



Quantitative Benefit Harm Assessments: Considering patients' preferences to inform medical guidelines and improve decision making and health care

Schweizer Statistiktage 2018

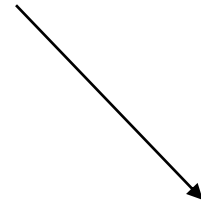
Hélène Aschmann, Cynthia Boyd, Craig Robbins, Dominik Menges, Milo Puhan, on behalf of the PCORI project team "Informing Patient Centered Care for People with Multiple Chronic Conditions"



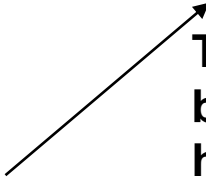
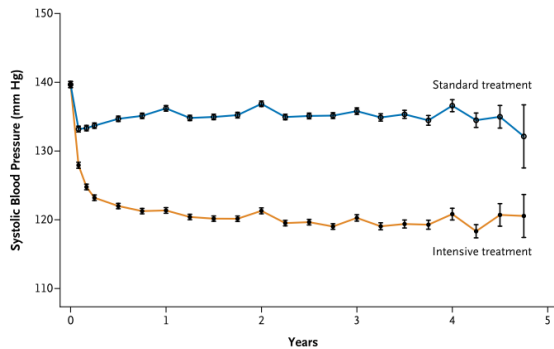
How are evidence based health care decisions made?



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Clinical practice guideline



Trade-off of benefits and harms

Data

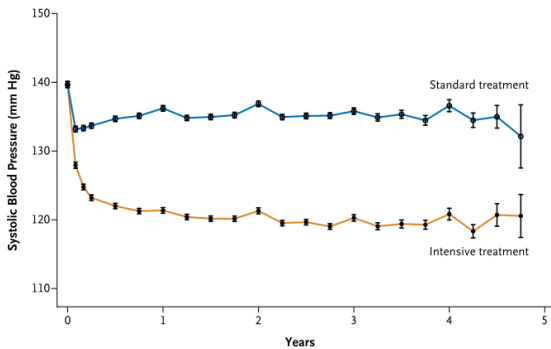
How are evidence based health care decisions made?



GRADE



Clinical practice guideline

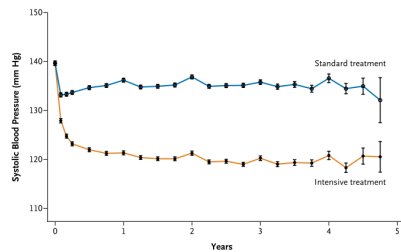


Trade-off of benefits and harms

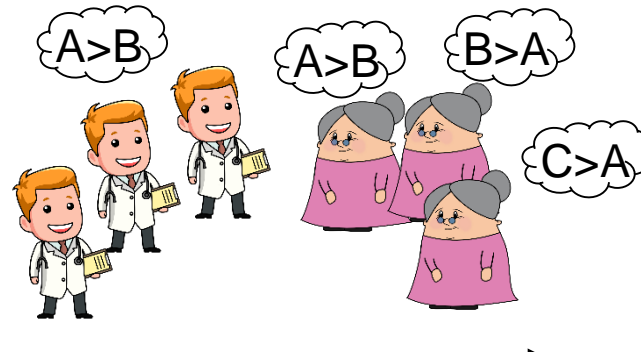
Data

Do preferences matter?

- Critical health outcomes?
- Benefits > harms?
- Confidence?
- Variation?

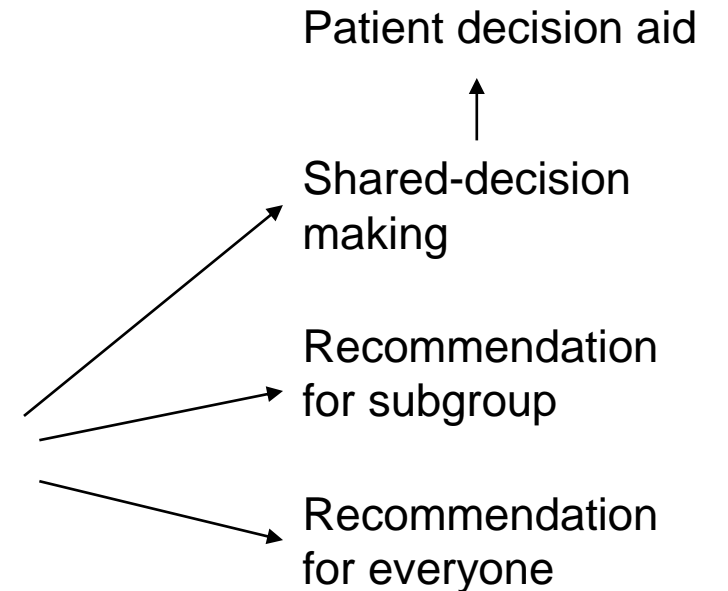


Evidence synthesis



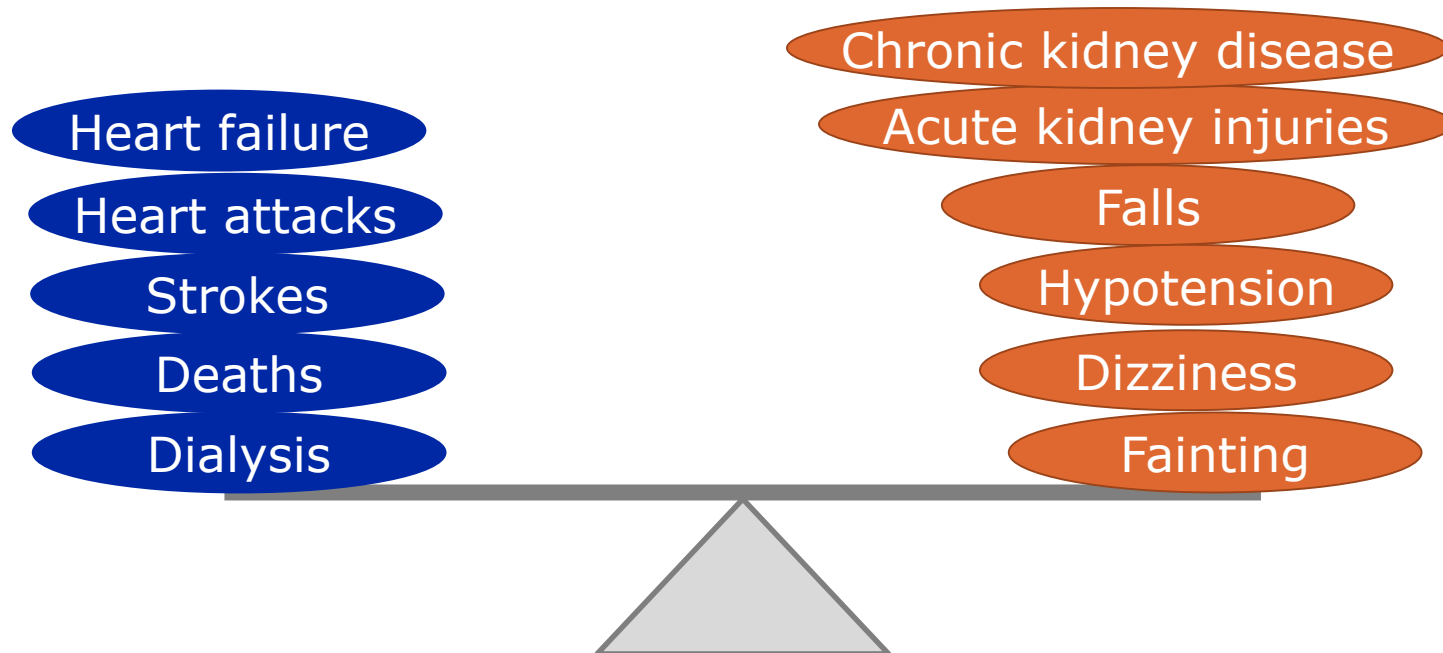
Guideline panel

Clinical practice guideline



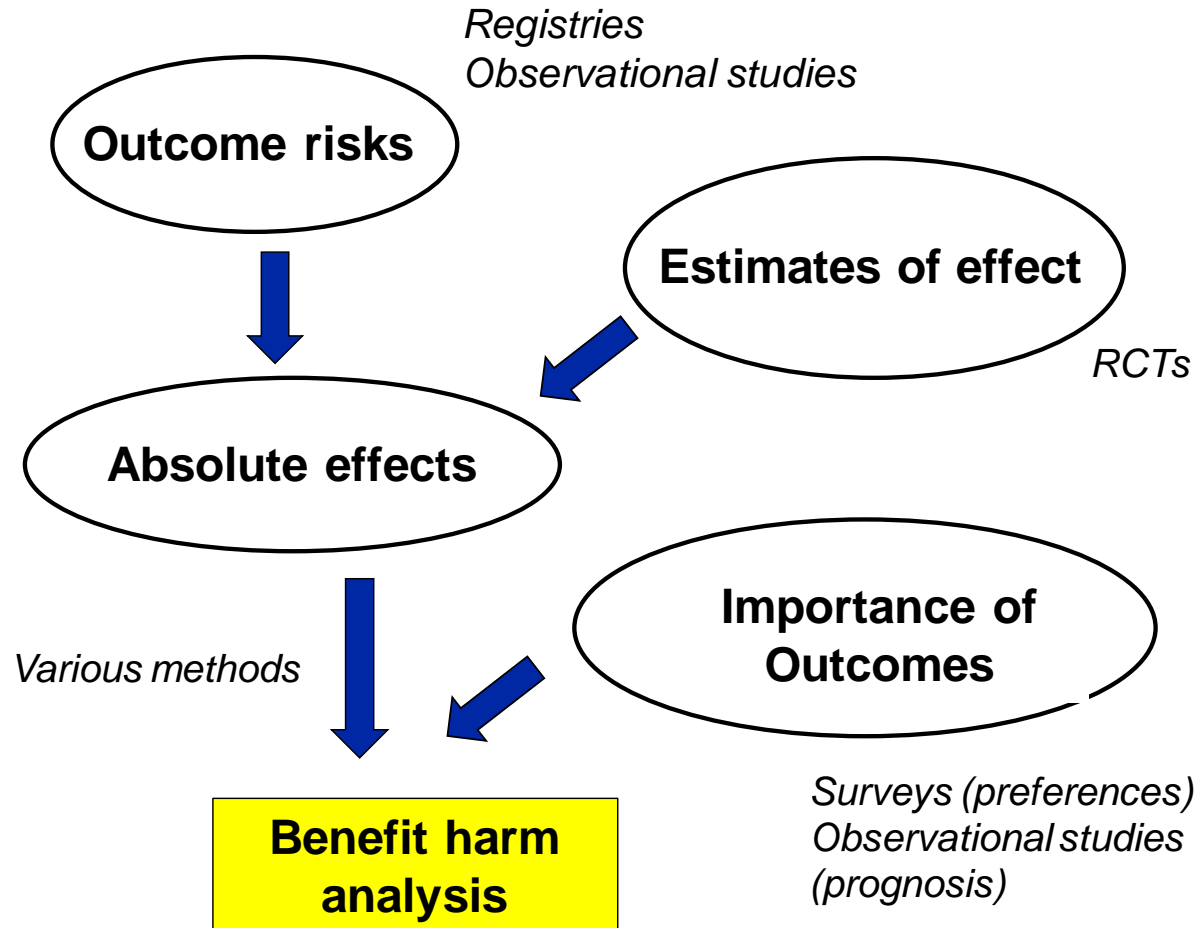


Engaging stakeholders to inform patient-centered guidelines: Blood pressure targets? Subgroups?

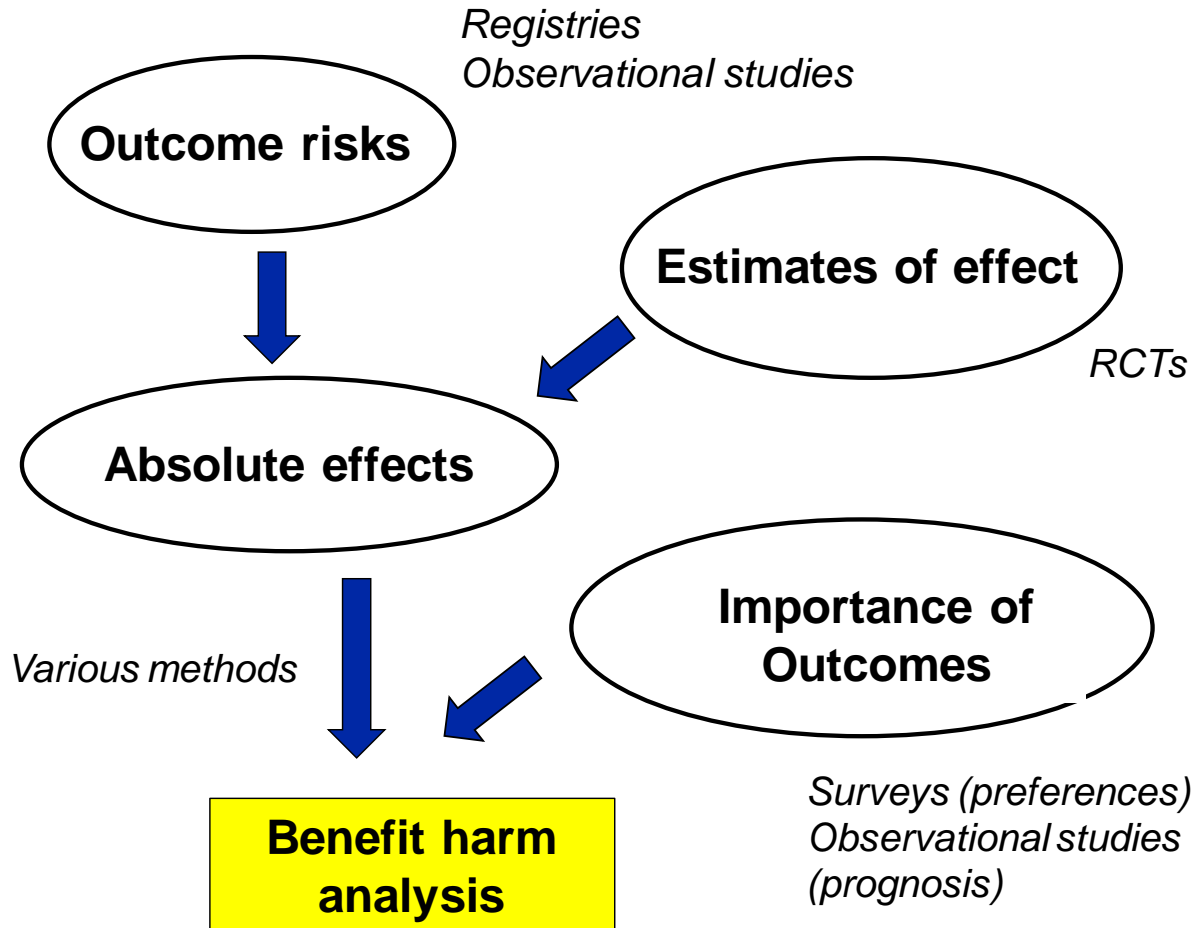




What are benefit harm assessments?



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Example: Number of events in 10000 people aged 50-64 over 5 years

Target	N ₁₄₀	N ₁₂₀	ΔN	weight
Death	361	281	+80	1
Heart attack	187	158	+29	0.66
Heart failure	195	131	+64	0.65
Stroke	104	91	+13	0.76
Dialysis	50	32	+18	0.47
Kidney disease	126	244	-118	0.45
Kidney injury	194	332	-138	0.33
Hypotension	253	463	-210	0.01
Fainting	292	424	-132	0.11
Injurious falls	528	535	-7	0.02

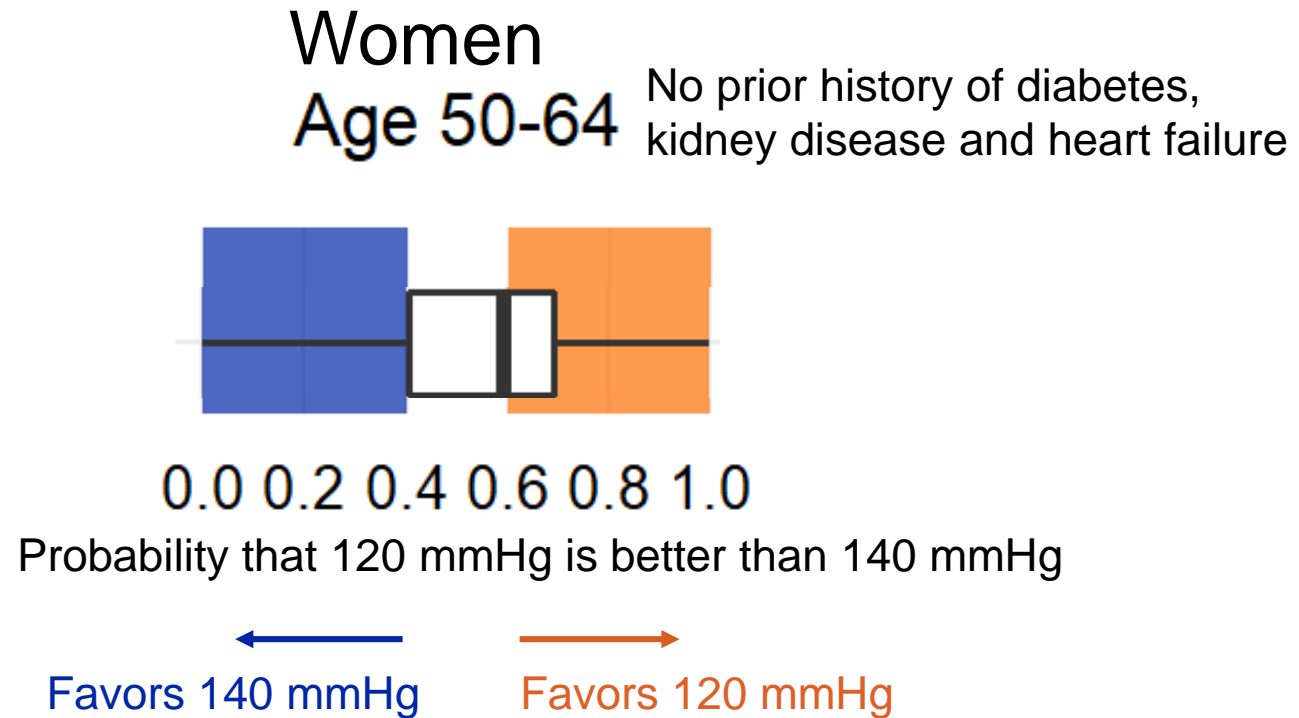
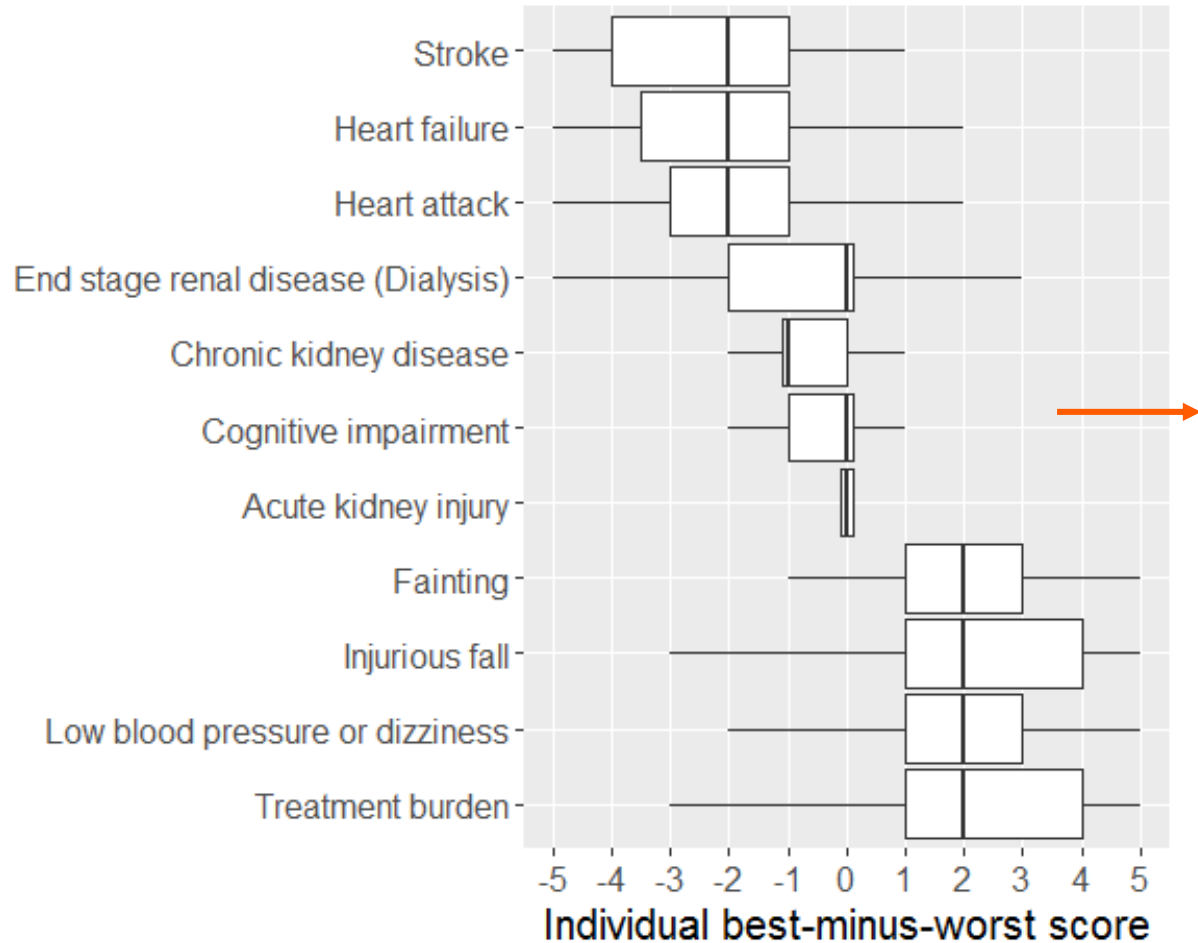


Eliciting preferences using best-worst scaling

Problem	Most worrisome (choose one)	Least worrisome (choose one)
Acute kidney injury	<input type="checkbox"/>	<input type="checkbox"/>
Low blood pressure with dizziness	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fall	<input type="checkbox"/>	<input type="checkbox"/>
Cognitive Impairment	<input type="checkbox"/>	<input type="checkbox"/>
Heart failure	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The person who answered this question is **most worried about "heart failure"** and **least worried about "low blood pressure with dizziness"**.

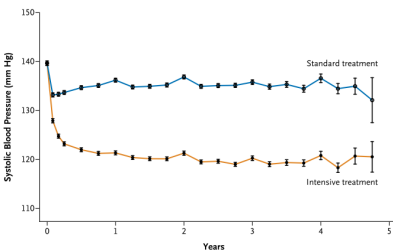
Which blood pressure is better depends on individual preferences



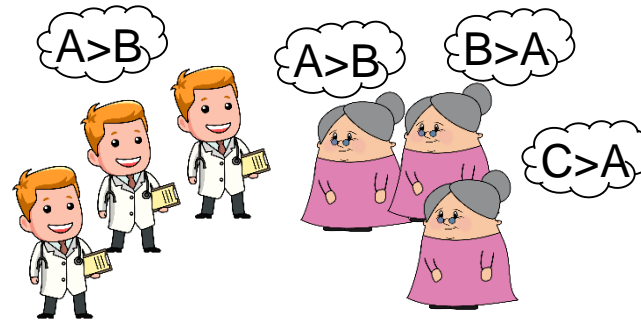
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Patient preference surveys

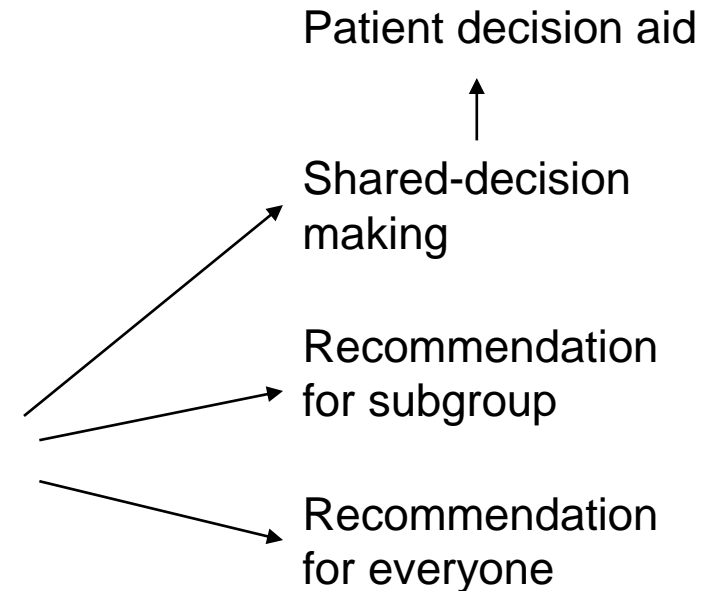


Evidence synthesis

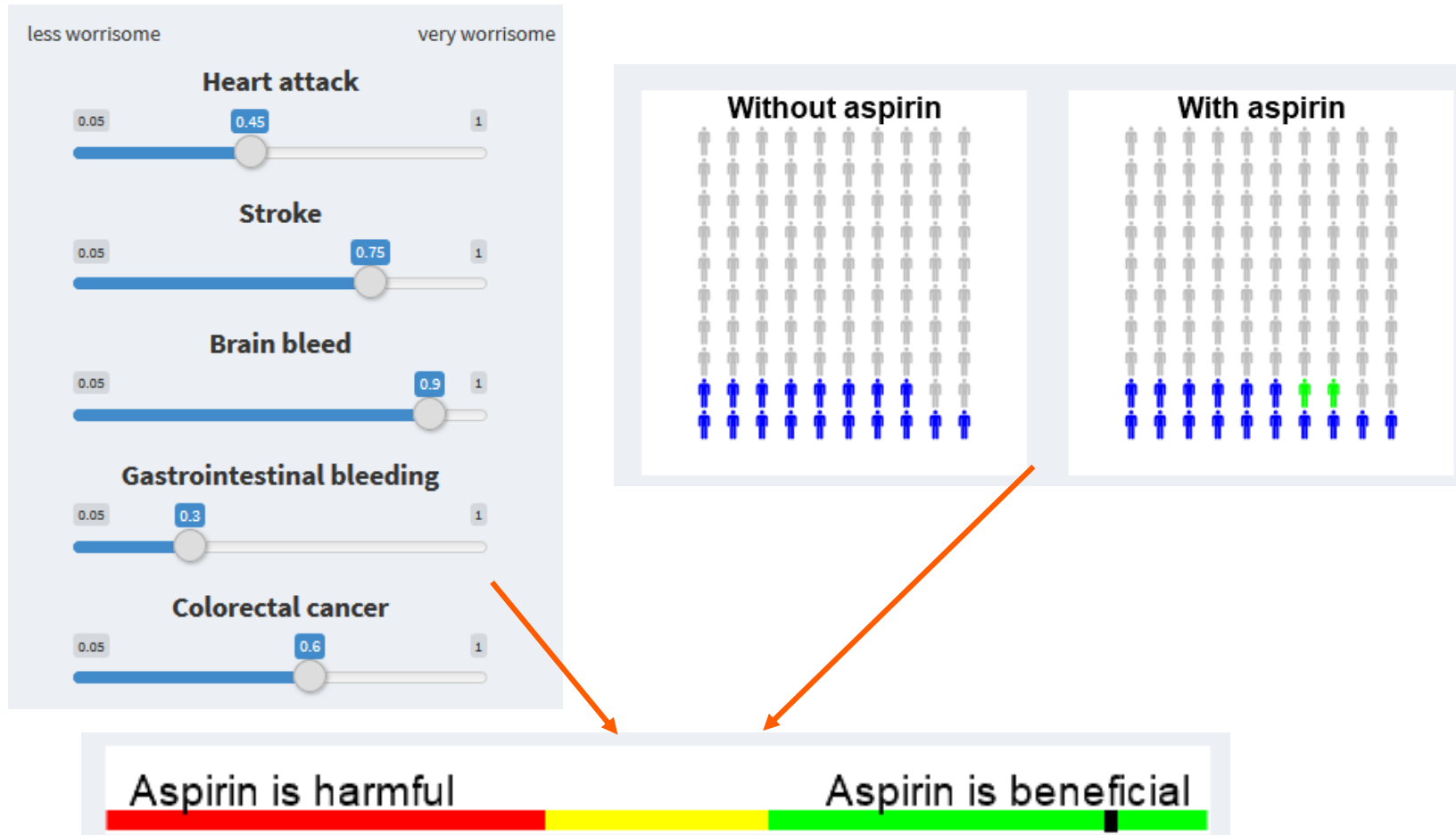


Guideline panel

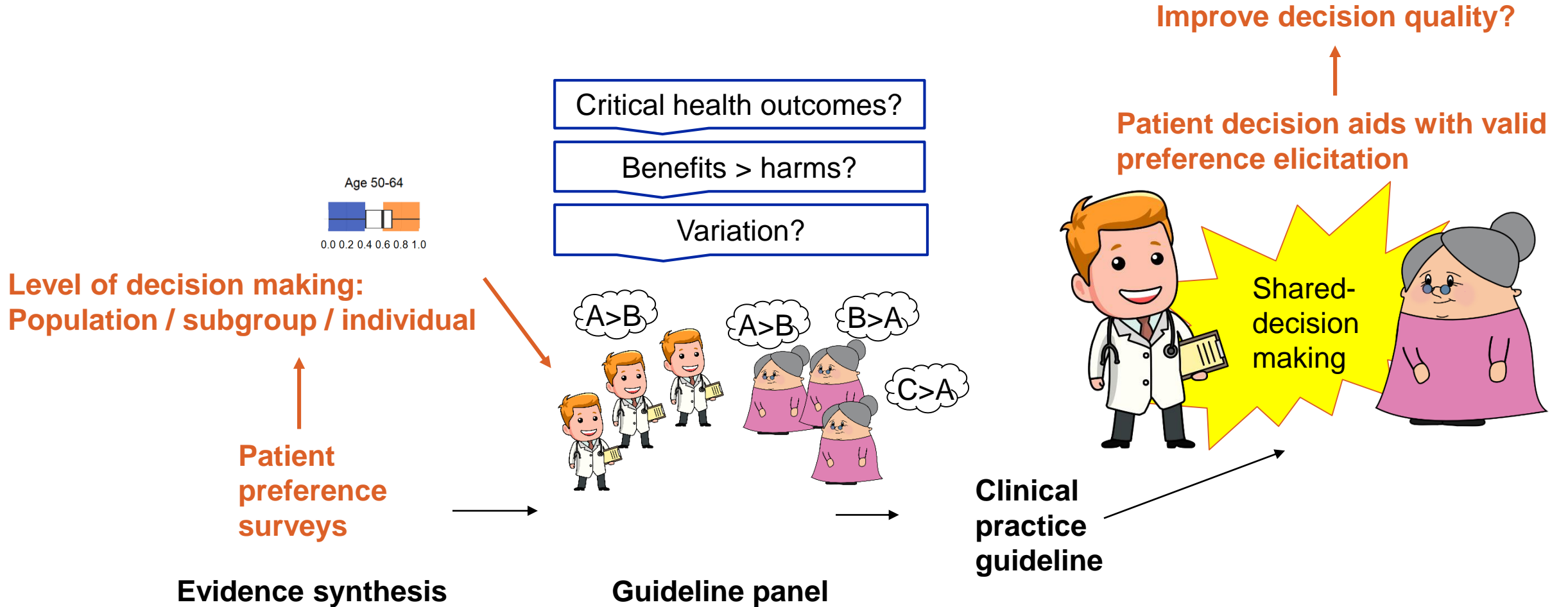
Clinical practice guideline



Shared decision making – Aspirin for primary prevention of CVD as an example



Conclusion: How to integrate patient preferences in health care decisions



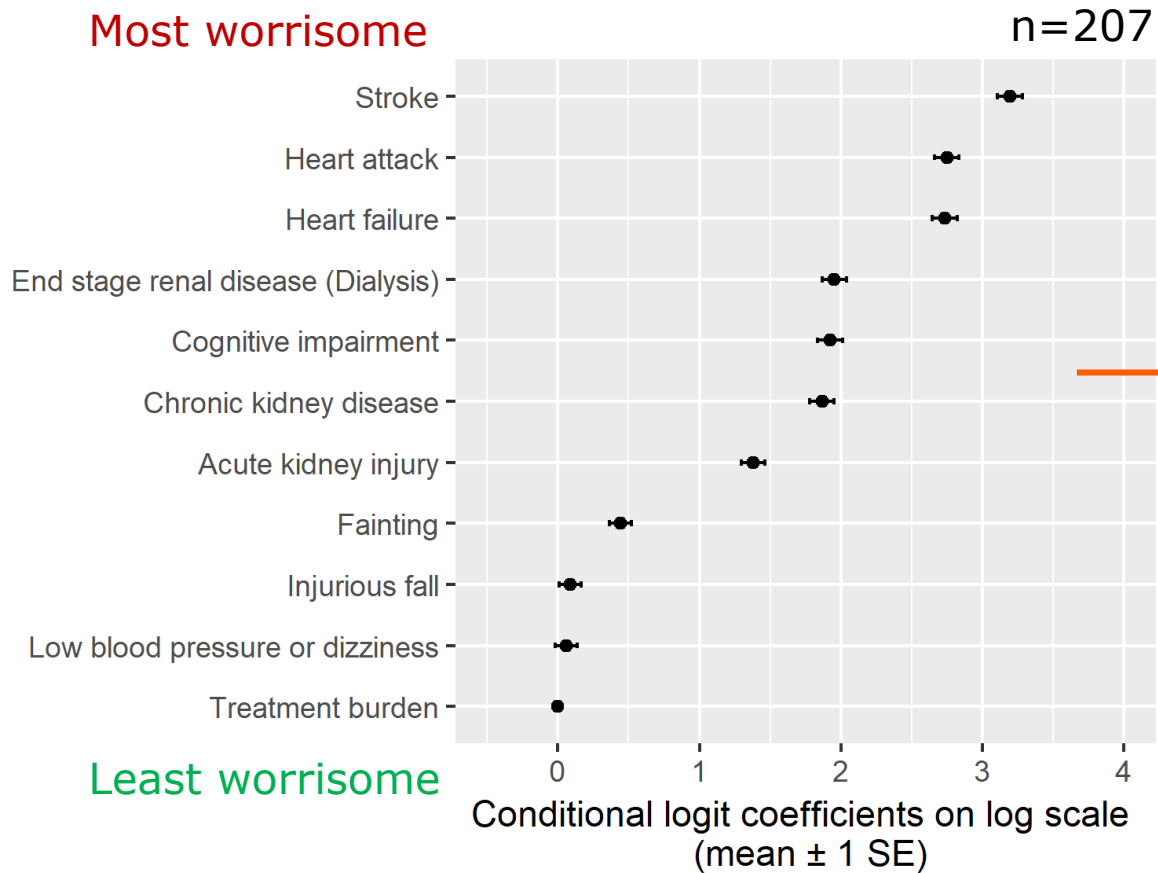


Appendix



Results with average preferences

Most worrisome



Least worrisome

Do comorbidities matter?

Women without stroke

Diabetes	Kidney Disease	Heart Failure	Age 50-64	Age 65-74	Age 75-84
yes	stage 3A	yes	Orange	Orange	Orange
yes	no	yes	Orange	Orange	Orange
no	stage 3A	no	Orange	Orange	Orange
yes	stage 3B	yes	Orange	Orange	Orange
yes	stage 4	yes	Orange	Orange	Orange
yes	stage 3A	no	Orange	Orange	Orange
no	no	no	Orange	Orange	Orange
no	stage 3A	yes	Orange	Orange	Orange
yes	stage 4	no	Blue	White	White
yes	no	no	White	White	Orange
yes	stage 3B	no	Blue	White	White
no	stage 4	no	Blue	White	Orange
no	stage 4	yes	Blue	Blue	White
no	no	yes	White	Orange	Orange
no	stage 3B	no	Blue	White	White
no	stage 3B	yes	Blue	Blue	Orange

120 mmHg is better

140 mmHg is better

Eliciting valid individual preferences? An exploratory study

