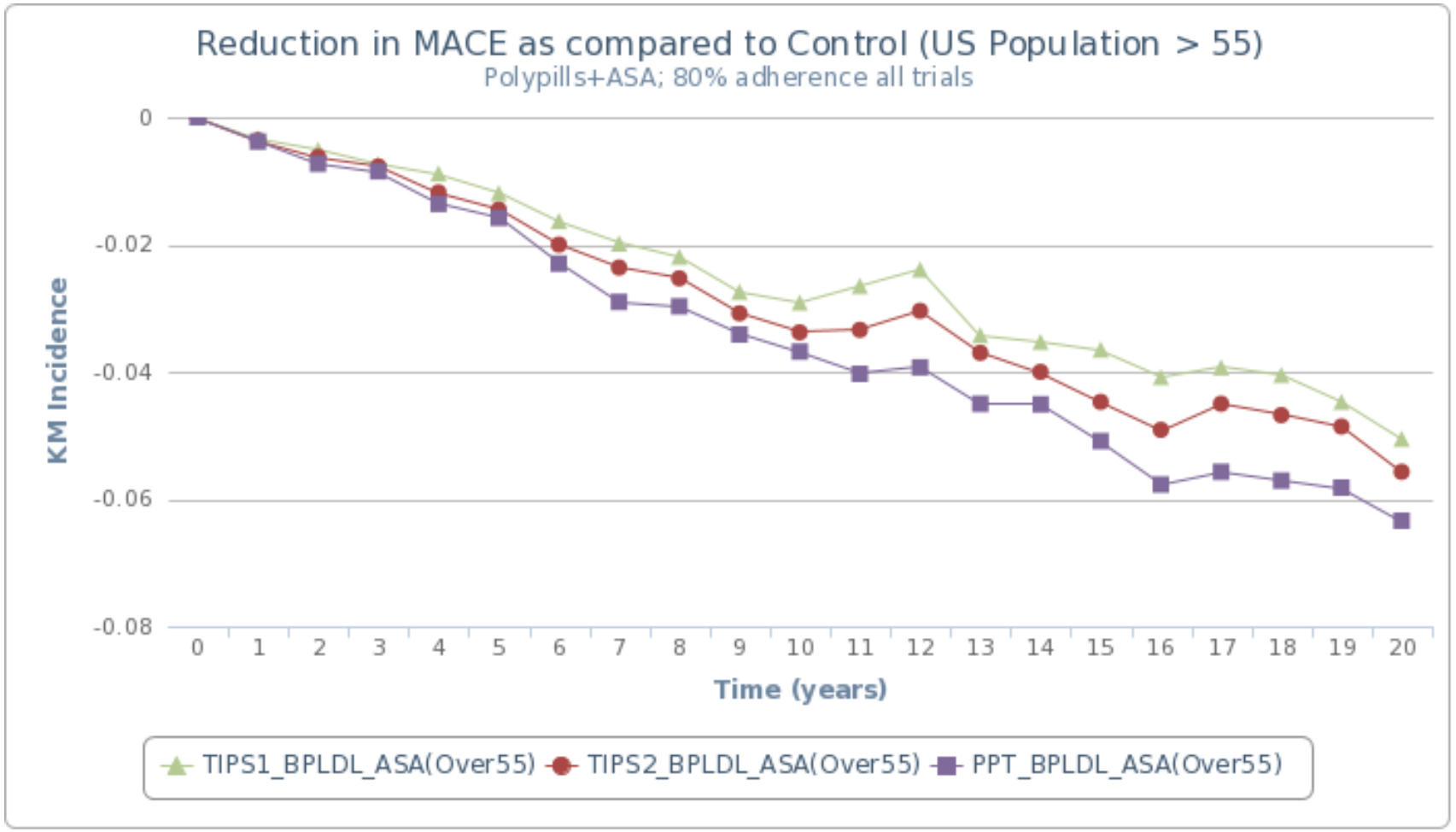
Major Acute Cardiac Events: Baseline Rates



Incremental impact of polypills compared to usual care on MACE: adults > 55 (based on observed results)



Incremental impact of polypills compared to usual care on MACE : adults > 55; adjusted for similar adherence in PPT compared to TIPS (i.e. 80% in all trials)



Discounted overall health costs per 1000 US population over 55 over 20 years for (80% adherence)

Group	Costs per 1000 people ($m)	Reduction (%)
Control	127	
TIPS 1	-7	6
TIPS 2	-9	7
PPT	-10	8

Effect on overall costs of different levels of adherence for 1000 adults over 55 over 20 years (total $127m)

	40%	60%	80%	100
TIPS 1	-2.8	-4.3	-5.7	-7.1
TIPS 2	-3.4	-5.2	-6.9	-8.7
PPT	-5.1	-7	-10.3	-12.9

Effect on overall costs of different prices for the polypill for 1000 adults over 55 over 20 years, 80% adherence (total $127m)

Cost of polypill ($)	0.05	0.1	0.25	0.5	0.75	1.00
TIPS 1	-7.4	-7.1	-6.5	-5.4	-4.2	-3.1
TIPS 2	-8.9	-8.7	-8	-6.9	-5.7	-4.6
PPT	-10.5	-10.3	-9.7	-8.9	-7.9	-7.0

Summary and Conclusions

- All ranges of published values of risk factor reduction for the polypill lead to significant reductions in major acute coronary events (MACE)
- All tested arms were cost saving at 10 and 20 years, in adults over 55
  - With 80% adherence and cost of $0.10, cost savings started by year 2 in all arms (data not shown)
- The cost savings were moderately sensitive to both cost and adherence but the simulations predicted meaningful cost savings even with pessimistic estimates of cost and adherence

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