



Primary PCI in STEMI Should Transradial be the Default Approach?

Torino, Italy

September 2013

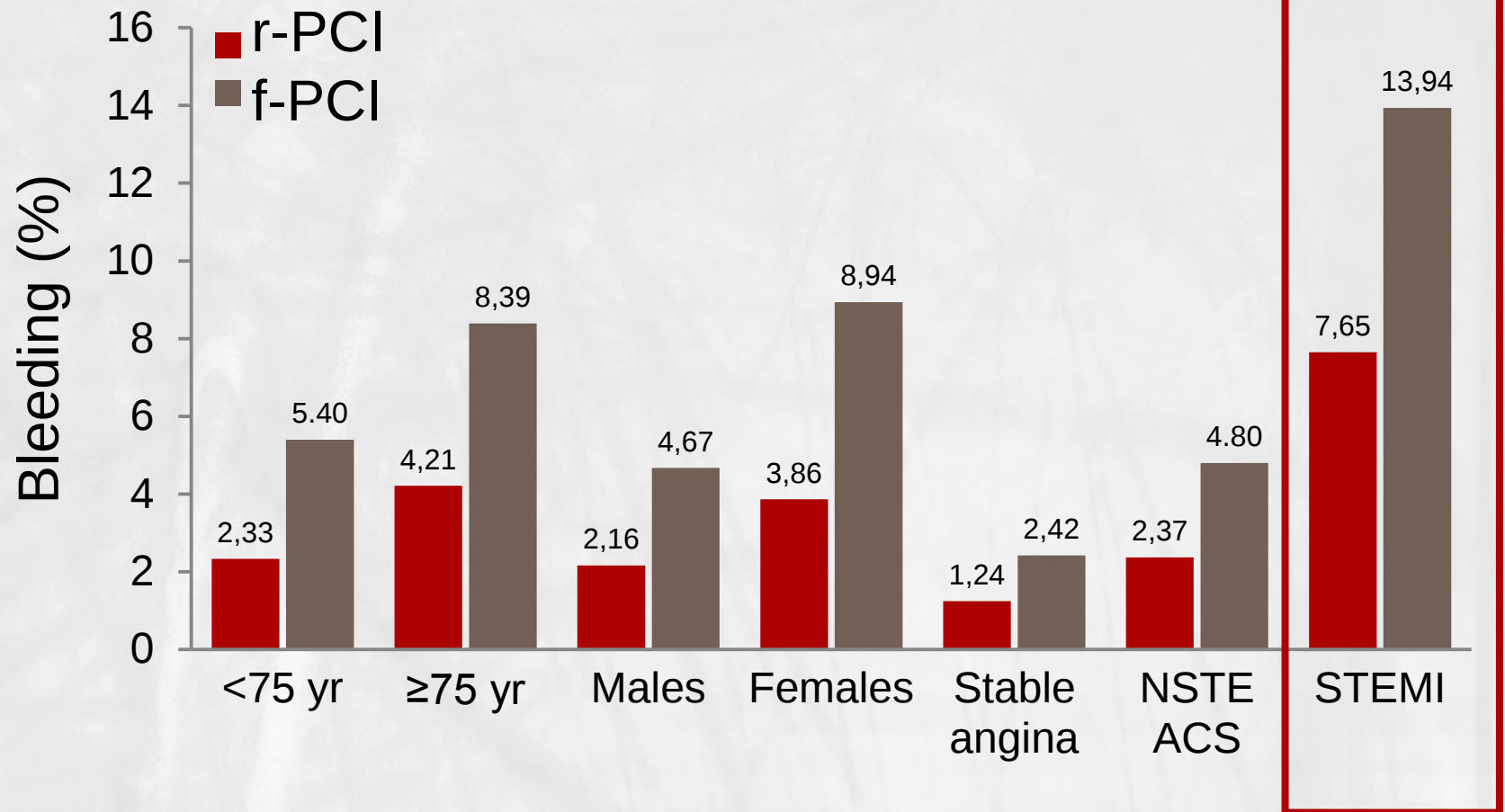


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Disclosures and conflicts

- None

Bleeding Complications Radial PCI vs Femoral PCI at NCDR Sites



Rationale for TR-PCI in STEMI

- STEMI bleeding predicts worse prognosis
 - Higher short and long term mortality
- Modest reduction with newer pharmacologic agents and approaches
- Access site bleeding significant source
- Transradial PCI decreases bleeding

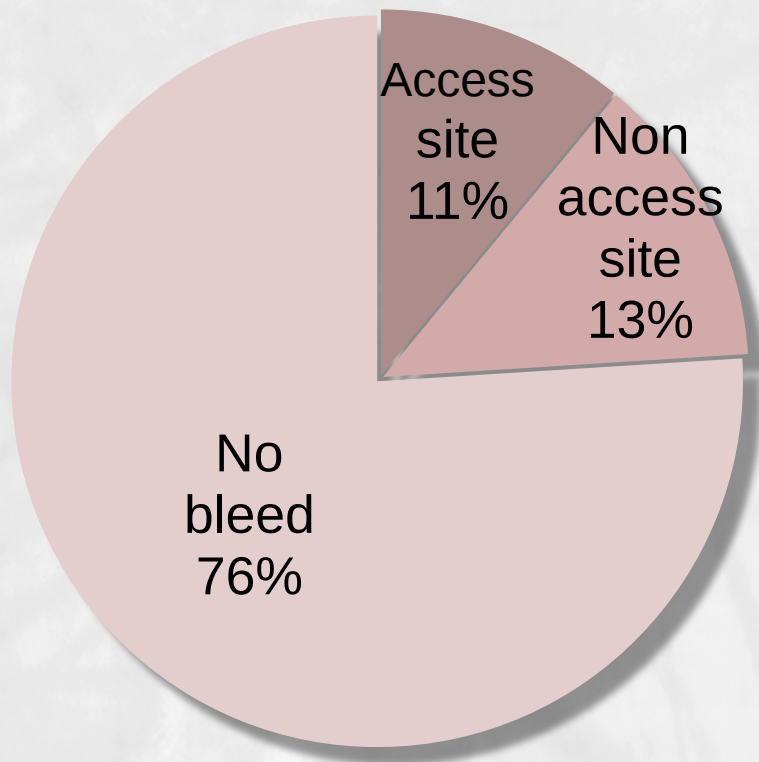
Transradial PCI in STEMI

- Decrease bleeding?
- Decrease mortality?
- Implications for practice?
 - Acceptance, expertise
- Implications for Guidelines?

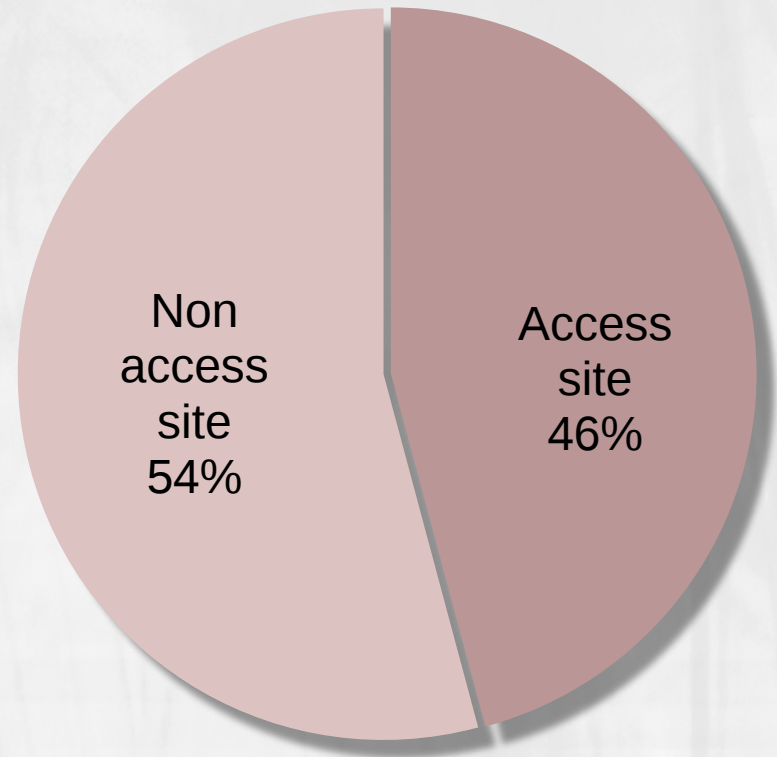


PCI Bleeding in STEMI Patients

Overall



Patients who bled



Transradial PCI Attractive for STEMI patients

- Potential for bleeding is high
 - Potent antiplatelet and antithrombotic agents
 - Post-fibrinolysis
- Smaller catheters usually sufficient (5 and 6F)
- Thrombectomy possible
- Less use of IABP in future?
 - Recent IABP-SHOCK II results

Is Transradial Superior to Transfemoral PCI in STEMI Patients?

The Evidence:

- Meta-analyses
- Registry data
- Randomized Controlled Trials

Meta-analysis Transradial vs. Transfemoral Primary or Rescue PCI

Bleed

70%

MACE

44%

Death

46%

Cross
over

7x

Fluoro
time

1.8x

REAL Registry

Primary and Rescue PCI in STEMI

Outcome	Transradial	Transfemoral	P value
Vascular complications (surgery or transfusion)	1.1%	2.5%	0.0052
2-yr mortality (propensity score matching)	8.8%	11.4%	0.025

11% deaths at 2 years
attributed to bleeding within 30 days of PCI

Radial versus femoral access for coronary angiography and intervention in patients with acute coronary syndromes (RIVAL): a randomised, parallel group, multicentre trial

*Sanjit S Jolly, Salim Yusuf, John Cairns, Kari Niemelä, Denis Xavier, Petr Widimsky, Andrzej Budaj, Matti Niemelä, Vicent Valentin, Basil S Lewis, Alvaro Avezum, Philippe Gabriel Steg, Sunil V Rao, Peggy Gao, Rizwan Afzal, Campbell D Joyner, Susan Chrolavicius, Shamir R Mehta, for the RIVAL trial group**

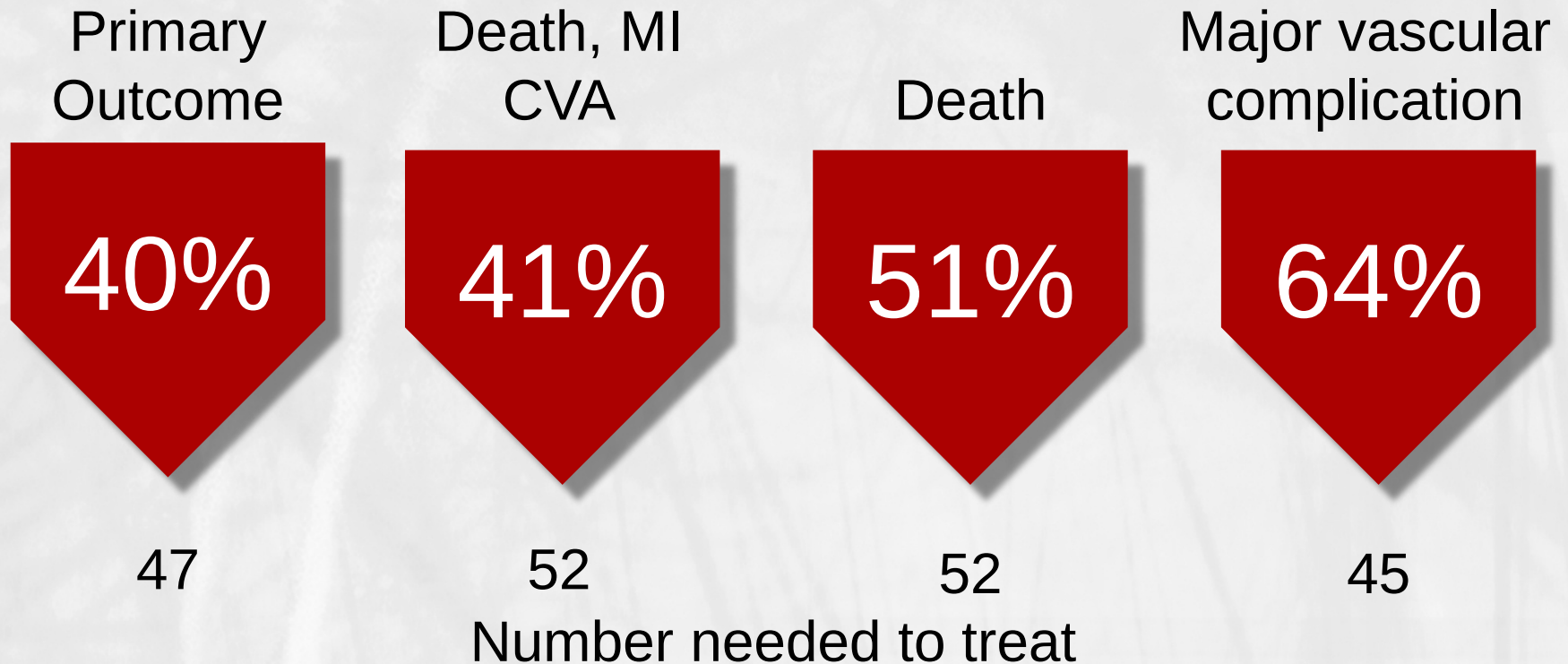
Primary end point – NEGATIVE

Death, MI, CVA, non-CABG major bleeding at 30 days

All key secondary end points – NEGATIVE

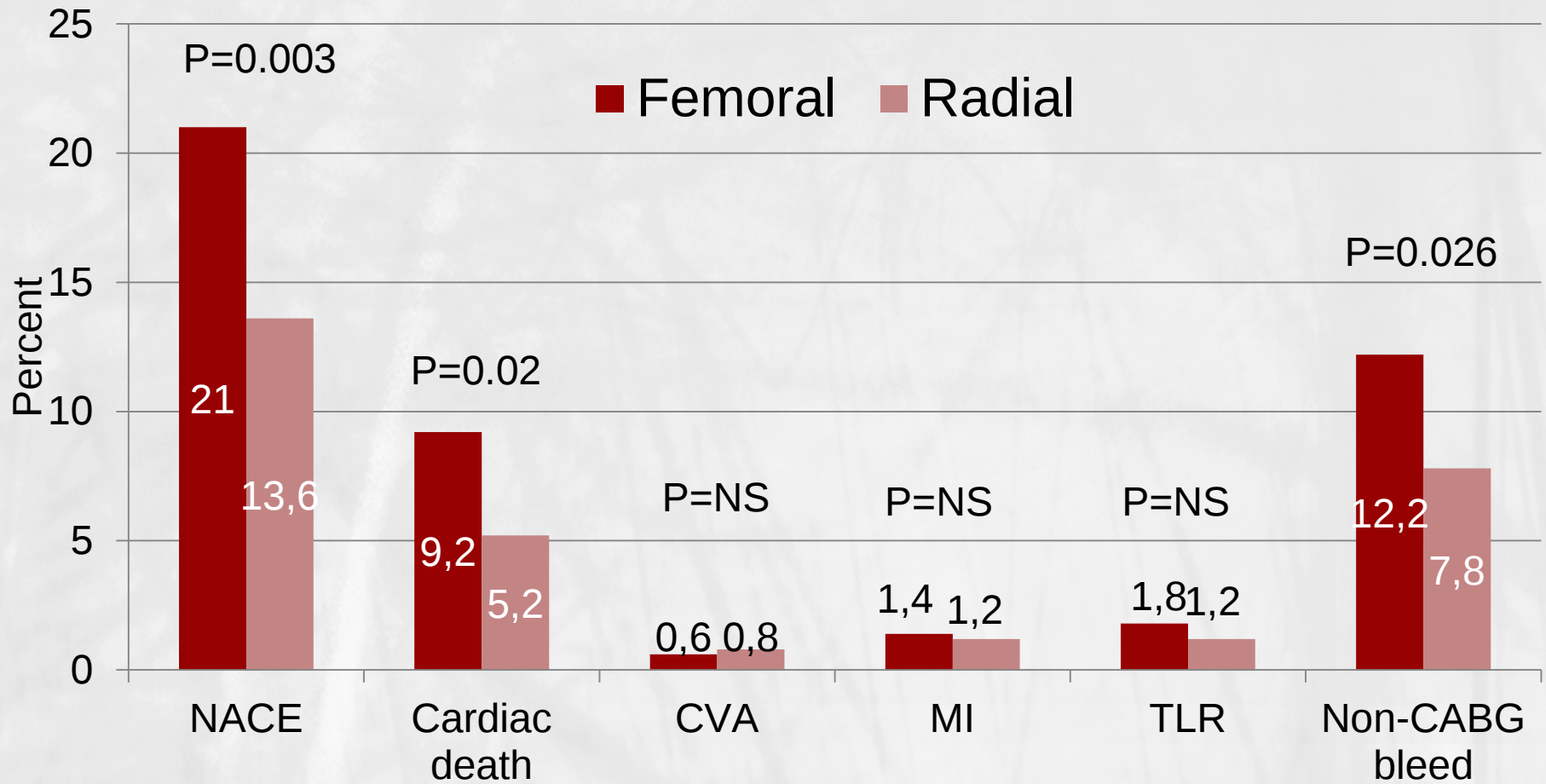
RIVAL

7021 STEMI Patients



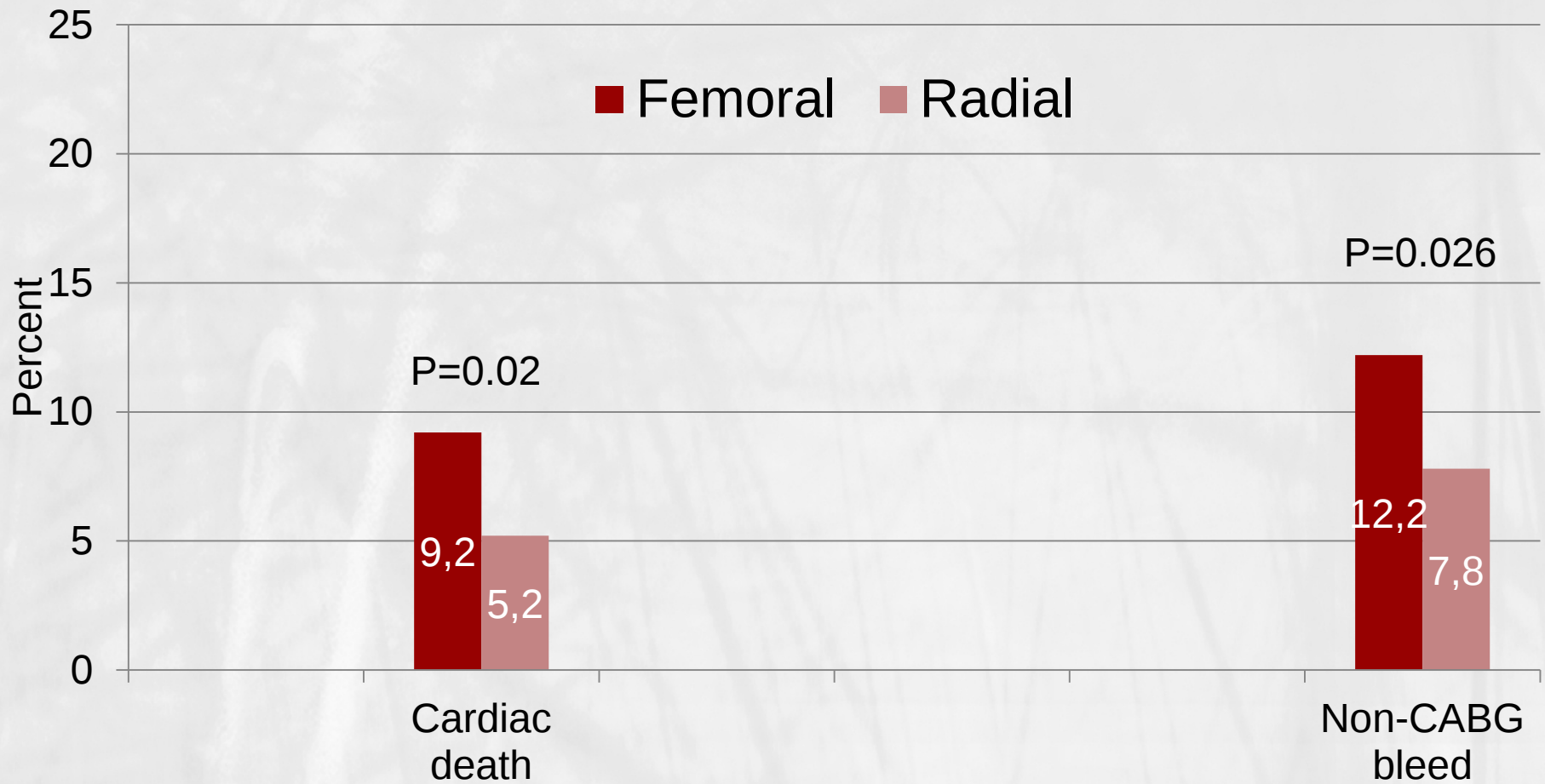
RIFLE-STEACS Study

Multicenter Randomized 1001 patients



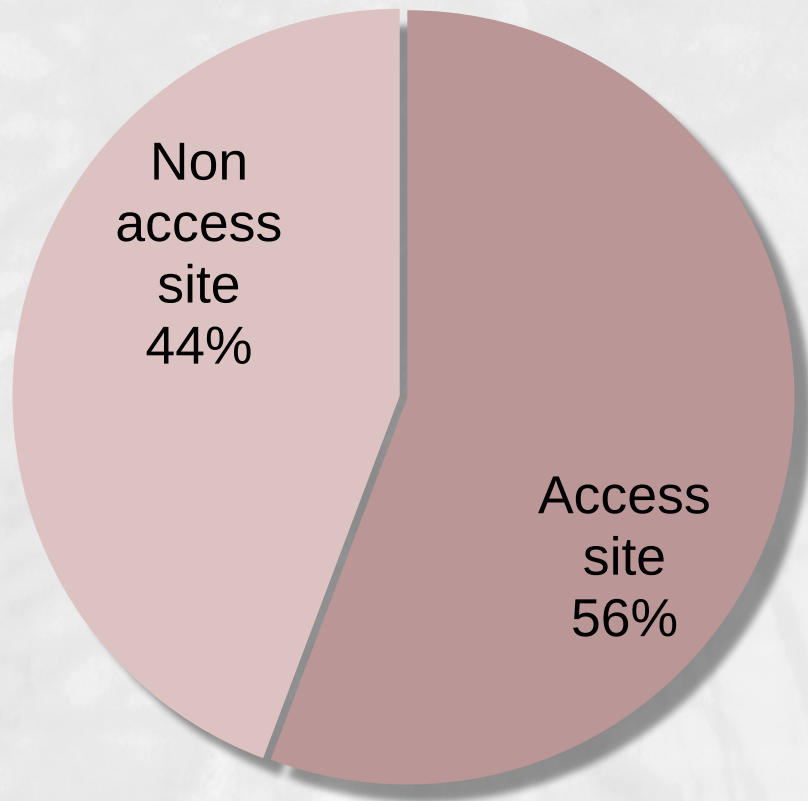
RIFLE-STEACS Study

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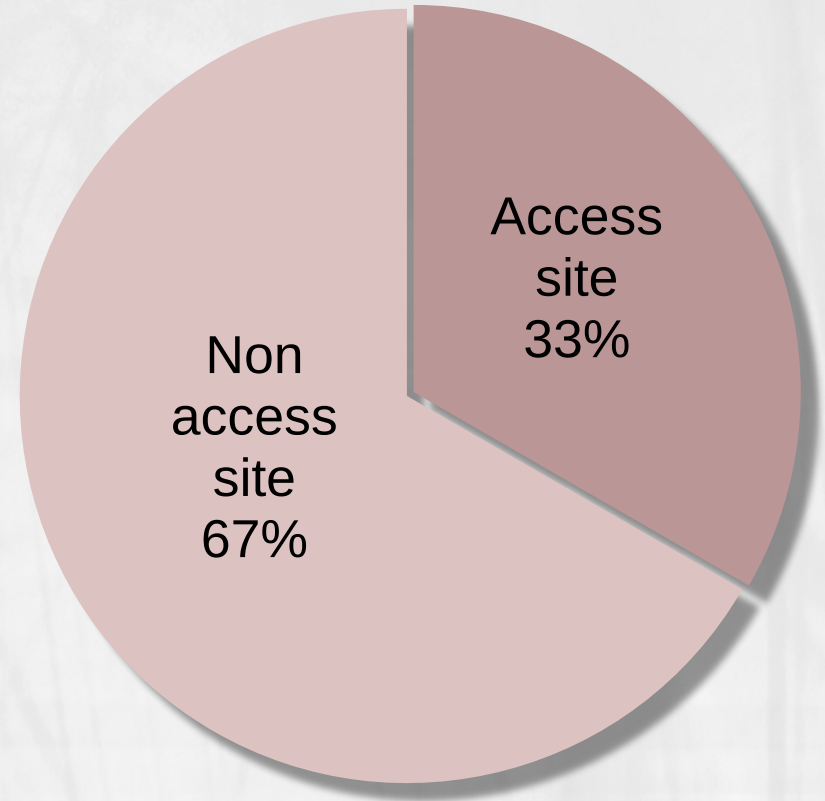


Bleeding in RIFLE-STEACS

Femoral



Radial



RIFLE-STEACS Study

Additional Observations

	Femoral	Radial	P value
DTBT	53 min	60 min	NS
GP IIb/IIIa	70%	67%	NS
Bivalirudin	7%	8%	NS
Thrombectomy	41%	41%	NS
Length of stay	6 days	5 days	0.008

Contemporary Bleeding Avoidance NCDR Observations 2009-2012

Trans-Radial combined with Bivalirudin

Less PCI-bleeding than

Trans-Femoral combined with bivalirudin and
closure devices

Highest bleeding risk patients
least likely to have trans-radial and bivalirudin

Meta Analysis of STEMI RCTs

12 Trials and >5000 Patients

All cause
mortality

45%

MACE

36%

Access-site
bleed

65%

Major bleed

49%

Summary of Transradial PCI in STEMI

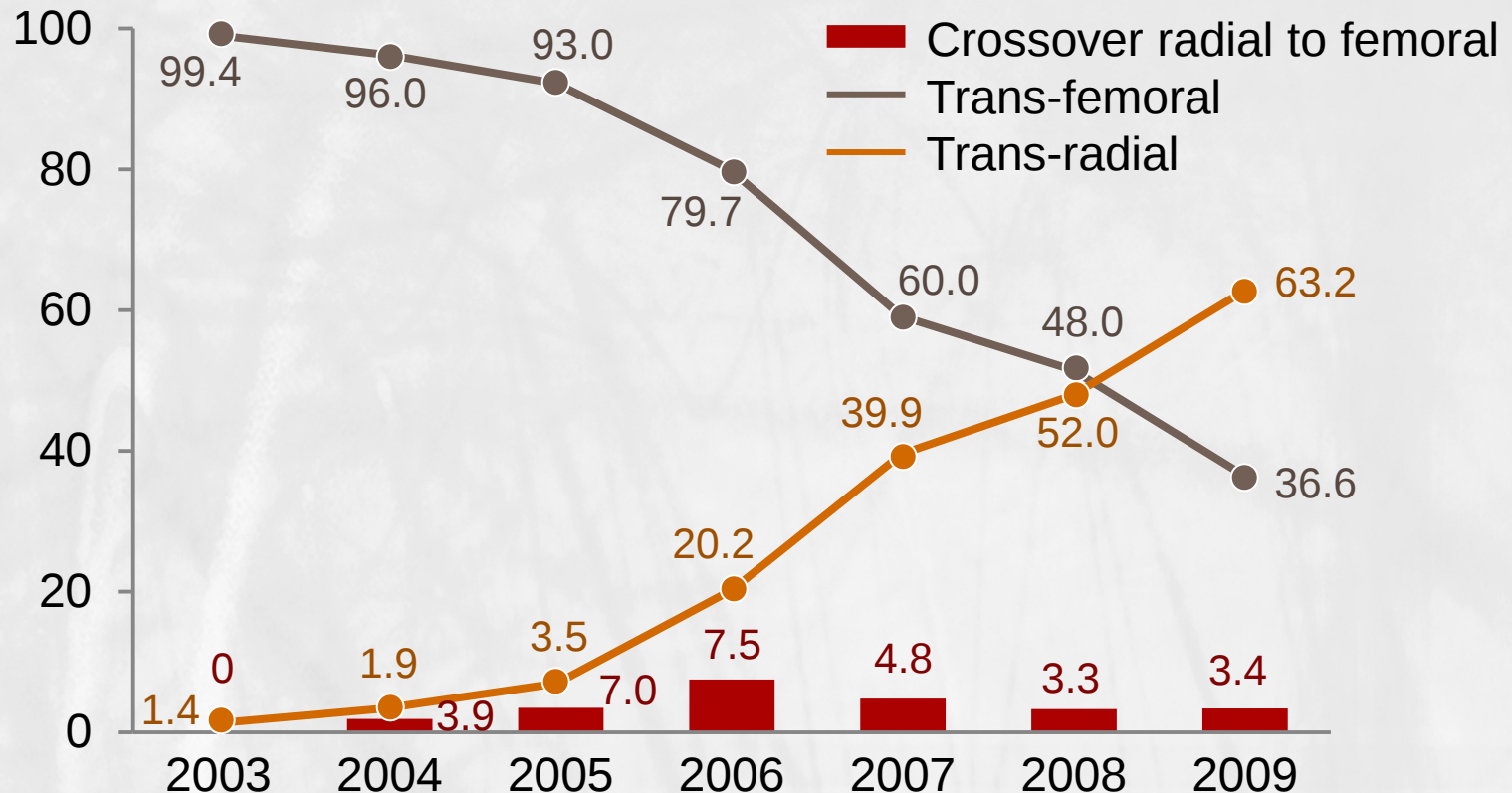
- Feasible and successful in experienced centers
- Decreases access site bleeding and vascular complications
- Decreases mortality
- Crossover to femoral in about 5-7%
- Improved patient comfort
- May decrease LOS

Caveats.....

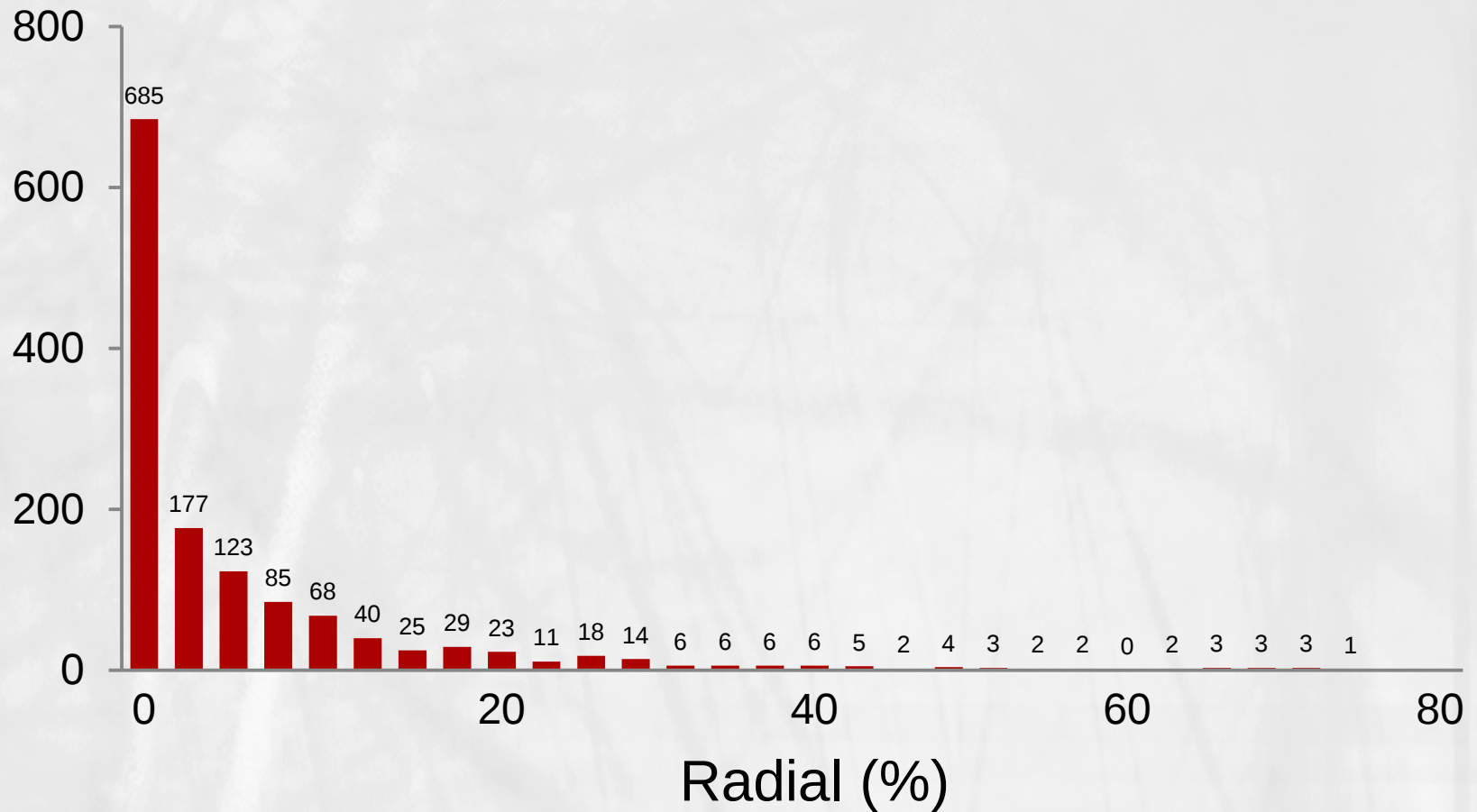
- Learning curve - experience counts
- Lack clear-cut mechanism which accounts for lower mortality
- STEMI-Radial trial showed no survival advantage (unpublished)
- Need RCT of trans-radial vs. trans-femoral with bivalirudin and closure devices

Temporal Trends TR and TF PCI in AMI

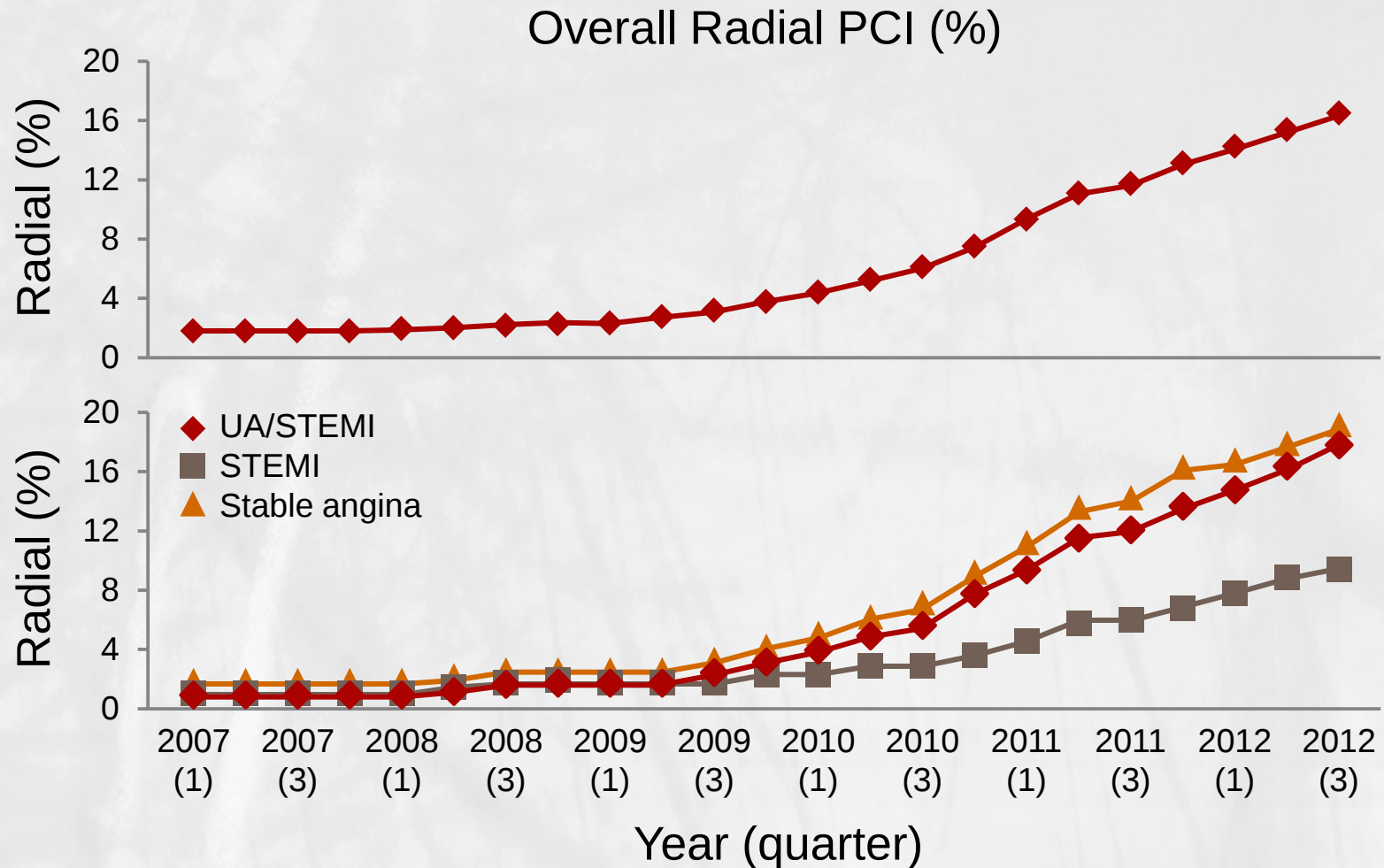
REAL Registry from North Italy (11,068 Patients)



Proportion of Radial PCI at NCDR Sites



Trends in Radial PCI Use at NCDR Sites



Feldman DN: Circ, 2013

Call to Arms?

Transradial PCI in STEMI Patients

- Expertise
 - High volume operators should learn technique
 - Training programs
- 2011 ACCF/AHA/SCAI PCI Guidelines
 - No specific recommendation
- Reimbursement and quality metrics
 - Value-based Purchasing