Figure A1. Size of matched sample (no calipers) Multiplier = 1 Multiplier = 2 Size of matched sample Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 Size of matched sample 

Size of matched sample Maximum ratio of controls to treated Maximum ratio of controls to treated

Size of matched sample

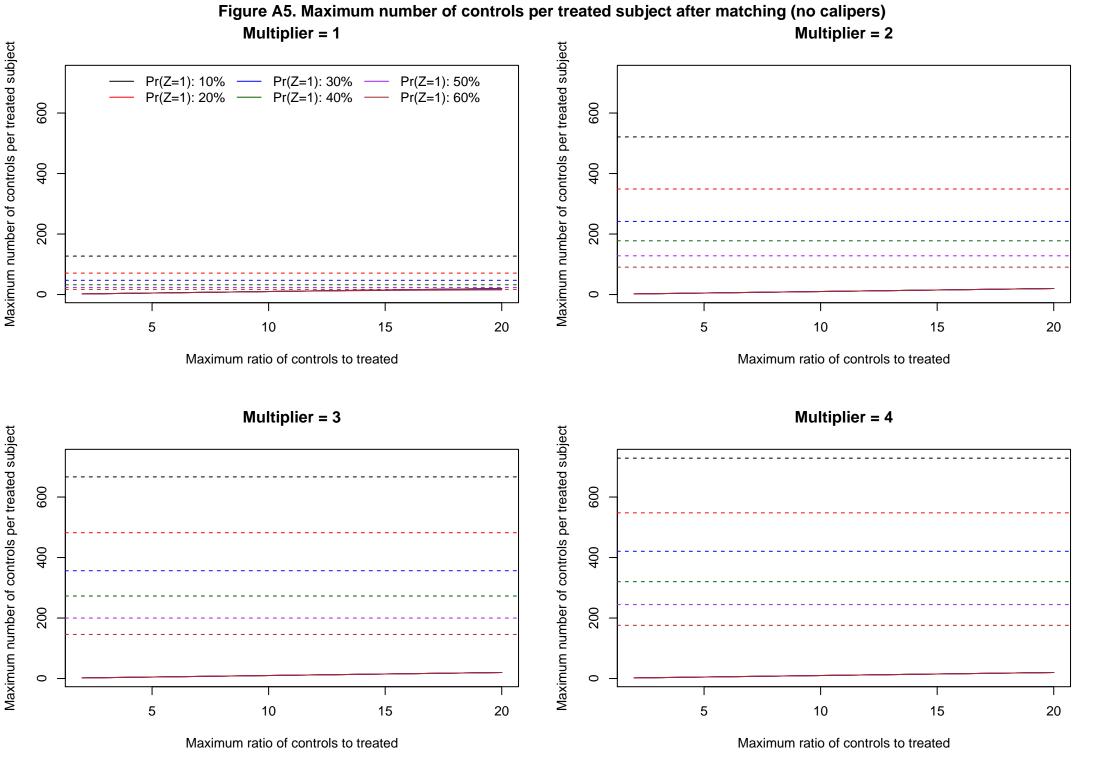
Figure A2. Size of matched sample (with calipers) Multiplier = 1 Multiplier = 2 Size of matched sample Size of matched sample Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 Size of matched sample Size of matched sample 

Maximum ratio of controls to treated

Maximum ratio of controls to treated

Figure A3. Maximum weight after matching (no calipers) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% Maximum weight Maximum weight Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 Maximum weight Maximum weight Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A4. Maximum weight after matching (with calipers) Multiplier = 1 Multiplier = 2 -- Pr(Z=1): 10% --- Pr(Z=1): 30% --- Pr(Z=1): 50% -- Pr(Z=1): 20% --- Pr(Z=1): 40% --- Pr(Z=1): 60% Maximum weight Maximum weight Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 Maximum weight Maximum weight Maximum ratio of controls to treated Maximum ratio of controls to treated



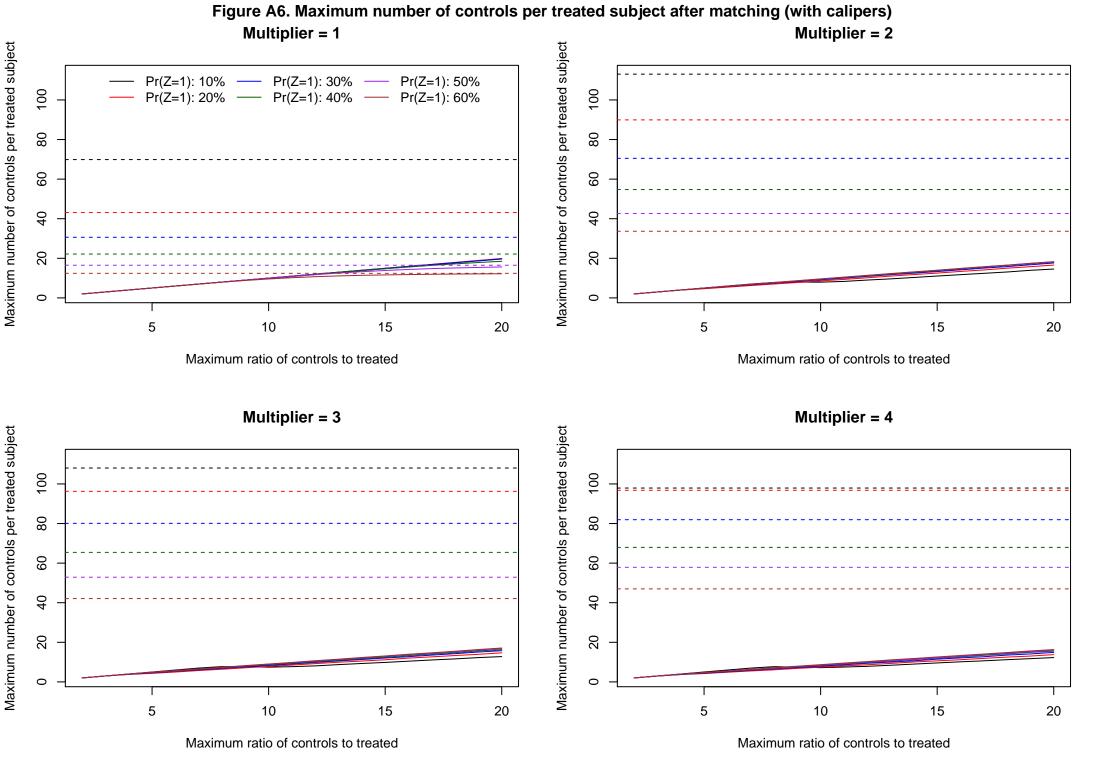


Figure A7. Mean standardized differences for the 10 baseline variables in original sample Prevalence = 0.1 Prevalence = 0.2 Prevalence = 0.3 0.7 0.7 9.0 9.0 9.0 Mean standardized difference Mean standardized difference Mean standardized difference 0.5 0.5 0.5 0.4 0.4 0.4 0.3 0.3 0.3 0.2 0.2 0.2 0.1 0.1 3 Treatment-assignment multiplier Treatment-assignment multiplier Treatment-assignment multiplier Prevalence = 0.4 Prevalence = 0.5 Prevalence = 0.6 —**≥** X7 · • • X10 0.7 0.7 0.7 +· X3 -<del>-</del>√- X6 9.0 9.0 9.0 Mean standardized difference Mean standardized difference Mean standardized difference 0.5 0.5 0.5 0.4 0.4 0.4 0.3 0.3 0.3 0.2 0.2 0.2 Treatment-assignment multiplier Treatment-assignment multiplier Treatment-assignment multiplier

Multiplier = 1 Multiplier = 2 0.7 0.7 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% Maximum standardized difference Maximum standardized difference 9.0 9.0 0.5 0.5 0.4 9.4 0.3 0.3 0.2 0.2 0.1 0.1 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.7 0.7 Maximum standardized difference Maximum standardized difference 9.0 9.0 0.5 0.5 0.4 9.4 0.3 0.3 0.2 0.2 0.1 0.1 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A8. Maximum standardized difference after matching (no calipers)

Multiplier = 1 Multiplier = 2 0.20 0.20 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Maximum standardized difference Maximum standardized difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 0.15 0.15 0.10 0.05 0.05 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.20 0.20 Maximum standardized difference Maximum standardized difference 0.15 0.10 0.10 0.05 0.05 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A9. Maximum standardized difference after matching (with calipers)

Figure A10. Bias in estimated risk difference (no calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 0.15 0.15 - Pr(Z=1): 10% --- Pr(Z=1): 30% --- Pr(Z=1): 50% - Pr(Z=1): 20% --- Pr(Z=1): 40% --- Pr(Z=1): 60% Bias in risk difference Bias in risk difference 0.10 0.10 0.05 0.00 0.00 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.15 0.15 Bias in risk difference Bias in risk difference 0.10 0.10 0.05 0.05 0.00 0.00 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A11. Bias in estimated risk difference (with calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% Bias in risk difference 0.004 Bias in risk difference 0.004 0.000 0.000 -0.004-0.00410 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 Bias in risk difference 0.004 Bias in risk difference 0.004 0.000 0.000 -0.004-0.0045 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A12. Standard deviation of estimated risk difference (no calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 0.20 0.20 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% SD of estimated risk difference SD of estimated risk difference 0.10 0.05 0.05 5 10 15 20 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.20 0.20 SD of estimated risk difference SD of estimated risk difference 0.15 0.10 0.05 0.05 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A13. Standard deviation of estimated risk difference (with calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 0.12 0.12 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% SD of estimated risk difference SD of estimated risk difference 0.10 0.10 0.08 90.0 90.0 0.04 0.04 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.12 0.12 SD of estimated risk difference SD of estimated risk difference 0.10 0.10 0.08 0.08 90.0 90.0 0.04 0.04 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A14. MSE of estimated risk difference (no calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% MSE of estimated risk difference 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 0.00 0.00 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 MSE of estimated risk difference MSE of estimated risk difference 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 0.00 0.00 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A15. MSE of estimated risk difference (with calipers) (N = 1000 & RD = 0) Multiplier = 1 Multiplier = 2 0.014 0.014 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% MSE of estimated risk difference 0.010 0.010 900.0 0.006 0.002 0.002 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.014 0.014 MSE of estimated risk difference MSE of estimated risk difference 0.010 0.010 0.006 900.0 0.002 0.002 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A16. Relative bias (%) in estimated risk difference (no calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 0 0 Relative bias (%) in risk difference Relative bias (%) in risk difference -100 -100 -200 -200 -300 -300 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 10 5 10 15 20 5 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0 0 Relative bias (%) in risk difference Relative bias (%) in risk difference -100 -100 -200 -200 -300 -300 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A17. Relative bias (%) in estimated risk difference (with calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 Relative bias (%) in risk difference Relative bias (%) in risk difference 0 -10 -20 -20 -30 -30 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 5 10 15 20 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 4 Multiplier = 3 Relative bias (%) in risk difference Relative bias (%) in risk difference 0 0 -10 -20 -20 -30 -30 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A18. Standard deviation of estimated risk difference (no calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 0.20 0.20 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% SD of estimated risk difference 0.10 0.05 0.05 5 10 15 20 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.20 0.20 SD of estimated risk difference 0.15 0.10 0.05 0.05 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

SD of estimated risk difference

SD of estimated risk difference

Figure A19. Standard deviation of estimated risk difference (with calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 0.12 0.12 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% SD of estimated risk difference SD of estimated risk difference 0.10 0.08 90.0 90.0 0.04 0.04 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.12 0.12 SD of estimated risk difference SD of estimated risk difference 0.10 0.10 0.08 0.08 90.0 90.0 0.04 0.04 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A20. MSE of estimated risk difference (no calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% MSE of estimated risk difference 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 0.00 0.00 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 MSE of estimated risk difference MSE of estimated risk difference 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 0.00 0.00 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A21. MSE of estimated risk difference (with calipers) (N = 1000 & RD = -0.04) Multiplier = 1 Multiplier = 2 0.014 0.014 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% MSE of estimated risk difference MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 0.010 0.010 900.0 0.006 0.002 0.002 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.014 0.014 MSE of estimated risk difference MSE of estimated risk difference 0.010 0.010 0.006 900.0 0.002 0.002 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A22. Relative bias (%) in estimated risk difference (no calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 0 Relative bias (%) in risk difference Relative bias (%) in risk difference -200 -200 -400 -400 009-009-Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 10 5 10 15 20 5 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0 0 Relative bias (%) in risk difference Relative bias (%) in risk difference -200 -200 -400 -400 009-009-5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A23. Relative bias (%) in estimated risk difference (with calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 20 Relative bias (%) in risk difference 0 -20 -60 -80 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 4 Multiplier = 3 20 Relative bias (%) in risk difference 0 -20 09--80

20

0

-20

-40

09-

-80

20

0

-20

-60

-80

5

10

Maximum ratio of controls to treated

15

20

5

10

Maximum ratio of controls to treated

15

20

Relative bias (%) in risk difference

Relative bias (%) in risk difference

Figure A24. Standard deviation of estimated risk difference (no calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 0.20 SD of estimated risk difference 0.15 0.10 0.05 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.20 SD of estimated risk difference 0.10 0.05

0.20

0.15

0.10

0.05

0.20

0.05

5

10

Maximum ratio of controls to treated

15

20

5

10

Maximum ratio of controls to treated

15

20

SD of estimated risk difference

SD of estimated risk difference

Figure A25. Standard deviation of estimated risk difference (with calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 0.14 0.14 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% SD of estimated risk difference SD of estimated risk difference 0.12 0.12 0.10 0.08 0.08 90.0 90.0 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.14 0.14 SD of estimated risk difference SD of estimated risk difference 0.12 0.12 0.10 0.10 0.08 0.08 90.0 90.0 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A26. MSE of estimated risk difference (no calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% 0.05 0.05 MSE of estimated risk difference MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 10 15 20 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.05 0.05 MSE of estimated risk difference MSE of estimated risk difference 0.04 0.04 0.03 0.03 0.02 0.02 0.01 0.01 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated

Figure A27. MSE of estimated risk difference (with calipers) (N = 500 & RD = -0.02) Multiplier = 1 Multiplier = 2 0.020 0.020 Pr(Z=1): 10% — Pr(Z=1): 30% — Pr(Z=1): 50% MSE of estimated risk difference MSE of estimated risk difference Pr(Z=1): 20% — Pr(Z=1): 40% — Pr(Z=1): 60% 0.015 0.015 0.010 0.010 0.005 0.005 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated Multiplier = 3 Multiplier = 4 0.020 0.020 MSE of estimated risk difference MSE of estimated risk difference 0.015 0.015 0.010 0.010 0.005 0.005 5 10 15 20 5 10 15 20 Maximum ratio of controls to treated Maximum ratio of controls to treated