

# FFR Cost Effectiveness In Multivessel Disease



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# The FAME Study

- The Fractional Flow Reserve (FFR) vs. Angiography for Multivessel Evaluation (FAME) Study demonstrated significantly improved health outcomes at one year in patients randomized to multivessel percutaneous coronary intervention (PCI) guided by FFR compared to those patients guided by angiography alone.
- In the FAME Study, 1005 patients with multivessel CAD were randomly assigned to FFR-guided PCI or angiography-guided PCI with DES and followed for one year.
- The FAME Study shows that routine FFR measurements significantly improves procedural outcomes and saves cost without prolonging the procedure.
- FAME's primary endpoint was met and confirmed patients assessed with FFR had an overall reduction in MACE (Major Adverse Cardiac Events) rates to 28% at one year.



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# Cost Effectiveness Data Collection and Analysis Method

- As a secondary endpoint, a cost utility analysis comparing costs vs. quality-adjusted life years (QALY) was performed with a time horizon of one year. QALYs were calculated using utilities determined by the EQ-5D with U.S. weights.
- Direct medical costs (in U.S. \$) included direct costs from the procedure and hospitalization, as well as follow-up events related to major adverse cardiac events (MACE). Initial procedure costs were calculated from actual resource consumption; costs for MACE-events were estimated from the published literature.
- Confidence intervals for both QALYs and costs were estimated by a statistical bootstrap percentile method (1000 replications). Direct costs were collected throughout the clinical trial at implant, one month, and one year.



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# Key Economic Findings

- Significant reduction in number of stents required per patient
- Significant reduction of cost for materials used at procedure
- Significant reduction of total cost over one year
- Significant reduction in amount of contrast used
- No significant difference in procedure time



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# Supporting Data on Key Economic Findings

<b>Economic Outcomes</b>	<b>FFR guided (n=496)</b>	<b>Angio guided (n=509)</b>	<b>Difference</b>
Significant reduction in stents required per patient (p<0.001)	1.9	2.7	0.8
Significant reduction of cost for materials used at procedure (11%) (p<0.001)	\$5332	\$6007	\$675
Significant reduction of total cost over one-year (14%)	\$12,291	\$14,357	<b>\$2,066</b>
Significant reduction in amount of contrast used (p<0.001)	272 ml	302 ml	30 ml
No significant difference in procedure time (p=0.51)	71 min	70 min	1 min

**Total cost reduction at one-year was \$2,066, of which \$675 was directly related to direct material cost.**

# FAME Study Economic Outcomes

## Improved Outcomes at Lower Costs



Bootstrap simulation indicated that the FFR-guided strategy was cost-saving in 99.8% and cost-effective in all 1,000 scenarios.



# Conclusions

- The FAME Study confirms that routine FFR measurements significantly improves procedure outcomes and reduces cost without prolonging the procedures.
- Routine FFR measurement reduces MACE by 28%
- Total average cost savings after one year was \$2,066 (14%) including \$675 associated with direct material costs



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