**Appendix Table 1.** Cost-Effectiveness of Community-Based Interventions for Hypertension Control, 1995–2015 (N=34)

| Author, Year, Country | Intervention | Provider | ICER/ Net savings (2014 dollar value) | Conclusion by authors |
|---|---|---|---|---|
| U.S.-based studies | | | | |
| Educational interventions for lifestyle modification | | | | |
| Datta et al., 2010 | A 2-year randomized trial, along with a decision model: tailored educational information bimonthly for 2 years via telephone for hypertensive patients | Non-physician (nurses) | (1) $58,610/LYS for normal-weight women, $120,513/LYS for normal-weight men;<br>(2) $60,142/LYS for overweight men; $80,839/LYS for overweight women. | Cost-effective for overweight male and normal-weight women |
| Troyer, 2010 | A 1-year randomized trial: medical nutrition therapy (MNT) or therapeutic meals for people aged ≥60 years with hypertension or hyperlipidemia | Non-physician (dietitians) | (1) $134,611/QALY for Meals only;<br>(2) $59,174/QALY for MNT;<br>(3) $305,187/QALY for Meals + MNT | Cost-effective for meals only or MNT only |
| Sacks et al., 2009 | A 1 year observational study: an employer-sponsored, Internet-based diet and exercise program for patients with cardiovascular conditions (diabetes, hypertension, hyperlipidemia) | Non-physician (laypeople) | Net savings $999/person | Cost-saving |
| Finkelstein et al., 2006 | A before-and-after comparison: educators provide educational services to overweight and obese women | Non-physician (laypeople) | (1) $714/1% CHD risk reduction;<br>(2) $6,683/LYG | Cost-effective |

| | | | | |
|---|---|---|---|---|
| Educational interventions for medication adherence support | | | | |
| Kulchaitanaroaj et al., 2012 | A 6-month randomized trial: A collaborative care program to provide direct patient care, assessment, recommendations and follow-up phone call for patients with hypertension | Physician and non-physician (pharmacist) | (1) $40/mm Hg drop in SBP;<br>(2) $103/mm Hg drop in DBP. | Cost-effective |
| Nuckols et al., 2011 | A 2-year probability tree model: "improved care'' of blood pressure management for 4,500 U.S. adults with hypertension | Physician | (1) $937/person attaining treatment goals for moderate hypertension<br>(2) $994/person attaining treatment goals for severe hypertension | Cost-effective |
| Johannigman et al., 2010 | A 1-year before-and-after comparison: a structured medication therapy management (MTM) session and health education for patients with diabetes, hypertension, asthma, heart failure, or hyperlipidemia | Non-physician (pharmacist) | (1) Direct medical savings $306/person;<br>(2) Total savings $1,221/person. | Cost-saving |
| Bunting et al., 2008 | A 6-year before-and-after comparison: risk reduction education; regular, long-term | Non-physician (pharmacist) | Net savings $109/person annually | Cost-saving |

| | | | | |
|---|---|---|---|---|
| | follow-ups for patients with hypertension | | | |
| Munroe et al., 1997 | A 1-year observational study: targeted patient education, feedback and behavior modification, and communicate regularly with patients' physicians to enable early intervention for drug-related problems. | Non-physician (pharmacist) | Net savings $3,581–$7,299/person | Cost-saving |
| Educational interventions for lifestyle modification and medication adherence | | | | |
| Allen et al., 2014 | A 3-year randomized trial: tailored educational counselling for lifestyle modification, medication adherence for patients with CVD, type 2 diabetes and hypertension | Non-physician (nurses/com-munity health workers) | (1) $114/mm Hg drop in SBP;<br>(2) $236/mm Hg drop in DBP. | Cost-effective |
| Hollenbeak et al., 2014 | A 6-month randomized trial with a Markov model in 10 years: Behavioral support and education through phone calls for African American patients aged 40–75 years with sustained, uncontrolled hypertension | Non-physician (peer coaches) | (1) $512,510/CHD event;<br>(2) $62/mm Hg drop in SBP;<br>(3) $13,986/LYS;<br>(4) $12,282/QALY. | Cost-effective depending on the WTP |

| | | | | |
|---|---|---|---|---|
| Self- monitoring interventions | | | | |
| Ritzwoller et al., 2013 | A 2-year randomized trial: Self-monitoring, and goal-oriented weight loss and blood pressure control intervention with moderate intensity, followed up with phone calls to high risk, low-income, inner city, minority patients who were both hypertensive and obese (71% were black/African American and 13% were Hispanic) | Non-physician | $727/mmHg drop in SBP | Cost-effective |
| Trogdon et al., 2012 | A 1-year and 10-year cost effectiveness model: patient education through interactive voice response technology and distribution of automated blood pressure monitors to high-risk plan members with uncontrolled hypertension | Non-physician | (1) $965/person under control;<br>(2) $52,769/LYG in 1 year;<br>(3) $2,337/LYG annually in 10 years | Cost-effective |

| | | | | |
|---|---|---|---|---|
| | Wang et al., 2012 | A 18-month randomized trial: telephone-based intervention groups using home BP tele monitoring for (1) behavioral management, (2) medication management, or (3) combined for patients with hypertension | Non-physician | Cost and effectiveness were not statistically significant between treatment group and control group | Not cost-effective at 18 months |
| Screening interventions | | | | | |
| | Eddy et al., 2011 | The 12-year Archimedes Model: individualized guidelines in the context of blood pressure management, followed with drugs, office visits and tests to 15,792 participants aged 45–64 years | Physician | (1) RBR is 1.43 (1.33–1.70);<br>(2) RSR is 1.65 (1.52–2.79);<br>(3) Savings $1.84 million | Cost-saving |
| | Wang et al., 2011 | A lifetime simulation model: Blood pressure screening and treatment in a cohort of 2,065,127 boys and 1,952,694 girls aged ≥15 years | Physician | Finding and treating the adolescents at highest risk ($21,734/QALY [boys] and $56,750/QALY [girls]) | Cost-effective |
| Non-U.S. studies | | | | | |
| Educational interventions for lifestyle modification | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Wang et al., 2013, China | A 1-year randomized trial: a customized, guideline-oriented training program including blood pressure measurements, risk factors, new cardiovascular and renal diseases, medical treatments, and lifestyle advices for patients with hypertension | Physician | Net savings $32/person in urban sites, $11/person in rural sites | Cost-saving |
| | Barton et al., 2012, UK | A 6-month randomized trial: providing information, advice and support aimed at changing beliefs and behavior to participants aged 18 years with at least one of five CVD risk factors | Non-physician (lay health trainers) | $17,215/QALY | Cost-effective |
| | Jafar et al., 2011, Pakistan | A randomized trial with a 2*2 factorial design: (1) combined home health education (HHE) plus trained general practitioner (GP); (2) HHE only; and (3) trained GP only to adults | Physician | (1) $29 (95% CI, $8–$125) /mm Hg drop in SBP;<br>$1,543/ CVD DALY | Cost-effective |

| | | | | |
|---|---|---|---|---|
| | aged ≥40 years with hypertension from middle- to low-income areas in Karac | | | |
| Perman et al., 2011, Argentina | A lifetime Markov model: providing personal and telephone contact with patients, support with non-pharmacological treatment such as diet and physical activity to middle-class patients aged ≥65 years | Non-physician (medical students) | $1,271/LYG | Cost-effective |
| Yosefy et al., 2003, Israel | A 1-year before-and-after comparison: enhancing the control of modifiable risk factors and follow up high-risk hypertensive patients | Physician | –$1,566/QALY; Net savings $942,608 | Cost-saving |
| Garcia-Pena et al., 2002, Mexico | A 6-month randomized trial: providing home visits who gave health and lifestyle advice to the subjects aged ≥60 years | Non-physician (nurses) | (1) $2/mm Hg drop in SBP; (2) $2/mm Hg drop in DBP. | Cost-effective |
| Educational interventions for medication adherence support | | | | |
| Schroeder et al., 2005, UK | A 1-year randomized trial: A nurse-led adherence support in hypertension for | Non-physician (nurses) | Effectiveness was not statistically significant; More expensive | Not cost-effective |

| | | | | |
|---|---|---|---|---|
| | women and men with uncontrolled hypertension | | | |
| Edwa, 1998, South Africa | A 1-year before-and-after comparison: providing hypertension drug management following treatment guideline to hypertensive patients | Physician and non-physician (pharmacist) | Net savings: $321,441. | Cost-saving |
| Educational interventions for lifestyle modification and medication adherence | | | | |
| Gaziano et al., 2014, South Africa | A lifetime Markov model: home visits to increase hypertension adherence for individuals with hypertension and aged 25–74 years | Non-physician (community health workers) | $321/DALY | Cost-effective |
| Bai et al., 2013, China | A 1-year before-and-after comparison: conducting educational sessions, supervision, and face-to-face consultation as necessary; standardize drug therapies; conduct follow-up visits to people with hypertension | Physician | $0.62–$0.85/mm Hg drop in SBP, $1.08–$1.66 /mm Hg drop in DBP. | Cost-effective |
| Houle et al., 2012, Canada | A 1-year simulation model: a pharmacist-nurse team along with a hypertension education brochure | Non-physician (pharmacist/ nurse) | Net savings $291/person for 1 year;<br>$243/person for 6 months | Cost-saving |

| | | | | |
|---|---|---|---|---|
| | provide cardiovascular risk reduction counseling to hypertensive patients | | | |
| Yamagishi et al., 2012, Japan | A 24-year observational study: a nation-wide, community-based intensive hypertension detection and control program in Japan | Physician and non-physician | Net savings $34,915/person | Cost-saving |
| Lim et al., 2011, South Korea | A 1-year probability tree model: providing health educations: stop-smoking and drinking, proper nutrition, importance of accurate medication, stress management, and continuous medication to adult patients with hypertension | Physician and non-physician | The net benefit –$6,185; CBR was 1.3:1. | Not cost-effective |
| Huang Y, Ren J, 2010, China | A 3-year before-and-after comparison: providing a community-based prevention program to hypertension patients | Physician | CBR: 1:3.6 | Cost-effective |
| Population-based screening interventions | | | | |
| Gu et al., 2015, China | A 10-year China CVD policy model: providing hypertension screening, essential medicines program | Physician | (1) Control blood pressure in all persons with CHD /stroke: cost-saving; | Cost-effective for treating all stage II hypertension |

| | | | | |
|---|---|---|---|---|
| | implementation, hypertension control program administration to untreated hypertensive adults aged 35–84 years | | (2) Treat all stage II hypertension patients: $9,000 ($7,000–$12,000)/QALY; (3) Treat all stage II and stage I: $13,000 ($10,000–$18,000)/QALY | |
| Howard et al., 2010, Australia | A lifetime Markov model: providing primary care screening for hypertension (between ages 50 and 69 years) plus intensive blood pressure management | Physician and non-physician | $613/QALY | Cost-effective |
| Target outreach screening interventions | | | | |
| Zhao et al., 2014, Australia | A 10-year observational study with propensity score matching: providing primary care utilization for chronic disease management in remote indigenous communities to indigenous residents aged ≥15 years | Physician and non-physician | $1,131–$1,974/YLL for medium level of primary care; $3,422–$5,637/YLL for high level of primary care | Cost-effective |
| Yosefy et al., 2003, Israel | A 2-year before-and-after comparison: examining 12,202 subjects, providing an outreach promotion of health education to | Physician and non-physician | –$3,257/LYS; CBR: 0.22:1 | Cost-saving |

| | |
|---|---|
| | 3,506 identified patients with one or more CVD risk factors |

ICER, incremental cost-effectiveness ratio; SBP, systolic blood pressure; DBP, diastolic blood pressure; RBR, relative benefit ratio; RSR, relative savings ratio; CBR, cost-benefit ratio; EI, educational intervention; SM, self-monitoring of blood pressure and follow-up intervention; SI, screening interventions; MNT, medical nutrition therapy; WTP, willingness to pay; LYS, life year saved; LYG, life year gained; QALY, quality-adjusted life years; YLL, years of life lost; DALY, disability-adjusted life years.

**Appendix Table 2.** Quality of the Cost-effectiveness Studies on Community-based Interventions for Hypertension Control (N=34)

| Criteria | Studies, N | Percentage |
|---|---|---|
| 1. Is the study population clearly described? | 34 | 100.00 |
| 2. Are competing alternatives clearly described? | 25 | 73.53 |
| 3. Is a well-defined research question posed in answerable form? | 34 | 100.00 |
| 4. Is the economic study design appropriate to the stated objective? | 23 | 67.65 |
| 5. Is the chosen time horizon appropriate in order to include relevant costs and consequences? | 31 | 91.18 |
| 6. Is the actual perspective chosen appropriate? | 34 | 100.00 |
| 7. Are all important and relevant costs for each alternative identified? | 31 | 91.18 |
| 8. Are all costs measured appropriately in physical units? | 34 | 100.00 |
| 9. Are costs valued appropriately? | 16 | 47.06 |
| 10. Are all important and relevant outcomes for each alternative identified? | 23 | 67.65 |
| 11. Are all outcomes measured appropriately? | 34 | 100.00 |
| 12. Are outcomes valued appropriately? | 34 | 100.00 |
| 13. Is an incremental analysis of costs and outcomes of alternatives performed? | 31 | 91.18 |
| 14. Are all future costs and outcomes discounted appropriately? | 29 | 85.29 |
| 15. Are all important variables, whose values are uncertain, appropriately subjected to sensitivity analysis? | 19 | 55.88 |
| 16. Do the conclusions follow from the data reported? | 21 | 61.76 |
| 17. Does the study discuss the generalizability of the results to other settings and patient/client groups? | 26 | 76.47 |
| 18. Does the article indicate that there is no potential conflict of interest of study researcher(s) and funder(s)? | 16 | 47.06 |
| 19. Are ethical and distributional issues discussed appropriately? | 26 | 76.47 |