

Supplementary Online Content

Mohanan PP, Huffman MD, Baldrige AS, et al; ACS QUIK Investigators. Microeconomic costs, insurance, and catastrophic health spending among patients with acute myocardial infarction in India: substudy of a randomized clinical trial. *JAMA Netw Open*. 2019;2(5):e193831. doi:10.1001/jamanetworkopen.2019.3831

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Demographics, Clinical Presentation, and Laboratory Data From 2,114 ACS QUIK Respondents Who Completed Microeconomic Questionnaires, by Gender With Unadjusted *P* Value for Differences

| Characteristic | N | Male n=1521 | Female n=593 | <i>P</i> value |
|--|------|----------------------|----------------------|-------------------|
| Demographics at Hospital Presentation | | | | |
| Age, mean (SD), years | 2114 | 60.3 ± 12.3 | 67.4 ± 12.2 | <.001 |
| No insurance, n (%) | 2114 | 1162 (76.4) | 438 (73.9) | 0.22 |
| History of tobacco use, n (%) | 2114 | 591 (38.9) | 27 (4.6) | <.001 |
| History of diabetes, n (%) | 2114 | 595 (39.1) | 306 (51.6) | <.001 |
| Transferred, n (%) | 2114 | 671 (44.1) | 236 (39.8) | 0.07 |
| ST elevation myocardial infarction, n (%) | 2114 | 889 (58.4) | 255 (43.0) | <.001 |
| Symptom-to-door time, median (IQR), min | 2015 | 240 (120-893) | 330 (140-1200) | <.001 |
| Body weight, mean (SD), kg | 2113 | 62.5 ± 10.3 | 55.5 ± 10.1 | <.001 |
| Systolic blood pressure, mean (SD), mmHg | 2114 | 141.1 ± 30.2 | 148.5 ± 31.1 | <.001 |
| Heart rate, mean (SD), bpm | 2114 | 80.1 ± 18.9 | 86.6 ± 20.8 | <.001 |
| Initial troponin, median (IQR), ng/ml | 492 | 1.80 (0.57-7.32) | 1.16 (0.33-3.10) | 0.002 |
| LDL cholesterol, mean (SD), mg/dl | 1587 | 119.2 ± 40.5 | 125.5 ± 43.9 | 0.006 |
| Triglycerides, median (IQR), mg/dl | 1593 | 124 (93-176) | 121 (95-164) | 0.41 |
| Serum creatinine, median (IQR), mg/dl | 980 | 1.1 (0.9-1.3) | 1.0 (0.8-1.2) | <.001 |
| Fasting glucose, median (IQR), mg/dl | 1394 | 128 (103-177) | 135 (107-186) | 0.10 |
| Hemoglobin, mean (SD), mg/dl | 2035 | 13.7 ± 1.9 | 11.8 ± 1.7 | <.001 |
| ACS QUIK Intervention n (%) | 2114 | 793 (52.1) | 292 (49.2) | 0.23 |
| Socioeconomics | | | | |
| Married, n (%) | 2114 | 1396 (91.8) | 355 (59.9) | <.001 |
| Rural, n (%) | 2113 | 1129 (74.3) | 466 (78.6) | 0.04 |
| Education level, median (IQR), years | 1941 | 10 (6-12) | 7 (4-10) | <.001 |
| Time to survey completion, days (IQR) | 1899 | 31 (30-34) | 31 (30-34) | 0.82 |
| Unemployment, n (%) | 2114 | 354 (23.3) | 470 (79.3) | <.001 |
| Baseline monthly individual income | | | | |
| Median (IQR) Rs | 2074 | 10000 (5000-15000) | 2000 (0-10000) | <.001 |
| Median (IQR) INT ^a | 2074 | 583.0 (291.5-874.5) | 116.6 (0.0-583.0) | |
| Baseline monthly household income | | | | |
| Median (IQR) Rs | 2112 | 10000 (8000-20000) | 10000 (7000-18000) | 0.008 |
| Median (IQR) INT ^a | 2112 | 583.0 (466.4-1166.0) | 583.0 (408.1-1049.4) | |

| | | | | |
|--|------|-------------|------------|-------|
| Dependents < 18 years old, n (%) | 2114 | 950 (62.5) | 388 (65.4) | 0.20 |
| Dependents > 60 years old, n (%) | 2114 | 866 (56.9) | 442 (74.5) | <.001 |
| Other individuals in household earning income, n (%) | 2114 | 1406 (92.4) | 553 (93.3) | 0.52 |

Abbreviations: LDL=low density lipoprotein, Rs=Indian rupees, INT=international dollar, IQR=interquartile range

eTable 2. Detailed In-Hospital and Post-Hospitalization Expenditures (INT\$) of 2,114 ACS QUIK Respondents Who Completed Microeconomic Questionnaires, Overall and by Hospital Type.

IQR=interquartile range, INT=international dollar

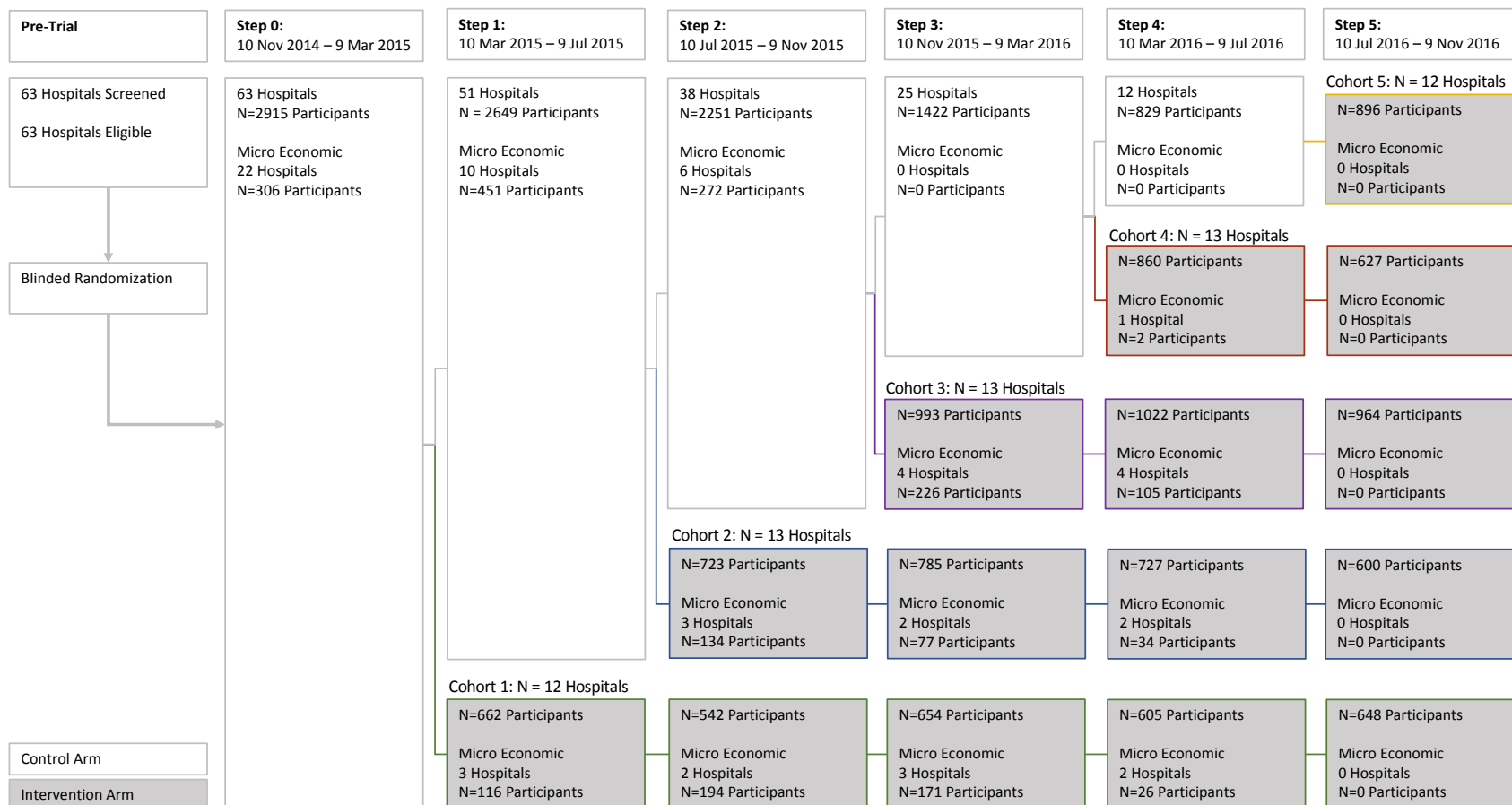
| Expenditures | N | Overall n=2,114 | Government Hospital n=456 | Non-Profit/Charity Hospital n=1135 | Private Hospital n=523 | P-Value |
|--|------|-----------------------|------------------------------|--|---------------------------|---------|
| Median (IQR) In-Hospital Costs | | | | | | |
| Hospital Admission | 1319 | 7.0 (0.0-7.0) | 0.0 (0.0-0.0) | 7.0 (7.0-7.0) | 8.7 (1.2-87.5) | <0.001 |
| Tests | 1202 | 58.3 (43.7-174.9) | 40.8 (7.0-58.3) | 87.5 (58.3-174.9) | 176.7 (87.5-288.3) | <0.001 |
| Emergency Room | 1299 | 0.0 (0.0-11.7) | 0.0 (0.0-0.0) | 0.0 (0.0-11.7) | 104.9 (35.0-186.6) | <0.001 |
| Food | 934 | 58.3 (29.2-58.3) | 17.5 (14.6-20.4) | 58.3 (29.2-58.3) | 81.6 (58.3-116.6) | <0.001 |
| Treatment | 1099 | 291.5 (58.3-4809.9) | 0.0 (0.0-0.0) | 583.0 (233.2-5830.2) | 174.9 (78.7-1457.6) | <0.001 |
| Ambulance | 1048 | 0.0 (0.0-0.0) | 0.0 (0.0-5.8) | 0.0 (0.0-0.0) | 0.0 (0.0-17.5) | <0.001 |
| Surgery | 1182 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | <0.001 |
| Other | 931 | 0.0 (0.0-29.2) | 0.0 (0.0-0.0) | 0.0 (0.0-29.2) | 58.3 (11.7-116.6) | <0.001 |
| Medicine | 1224 | 116.6 (58.3-240.8) | 116.6 (0.0-174.9) | 116.6 (58.3-320.7) | 240.8 (116.6-355.6) | <0.001 |
| Attendant | 2114 | 58.3 (26.2-116.6) | 87.5 (26.2-116.6) | 87.5 (29.2-116.6) | 0.0 (0.0-58.3) | <0.001 |
| Travel | 2114 | 14.3 (5.8-29.2) | 45.2 (17.5-58.3) | 8.7 (0.0-17.5) | 14.6 (8.7-23.3) | <0.001 |
| Total In-Hospital Cost | 917 | 1457.6 (583.0-7287.8) | 44.7 (18.5-233.2) | 5480.4 (874.5-7287.8) | 1589.1 (878.3-6704.8) | <0.001 |
| Median (IQR) Post-Hospitalization Costs | | | | | | |
| Doctor Fees | 1297 | 7.0 (0.0-11.7) | 0.0 (0.0-0.0) | 7.0 (7.0-8.7) | 14.6 (11.7-29.2) | <0.001 |
| Rehabilitation | 1013 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | <0.001 |
| Home Care | 1132 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | <0.001 |
| Other | 909 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 8.7 (0.0-29.2) | <0.001 |
| Tests | 1150 | 17.5 (0.0-58.3) | 0.0 (0.0-3.5) | 29.2 (14.6-58.3) | 42.0 (20.4-58.3) | <0.001 |
| Food | 832 | 5.8 (0.0-58.3) | 2.9 (0.0-5.8) | 14.6 (0.0-58.3) | 8.7 (0.0-29.2) | <0.001 |
| Medicine | 1170 | 58.3 (14.6-70.0) | 70.0 (0.0-87.5) | 35.0 (17.5-58.3) | 70.5 (37.9-116.6) | <0.001 |
| Transport | 1685 | 8.7 (2.9-17.5) | 14.6 (5.8-29.2) | 5.8 (0.0-11.7) | 11.7 (5.8-17.5) | <0.001 |
| Total Post-Hospitalization Cost | 925 | 87.5 (20.4-174.9) | 17.5 (8.7-87.5) | 87.5 (35.0-174.9) | 151.6 (98.5-291.5) | <0.001 |

eTable 3. Detailed In-Hospital And Post-Hospitalization Expenditures (INT\$) of 2,114 ACS QUIK Respondents Who Completed Microeconomic Questionnaires, Overall and by Myocardial Infarction Type.

IQR=interquartile range, INT=international dollar.

| Expenditures | N | Overall n=2,114 | NSTEMI n=970 | STEMI n=1144 | P-Value |
|--|------|-----------------------|----------------------|-----------------------|---------|
| Median (IQR) In-Hospital Costs | | | | | |
| Hospital Admission | 1319 | 7.0 (0.0-7.0) | 7.0 (1.2-7.0) | 7.0 (0.0-7.0) | <.001 |
| Tests | 1202 | 58.3 (43.7-174.9) | 87.5 (58.3-204.1) | 58.3 (37.9-116.6) | <.001 |
| Emergency Room | 1299 | 0.0 (0.0-11.7) | 0.1 (0.0-29.2) | 0.0 (0.0-8.7) | <.001 |
| Food | 934 | 58.3 (29.2-58.3) | 58.3 (29.2-58.3) | 58.3 (26.2-58.3) | 0.39 |
| Treatment | 1099 | 291.5 (58.3-4809.9) | 233.2 (71.7-583.0) | 524.7 (0.0-5830.2) | <.001 |
| Ambulance | 1048 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.51 |
| Surgery | 1182 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | <.001 |
| Other | 931 | 0.0 (0.0-29.2) | 0.0 (0.0-58.3) | 0.0 (0.0-29.2) | <.001 |
| Medicine | 1224 | 116.6 (58.3-240.8) | 174.9 (58.3-320.7) | 116.6 (58.3-201.4) | <.001 |
| Attendant | 2114 | 58.3 (26.2-116.6) | 70.0 (23.3-116.6) | 58.3 (29.2-116.6) | 0.52 |
| Travel | 2114 | 14.3 (5.8-29.2) | 11.7 (5.8-29.2) | 14.6 (5.8-29.2) | 0.30 |
| Total In-Hospital Cost | 917 | 1457.6 (583.0-7287.8) | 932.8 (524.7-2798.5) | 4955.7 (699.6-7287.8) | <.001 |
| Median (IQR) Post-Hospitalization Costs | | | | | |
| Doctor Fees | 1297 | 7.0 (0.0-11.7) | 7.0 (0.0-11.7) | 7.0 (0.0-8.7) | <.001 |
| Rehabilitation | 1013 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.10 |
| Home Care | 1132 | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) | 0.05 |
| Other | 909 | 0.0 (0.0-0.0) | 0.0 (0.0-5.8) | 0.0 (0.0-0.0) | <.001 |
| Tests | 1150 | 17.5 (0.0-58.3) | 17.5 (2.3-46.6) | 14.6 (0.0-58.3) | 0.35 |
| Food | 832 | 5.8 (0.0-58.3) | 5.8 (0.0-29.2) | 8.7 (0.0-58.3) | 0.008 |
| Medicine | 1170 | 58.3 (14.6-70.0) | 52.5 (17.5-70.0) | 58.3 (11.7-75.8) | 0.53 |
| Transport | 1685 | 8.7 (2.9-17.5) | 8.7 (3.5-17.5) | 8.7 (0.0-20.4) | 0.99 |
| Total Post-Hospitalization Cost | 925 | 87.5 (20.4-174.9) | 107.5 (35.0-174.9) | 87.5 (15.2-174.9) | 0.24 |

eFigure 1. Flowchart of Participants Completing Microeconomic Survey During Steps Within the ACS QUIK Cluster Randomized Stepped Wedge Trial



*Randomization occurred at a single point in time prior to patient enrollment. Hospitals were blinded to their assigned cohort until 2 weeks prior to the time point at which their cohort moved from the control to intervention stage.

eFigure 2. Proportion of CVD Expenses Paid From Patient Reported Payment Sources by Insurance Status

