Evidence Report

Contract No. 290-02-0009, Task Order #1
Prepared by Minnesota Evidence-based Practice Center, Minneapolis, Minnesota

Economic Incentives for Preventive Care

Appendixes

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Appendix B. Exact Search Strings

Literature Search Strategy—MEDLINE®

Number	Search History	Results
1	Reimbursement, Incentive	687
2	Capitation Fee	3628
3	Physician Incentive Plans	1096
4	Physician's Practice Patterns	12718
5	incent$	6243
6	Income	30787
7	Reimbursement Mechanisms	18969
8	Fees, Medical	4601
9	Cost Sharing	1684
10	Choice Behavior	14434
11	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10	86379
12	Preventive Health Services	149047
13	Preventive Medicine	12582
14	Primary Prevention	68204
15	Health Promotion	20460
16	Health Behavior	41883
17	Patient Compliance	23515
18	Prenatal Care	11371
19	12 or 13 or 14 or 15 or 16 or 17 or 18	323248
20	11 and 19	4649
21	Limit to English language	4400
22	Limit to year 1966-2002, human, non-dentistry	3804

Appendix C. Screening Form

Author_____ Study ID_____
Journal_____
Year Published_____ Reviewer_____

Article source:	MEDLINE®	PsychINFO	EconLit
	Review reference list	Article reference list	
	Cochrane Library	Personal files	
Funding source:	Government	Corporate	Foundation
	Non-funded	Unknown	

Verification/Selection of Study Eligibility (for structured reviews):

Preventive care	Y	N
Economic incentive	Y	N
Single payment system	Y	N
Randomization	Y	N
Control group	Y	N

Type of Study:

Randomized controlled experiment	Y	N
Quasi-experimental		
Retrospective	Y	N
Prospective	Y	N
Observational		
Cross-sectional	Y	N
Evaluation	Y	N

Economic Incentives Article Abstraction Form

(Provider version 1)

Economic Incentives for Prevention

University of Minnesota EPC

Preventive Behavior Target: (circle all that apply)

Simple	Complex (sustained effort over time)
Immunization	Disease prevention (type)_____
Cancer Screening	Screening - other_____
Pre-natal/well-child care	Health promotion/lifestyle_____

Intervention Target: (circle all that apply)

Consumer: physician solo group staff in-training unclear
nurse staff
primary care practitioner not primary care practitioner

Consumer: <18 working age 65+

Organization

Other_____

Patient Population:

Mean Age:_____ Age Range:_____

Gender: % Male _____ % Female _____

Race/Ethnic Group:

Caucasian____ Black____ Asian____ Hispanic___ Other____

Patient Source:

Medicare Medicaid WIC eligible Plan enrollees

Clinic/System Patients: hospital community clinic provider lists

Community Other_____

Country: US _____ Non-US_____

Setting: (circle all that apply)

Hospital	Office/Clinic	Academic	Mixed
Extended Care Facility	Rural	Urban	Suburban
Solo practice	Group practice	Staff clinic	Free clinic
Community center	Unclear/not stated		

Other (ex: school)_____

Reimbursement system:

FFS	Medicare	Medicaid	HMO
MCO, not HMO	Mixed reimbursement system		Other
Not reported			

Appendix D. Abstraction Forms, Continued

Participants and Baseline Characteristics:
(describe) _____

Number Eligible_____
Number Invited_____
Number Enrolled_____
Response Rate_____
Number subjects completed trial_____
Mean Age: _____ Age Range: _____
Gender: % Male _____ % Female _____
Race/Ethnic Group:
Caucasian____ Black____ Asian____ Hispanic___ Other____
Inclusion criteria:
_____
_____
Exclusion criteria:
_____
_____

Intervention(s):
Consumer:
Economic incentive only Multi-faceted intervention

Gift:	$ value_____	frequency_____	type_____
Lottery:	$ value_____	frequency_____	type_____
Cash Incentive:	$ value_____	frequency_____	total_____
Coupons/In kind:	$ value_____	frequency_____	type_____

Other:_____
Required behavior_____
Required outcome_____

Provider:
Economic incentive only Multi-faceted intervention
Performance bonus – target outcome:_____ $value_____
Performance bonus – target behavior:_____ $value_____
Per-input bonus_____ $ value_____ total_____
FFS vs. salary/capitation _____ Other:_____

Unit of randomization:_____

Treatment/control groups (enrolled):
Group 1_____ N=_____ N=_____
Group 2_____ N=_____ N=_____
Group 3_____ N=_____ N=_____
Group 4_____ N=_____ N=_____
Control Y N
Comparison Group Y N

Appendix D. Abstraction Forms, Continued

Use of Comparison Group:

[ ] Before/after study group serves as its own comparison

[ ] Control and treatment group from same population

Unmatched Matched

[ ] Control and treatment group from different populations

Unmatched Matched

[ ] Descriptive study, no comparison group

[ ] Other

Follow-up period:_____

Specification of Research Question(s):

Statement of research question:

Primary:_____

_____

Secondary:_____

_____

Defn: Preventive Care:_____

_____

Defn: Economic Incentive:_____

_____

Outcome Measures:_____

_____

Duration between intervention and measurement of outcomes _____

Key Factors (affecting outcome measures):_____

_____

Stages of Change_____

Statistical methodology: (describe)_____

_____

Unit of Allocation:

Unit of Analysis:

Analysis Denominator:

If not same units, any statistical corrections made for clustering? Y N

Sample-size justification or power calculation? Y N

Costs/benefit analysis? Y N

(describe)_____

Sub-group analysis? Y N

(describe)_____

Reported Drop-outs? Y N

Intention to treat? Y N

Appendix D. Abstraction Forms, Continued

Findings: (note which group serves as comparison)

(record sd or se, range, p-value, odds ratios, if provided)	Group 1	Group 2	Group 3	Group 4
Outcome 1 Before: After: Significance: Precision:				
Outcome 2 Before: After: Significance: Precision:				
Outcome 3 Before: After: Significance: Precision:				
Outcome 4 Before: After: Significance: Precision:				

Dose Response:_____

_____

_____

Economic Incentives Article Abstraction Form (Consumer version 1)

Economic Incentives for Prevention
University of Minnesota EPC

Preventive Behavior Target: (circle all that apply)

Simple Complex (sustained effort over time)
Immunization Cancer Screening Pre-natal/well-child care
Screening – other_____
Health promotion/lifestyle_____ Other_____

Intervention Target:

Consumer: child adolescent parent working age 65+
Other_____

Participant Characteristics:
(describe)_____

		Used in analysis?	
Mean Age:_____	Age Range:_____	Y	N
Gender:	% Male _____ % Female _____	Y	N
Race/Ethnic Group:		Y	N
Caucasian_____	Black_____ Asian_____		
Hispanic_____	Other_____		
SES:	Income Occupation	Y	N
Vulnerable population: _____		Y	N
Geographic:	Rural Urban Suburban	Y	N

Country: US _____ Non-US_____
Defn of patient (ex: seen last 6 months)_____
Source:
Eligible: Medicare Medicaid WIC
Clinic/System Patients: hospital community clinic
provider lists
Other:_____

Number Eligible_____
Number Invited_____
Number Enrolled_____
Response Rate_____
Number subjects completed trial_____

Evidence of attrition bias concerns?_____

Setting: (circle all that apply)

Hospital	Office/Clinic	Academic	Mixed
Extended Care Facility	Rural	Urban	Suburban
Solo practice	Group practice	Staff clinic	Free clinic
Community center	Unclear/not stated		

Other (ex: school)_____

Appendix D. Abstraction Forms, Continued

Randomization:
Unit of randomization:_____

Treatment/control groups: enrolled completed
Group 1_____ N=_____ N=_____
Group 2_____ N=_____ N=_____
Group 3_____ N=_____ N=_____
Group 4_____ N=_____ N=_____

Follow-up period:_____

Intervention(s):
Consumer:
Economic incentive only Multi-faceted intervention
Gift: $ value_____ frequency_____ type_____
Lottery: $ value_____ frequency_____ type_____
Cash Incentive: $ value_____ frequency_____ total_____
Coupons/In kind: $ value_____ frequency_____ type_____
Other:_____
Required behavior_____
Required outcome_____
Incentive focus: reward barrier removal unclear
Incentive timed to correspond with documented habit formation period? Y N
Incentive appropriate and coordinated with identified stage of change? Y N

Specification of Research Question(s):
Defn: Preventive Care:_____
_____
Defn: Economic Incentive:_____
_____
Theoretical basis (eg, self-efficacy theory, health behavior model, Prochaska, etc.)
_____
Outcome Measures: Pre Post
1)_____ _____ _____
2)_____ _____ _____
3)_____ _____ _____
4)_____ _____ _____
Duration between intervention and measurement of outcomes_____

Key Factors (affecting outcome measures):_____
_____

Appendix D. Abstraction Forms, Continued

Statistical methodology: (describe)_____

_____

Unit of Allocation:			
Unit of Analysis:			
Analysis Denominator:			
If not same units, any statistical corrections made for clustering?	Y	N	
Sample-size justification or power calculation?	Y	N	Unclear
Costs/benefit analysis? (describe)_____	Y	N	
Sub-group analysis? (describe)_____	Y	N	
Reported Drop-outs?	Y	N	Unclear
Intention to treat?	Y	N	Unclear

Findings: (note which group serves as comparison)

(record sd or se, range, p-value, odds ratios, if provided)	Group 1	Group 2	Group 3	Group 4
Outcome 1 Before: After: Significance: Precision:				
Outcome 2 Before: After: Significance: Precision:				
Outcome 3 Before: After: Significance: Precision:				
Outcome 4 Before: After: Significance: Precision:				

Dose Response:_____

Appendix D. Abstraction Forms, Continued

Notes on findings, conclusions, limitations:

Reference Articles to pull:

Appendix E. Algorithm

Domain Elements	Score (1-5 (poor -appropriate)	Importance Category
Study Data Structure: ___ Cross-Section ___ Cross Section/Time Series		
1. Is there an appropriate control group in the data?		1
2. Can the treatment be viewed as independent of factors unobserved to the researcher or did the researcher employ appropriate methods to correct for selection/attrition/omitted variable bias in the treatment?		1
3. Does the study's conclusions follow from the statistical estimates?		1
4. Is the set of control variables appropriate?		2
5. How closely does the study's objective(s) match the research issue of interest?		2
6. How representative of the relevant population is the sample population?		2
7. Are the outcome variables reliable measures of the outcome of interest?		2
8. Are the treatment variables reliable measures of the intervention of interest?		2
9. Are the statistical methods for estimating the effect of the treatment appropriate given the nature of the data?		2
10. How precise are the coefficient estimates?		2
11. Are the standard errors appropriately calculated given the estimation methodology and the structure of the data?		2
Study Category		

Study Category:

1. Very Informative (a score of at least 4 in all importance category 1 segments and a mean of 4 across the remaining segments)

2. Informative but questions remain on generalizablity of findings (mean score of 3.5 across all categories and at least a 3 in all categories)

3. Not Informative (all other)

Appendix F. Evidence Tables, Continued

Evidence Table 1. Included provider studies

Article ID First Author Country	Research Design and Quality	Prevention Category	Prevention Target	Intervention	Follow-up Period	Ns Practices Providers Patients	Group Assignment	Outcomes
ID# 001 Morrow et al., 1995[47] US	Three year evaluation, before-after study Score = 2	Simple	MMR immuni-zation, cholesterol screening	Adjusted capitation rates	Three years 1987-1990	Practices: 418 for MMR, 271 for cholesterol	Group 1) Capitation rates adjusted by quality of care performance measures; audit determines following year cap rate	Significant finding for adjusted capitation: 1) Increase in percent of charts in office in compliance p<.05 2) Increase in percent of offices with <90% compliance p<.05
ID#003 Hillman et al., 1998[45] US	RCT Score = 3	Simple	Cancer screening	Performance bonus - target outcome	18 months	Practices: 52 (<100 MDs, 1200 charts)	Group 1) Control n=26 Group 2) Performance bonus - target outcome. 20% of capitation for three highest aggregate compliance scores; 10% for next three highest and three offices most improved n=26	No significant differences between groups for: * Percent of charts in compliance with breast exam indicators * Percent of charts in compliance with mammography indicators * Percent of charts in compliance with pap smear indicators * Percent of charts in compliance with colorectal exam indicators * All groups showed improvement over time p<.001. * Sub-group analysis: Group practices had greater # of charts in compliance with indicators p=.048
ID#004 Kouides et al., 1998[49] US	RCT Score = 3	Simple	Flu immuni-zation	Performance bonus - target outcome	One flu season	Practices: 54	Group 1) Control n=27 Group 2) Performance bonus - target outcome. 10% additional reimbursement per shot provided if ≤ 70% immunization rate. 20% if ≤85% - n=27	Significant findings for performance bonus - target outcome: 1) change in percent immunized, p=.03 2) by regression, 7.1% of increase in documented immunization due to intervention, p=.05

Appendix F. Evidence Tables, Continued

Article ID First Author Country	Research Design and Quality	Prevention Category	Prevention Target	Intervention	Follow-up Period	Ns Practices Providers Patients	Group Assignment	Outcomes
ID#005 Fairbrother et al., 1999[43] US	RCT Score = 3	Simple	Child immuni-zations – up to date (UTD) coverage of scheduled shots	Group 2) performance bonus - target outcome. Group 3) per-input bonus	8 months	MDs: 60 (patients from 2948 to 3019)	Group 1) Control n=15 Group 2) Performance bonus - target outcome and feedback $1000 for 20% increase in UTD, $2500 for 40%, $5000 for reaching 80% coverage. n=15 Group 3) Per-input bonus and feedback. $5 per administered shot and $15 per office visit with completed coverage n=15 Group 4) Feedback only n=15	Significant findings for performance bonus - target outcome: 1) Percent of children documented UTD. p<.01 2) Percent vaccines administered outside the practice p<.05 * No significant differences for percent missed opportunity to immunize
ID#006 Fairbrother et al., 2001[44] US	RCT Score = 3	Simple	Child immuni-zations – up to date (UTD) coverage of scheduled shots	Group 2) performance bonus - target outcome. Group 3) per-input bonus	16 months	MDs: 57 (patients from 2792 to 2866)	Group 1) Control n=24 enrolled, n=21 completed Group 2) Performance bonus - target outcome and feedback $1000 for 35% increase in UTD, $2500 for 45%, $5000 for reaching 80% cover-age, $7500 reaching 90%. n=26 enrolled, n=24 completed Group 3) Per-input bonus and feedback. $5 per administered shot and $15 per office visit with completed coverage n=14 enrolled, n=12 completed	Significant findings for performance bonus - target outcome: 1) Percent of children documented UTD. p<.05 2) Percent vaccines administered outside the practice p<.01 Significant findings for performance bonus - per input: 1) Percent of children documented UTD. p<.01 * No significant difference for percent missed opportunity to immunize

Appendix F. Evidence Tables, Continued

Article ID First Author Country	Research Design and Quality	Prevention Category	Prevention Target	Intervention	Follow-up Period	Ns Practices Providers Patients	Group Assignment	Outcomes
ID#007 Hillman et al., 1999[46] US	RCT Score = 3	Simple	Well child, including immuni-zations	Performance bonus - target outcome	18 months	Practices: 49	Group 1) Control n=17 enrolled, n=15 completed Group 2) Performance bonus - target outcome plus feedback; 20% of capitation for three highest aggregate compliance scores; 10% for next three highest and three offices most improved. n=19 enrolled and completed Group 3) Feedback only n=17 enrolled, n=15 completed	No significant differences between groups for: * Total compliance score * Immunization compliance score * Other preventive care indicators compliance * Sub-group analysis 1) Group practices had higher immunization rates than solo p<.05 2) Pediatricians had higher overall compliance scores than other MDs p<.05
ID#008 Ritchie et al., 1992[51] UK	Time series Score = 2	Simple	Child immuni-zations	Performance bonus/ sanction - target payment	1986-1992	Practices: 95 General Practitioners: 313	Target payment - lump sum payment at 70% and 90% coverage levels; implemented 1990	* No change in trend from new contract for immunization rates for two and five year olds. Trend stabilized in 1991 * Removed seasonal pattern for five year olds (school-based) * Both two and five year olds – General practitioners and practices performing below 70% improved after 1990 * Only practice size showed relationship - solo more likely to not reach target levels * Target payments may have helped achieve an accelerated immunization schedule

Appendix F. Evidence Tables, Continued

Article ID First Author Country	Research Design and Quality	Prevention Category	Prevention Target	Intervention	Follow-up Period	Ns Practices Providers Patients	Group Assignment	Outcomes
ID#011 Grady et al.,[48] US	RCT Score = 2	Simple	Cancer screening	Performance bonus - target behavior	First of three year study	Practices: 61 (Providers: 95, Patients 11,4426)	Group 1) Control – education only n=23 enrolled and completed Group 2) Education and chart sticker cues n=21 enrolled, n=18 completed Group 3) Education, chart sticker cues, feedback, token bonus of $50 for 50% mammography referral rate, n=21 enrolled, n=20 completed	No significant difference for performance bonus - target behavior: * Mammography referral rate * Mammography completion * Mammography compliance
ID#018 Fox & Phua[50] US	Three-year evaluation, before-after study Score = 2	Simple	Prenatal care	Fee increase	1985-1987	Patients: 1985 - 1332, 1986 - 1396, 1987 - 1532	Group 1) Raised fees for delivery from $265 to $795 and prenatal visits from $17 to $21	No significant change for raised fees for: * Number of prenatal visits * Average number of prenatal visits dropped. Baltimore City dropped from 6.82 to 4.71 * Large increase in prenatal care out-state areas

Appendix F. Evidence Tables, Continued

Evidence Table 2. Included consumer studies data

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#074 Sciacca et al., 1995[66] US	Complex	Reward	Adhering	Income behavior	None	Breast-feeding	Coupon	Required behavior: complete educational program and self-reported breast feeding levels.	Unknown contribution from education, incentive, social support, and incentive to social support.	No
#032 Dey et al., 1999[102] UK	Complex	Barrier removal - structural	Adhering	Purchasing behavior	None	Smoking cessation	Free/reduced medical	Required behavior - pick up patches from pharmacy		No
#071 Jeffery & French, 1999[74] US	Complex	Barrier removal - attitudinal	Adhering	Income behavior	Behavioralist	Obesity prevention	Lottery	Required behavior - return postcard that was attached to the newsletter		No
#072 Jeffery et al., 1998[97] US	Complex	Reward	Adhering	Income behavior	Behavioralist	Weight loss	Cash	Required behavior - attend supervised exercised sessions		No

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#078 Wing et al., 1996[91] US	Complex	Reward	Adhering	Income behavior	Behavioralist	Exercise	Lottery	Required behavior - attend exercise sessions. Travel lottery chances based on how many sessions attended		No
#091 Hughes et al., 1991[76] US	Complex	Barrier removal - structural	Adhering	Purchasing behavior	None	Smoking cessation	Free/reduced medical	Required behavior – purchase gum		Yes - uptake
#107 Follick et al., 1984[109] US	Complex	Reward/ negative reinforce-ment/ punishment	Adhering	Purchasing behavior	Behavioralist	Weight loss	Monetary contract (forfeit money to be successful)	Required behavior - attend weight loss educational sessions		Yes – uptake *No reporting of contract payments
#104 Jeffery et al., 1978[106] US	Complex	Negative reinforce-ment/ punishment	Adhering/ outcome	Purchasing behavior	Behavioralist	Weight loss	Monetary contract	Required behavior – attendance. Required Outcome – calorie restriction and weight loss goals		No. *"Subjects weren't unhappy with it." *Weight loss goal subjects most likely to forfeit money
#089 Anderson et al., 2001[102] US	Complex	Barrier removal - structural	Facilitating	Purchasing behavior	None	Nutrition	Coupon	Required behavior - purchase food		Yes – uptake *87% redeemed at least some coupons, 58% redeemed all

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#061 Francisco et al., 1994[93] US	Complex	Reward	Outcome	Income behavior	None	Cholesterol level	Lottery	Required out-come - to participate in lottery, lower serum cholesterol by 20%, or be under 200, within 6 months		No *only 6 of 29 lottery eligible agreed in survey the lottery was important to their behavior
#069 Jeffery, Forster, French et al., 1993[105] US	Complex	Reward	Outcome	Income behavior	Behavioralist	Weight loss	Cash	Required outcome - lose weight and maintain loss		No
#102 Jeffery et al., 1984[107] US	Complex	Negative reinforce-ment/ punishment	Outcome	Purchasing behavior	Behavioralist	Weight Loss	Monetary contracts	Required outcome - weight loss		Yes – desirability
#103 Jeffery et al., 1983[108] US	Complex	Reward/ punishment	Outcome	Purchasing behavior	Behavioralist	Weight loss	Monetary contract (forfeit money to be successful)	Required outcome - weight loss		Yes - desirability
#108 Windsor et al., 1988[96] US	Complex	Reward	Outcome	Income behavior	None	Smoking cessation	Cash	Required outcome - abstinence		No

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#062 Gomel et al., 1993[69] New Zealand	Complex	Reward	Outcome	Income behavior	Prochaska - no justification of chosen rewards	CVD prevention	Lottery + competition	Required behavior: self-reported progress toward or meeting lifestyle change goals	Unknown contribution from incentive, positive or negative team peer pressure, positive or negative effect of results reported publicly within the worksite	No
#065 Koffman et al., 1998[68] US	Complex	Reward	Outcome	Income behavior	Prochaska, Bandura - no justification of chosen rewards	Smoking cessation	Cash + competition	Required outcome: lab-verified abstinence	Unknown contribution from incentive, positive or negative team peer pressure, positive or negative effect of results reported publicly within the worksite	No
#066 Jeffery, Forster, Baxter et al., 1993[98] US	Complex	Negative reinforce-ment/ punishment	Outcome	Purchasing behavior	Behavioralist	Smoking cessation/ obesity	Monetary contract:	Required outcome: lab-verified smoking reduction goals or weight loss goals		No

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#079 Donatelle et al., 2000[67] US	Complex	Reward	Outcome	Income behavior	Behavioral change - no justification of chosen rewards	Smoking cessation	Cash	Required outcome: lab-verified abstinence	Unknown contribution from incentive, social support, and incentive to social support	No
#082 Harland et al., 1999[99] UK	Complex	Barrier removal - attitudinal	Participating	Income behavior	None	Exercise	Coupon	Required behavior - attend 40 minute motivational interviews		No *44% of group offered up to six vouchers used vouchers vs. 27% of group offered only one voucher
#105 Stitzer & Bigelow, 1983[75] US	Complex	Reward	Participating	Income behavior	Behavioralist	Smoking cessation	Cash	Required out-come - reduce CO levels to 50% of baseline		Yes - uptake and desirability *No reporting on payments made
#084 Gottlieb & Nelson, 1990[71] US	Complex	Reward	Participating	Income behavior	None	Smoking cessation	Gift + competition	Required behavior: Turkey buffet to work-sites with highest recruitment rate; pooled kitty to split among quitters at work-site with the highest proportion of quitters	Unknown contribution from competition, positive or negative team peer pressure. Recruitment procedures differed at each site	No

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#109 Curry et al., 1991[72] US	Complex	Reward	Participating	Income behavior	Deci & Ryan Intrinsic/ Extrinsic motivation; Bandura's self-efficacy	Smoking cessation	Gift + lottery	Required behavior: return unit progress reports of self-help program		No
#110 Klesges et al., 1987[70] US	Complex	Reward	Participating/ outcome	Income behavior	None	Smoking cessation	Cash + competition	Required behavior: team with greatest percent of initial participants completing program; highest quit rate at 6 months; highest abstinence rate at 6 months	Unknown contribution from incentive, positive or negative team peer pressure, positive or negative effect of results reported publicly within the worksite	No
#096 Owen et al., 1990[73] Australia	Simple	Reward	Participating	Income behavior	Social learning theory	Cholesterol level	Lottery	Required behavior - show up for retest		No. *Only 156 of the 1001 who showed for retest turned in lottery coupon
#075 Deren et al., 1994[52] US	Simple	Reward	Participating	Income behavior	None	AIDS prevention	1) Cash 2) Coupon	Required behavior - attend educational sessions		Yes - desirability

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#076 Dahl et al., 1999[101] US	Simple	Reward	Participating	Purchasing behavior	None/test if money-savings will overcome barriers such as embar-rassment	STD prevention	Coupon	Required behavior – purchase package of 12 condoms		No
#077 Kamb et al., 1998[64] US	Simple	Reward	Participating	Income behavior	Extrinsic/ Intrinsic motivation; focus group determined size of meaningful rewards	HIV/STD prevention	1) Cash 2) Coupon	Required behavior - attend one 90 minute group education session and one 60 minute individual session		Yes - desirability
#092 Emont & Cummings, 1992[92] US	Simple	Reward	Participating	Income behavior	None	Smoking cessation	Lottery	Required behavior - attend non-smoking clinic		Yes – uptake *only one participant reported the prize was a significant factor
#043 Birkhead et al., 1995[57] US	Simple	Punishment	Adhering	Income behavior	None	Immunization	Must come to WIC offices monthly to pick up allotment of vouchers (normal every 2 months)	Required behavior - immunize child		No *Only 8 of 178 children dropped out during the disincentive
#049 Kerpelman et al., 2000[58] US	Simple	Punishment	Adhering	Income behavior	None	Immunization	Lose AFDC benefits provided to non-immunized child	Required Behavior - provide proof of immunization		No *17 sanctions warnings, 11 actual sanctions affecting 8 of 1500 families

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#053 Kaplan et al., 2000[100] US	Simple	Barrier removal	Adhering	Purchasing behavior	Health belief model, Anderson's framework of utilization	Followup of abnormal pap	1) Coupon 2) Free/ reduced medical	Required behavior: for voucher, attend at least one followup visit. No requirement for free bus passes	Unknown contributions of incentive vs. intensive contact. Non-equivalent sites	No
#034 Yokley & Glenwick, 1984[62] US	Simple	Reward	Adhering	Income behavior	None	Immunization	1) Coupon 2) Lottery	Required Behaviors – 1) Leave child at clinic for shots and day care period, 2) Bring child in for shots		Yes - desirability
#038 Malotte et al., 1999[54] US	Simple	Reward	Adhering	Income behavior	Reasoned action and behavioral	Tuberculosis screening	1) Cash 2) Coupon 1 3) Coupon 2	Required behavior - return for a reading of the Mantoux test		Yes - desirability
#048 Moran et al., 1996[63] US	Simple	Reward	Adhering	Income behavior	Carter et al. decision model for factors considered important by elderly	Immunization	Lottery	Required behavior - receive shot at clinic		No
#054 Stevens-Simon et al., 1994[56] US	Simple	Reward	Adhering	Income Behavior	None	Followup: post-partum exam	Gift	Required behavior - attend post-partum appointment		No

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#055 Smith et al., 1990[55] US	Simple	Reward	Adhering	Income behavior	None/ jewelry chosen by focus group	Followup: post-partum exam	1) Coupon 2) Gift	Required behavior - attend post-partum appointment on assigned day		No *Child-based formula incentive was more effective
#094 Laken & Ager, 1995[65] US	Simple	Reward	Adhering	Income behavior	None	Prenatal care	1) Coupon 2) Coupon + lottery	Required behavior - attend prenatal and postpartum check		Yes - uptake and desirability
#106 Malotte et al., 1998[53] US	Simple	Reward	Adhering	Income behavior	Theory of reasoned action	Tuberculosis screening	1) Cash 1 2) Cash 2	Required behavior - return for skin test reading		Yes - desirability
#044 Hutchins et al., 1999[110] US	Simple	Punishment	Adhering	Income behavior	None	Immunization	Must come to WIC offices monthly to pick up allotment of vouchers (normal every 3 months)	Required behavior - immunize child		No
#029 Freedman & Mitchell, 1994[59] US	Simple	Barrier removal - structural	Facilitating	Purchasing behavior	None	Followup: cancer screening	Coupon	Required behavior - return completed fecal occult blood test within 3 months		Yes - uptake

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Theoretical Incentive Definition	Functional Incentive Definition	Economic Definition	Theory/ Justification	Prevention Target	Intervention	Incentive Condition	Confounders	Direct Test of Incentive Uptake or Desirability
#037 Satterthwaite, 1997[104] New Zealand	Simple	Barrier removal - structural	Facilitating	Purchasing behavior	None	Immunization	Free/reduced medical	Required behavior - receive flu shot		Yes - uptake
#047 Nexoe et al., 1997[78] Denmark	Simple	Barrier removal - structural	Facilitating	Purchasing behavior	None	Immunization	Free/reduced medical	Required behavior - receive flu shot		Yes - uptake
#051 Marcus et al., 1992[60] US	Simple	Barrier removal - structural	Facilitating	Income behavior - cognitive problem if didn't earn income	Health belief model, reasoned action	Followup: cancer screening	Coupon	Nothing required - mailed with followup reminder; may be used for other purposes		No *Self-report 33% used bus passes
#052 Marcus et al., 1998[61] US	Simple	Barrier removal - structural	Facilitating	Purchasing behavior	None	Followup: cancer screening	Free/reduced medical	Required behavior - attend at least one followup visit		No *Vouchers used by 41.7% of those eligible
#095 Melnikow et al., 1997[77] US	Simple	Barrier removal - structural	Facilitating	Purchasing behavior	None	Prenatal care	1) Coupon 2) Gift	Required behavior - attend first prenatal clinic visit		No *Only 1 of 24 taxi vouchers re-deemed. Log regression for confounders showed no significance
#042 Mayer et al., 1994[94] US	Simple	Reward	Participating	Income behavior	None	Cancer screening – mammog-raphy	Gift	Required behavior - complete mammog-raphy		No *Only 10% redeemed coupon for the kit
#050 Mayer & Kellogg, 1989[95] US	Simple	Reward	Participating	Income behavior	None	Cancer screening – mammog-raphy	Gift	Required behavior - complete mammog-raphy		No *Only 75% eligible collected the kit

Appendix F. Evidence Tables, Continued

Evidence Table 3. Included consumer studies outcomes

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#074 Sciacca et al., 1995[66] US	Complex	Breast feeding	Gifts and raffles of high frequency and considerable value - from $15 hair cuts to raffle for trip for two on Grand Canyon Railway. SO Partner also received incentives for attending.	Required behavior: complete educational program and self-reported breastfeeding levels	Group 1) Control - usual education n=29 completed Group 2) Education with a significant other (partner, parent, etc) plus incentives, n=26 completed	Significant Findings: * Differences between groups in exclusive breast feeding and exclusive formula feeding behaviors at discharge, two week, six week, and three month post-partum from p=.000 to p=.023
#032 Dey et al., 1999[103] UK	Complex	Smoking cessation	Free nicotine patches for 12 weeks	Required behavior - pick up patches from pharmacy	Group 1) counseling and prescription, n=39 Group 2) Counseling and free patch, n=58	No significant difference between groups * Rate of self-reported abstinence * Lab-confirmed abstinence
#071 Jeffery & French, 1999[74] US	Complex	Obesity prevention	Lottery: $100, one per month for a 1/10 chance over three years	Required behavior - return postcard that was attached to the newsletter	Group 1) Control, standard behavioral therapy (SBT), n=414 Group 2) SBT + monthly educational newsletter, n=197 Group 3) SBT + newsletter + lottery, n=198	Significant Findings: * Response rate of returned postcards (direct measure of incentive) Group 2 - 65%, Group 3 - 71%, p<.05 * No significant differences for weight gain or behavior changes, though change was in the right direction
#072 Jeffery et al., 1998[97] US	Complex	Weight loss	Cash Incentive: Graduated payments of $1 to $3 per exercise session, paid monthly, 222 total possible walks, $266 potential total per person	Required behavior - attend supervised exercised sessions	Group 1) Control. Standard behavioral therapy (SBT), n=40 Group 2) SBT + Supervised exercise, n=41 Group 3) SBT + personal trainer, n=42 Group 4) SBT + incentive, n=37 Group 5) SBT + trainer + incentive, n=36	No significant findings for incentives * Self-reported exercise behavior * Body weight * Exercise session attendance

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#078 Wing et al., 1996[91] US	Complex	Exercise	Lottery: one $50 gift certificate (unknown type) at each exercise session and one $2,000 travel certificate	Required behavior - attend exercise sessions. Travel lottery chances based on how many sessions attended	Group 1) 24 week programs with group meetings and three supervised exercise sessions per week, n=16 Group 2) Plus Incentive, n=21	No significant difference between groups * Weight loss * Attendance at exercise sessions
#091 Hughes et al., 1991[76] US	Complex	Smoking cessation	Free or reduced price for nicotine gum; $0, $6 or $20 vs full price of $24	Required behavior – purchase gum	Group 1) Free gum, n=32 Group 2) $6/box gum, n=36 Group 3) $20/box gum, n=38	Significant Findings: * Decreased cost increased several measures of incidence of obtaining gum and long term use, p<.05 to p<.006 * Price elasticity higher for $6 vs $20 (.45) than free vs $6 (.21) * Decreased cost had non-significant trend to increase cessation
#107 Follick et al., 1984[109] US	Complex	Weight loss	Contract: Return $5 per session, 14 session Cash: Forfeit money split between subjects who hadn't forfeited	Required behavior - attend weight loss educational sessions	Group 1) Weight loss program, n=24 Group 2) Program + monetary contract, n=24	Significant Findings: * Number of sessions attended per participant, Group 1 - 6.04, Group 2 - 9.42, p<.01 * No difference in weight loss between groups
#104 Jeffery et al., 1978[106] US	Complex	Weight loss	Contract: return $200, $20 per week for 10 weeks, deposited if 1) attended meetings, 2) met calorie restriction goal, or 3) met weight loss goal	Required behavior – attendance Required outcome – calorie restriction and weight loss goals	Group 1) Control - no contract, n=3 Group 2) Weight contract, n=7 Group 3) Calorie contract, n=10 Group 4) Attendance contract, n=7	Significant Findings: * Weight and calorie contracts groups lost more weight than the attendance group, p<.05 * Attendance did not differ between groups * Calorie group more likely to keep detailed diary, p<.025

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#089 Anderson et al., 2001[102] US	Complex	Nutrition	Coupons: fresh produce from farmers' markets, $20 total	Required behavior - purchase food	Group 1) Control - no intervention, n=97 completed Group 2) Education, n=123 completed Group 3) Coupons, n=114 completed Group 4) Education + coupons, n=121 completed	Significant Findings: * Groups 3 and 4 more likely to have visited the farmer's market, p<.001 * Coupons increased fruit and vegetable consumption, p<.01 * Education "improved" attitudes and beliefs regarding fruit and vegetable consumption p<.01
#061 Francisco et al., 1994[93] US	Complex	Cholesterol level	Lottery: Five $100 cash prizes. 5 in 29 chance if all participants make goal	Required out-come - to participate in lottery, lower serum cholesterol by 20%, or be under 200, within six months	Group 1) Control - health fair and follow-up test, n=34 completed Group 2) health fair, test, and chance for lottery entry, n=29	Significant Findings: * Change in cholesterol level: Group 1 - 11.3% decrease, Group 2 - 13.2% decrease, p=.035
#069 Jeffery, Forster, French et al., 1993[105] US	Complex	Weight loss	Cash Incentive: minimum of $12.50 to maximum of $25 per week depending on percent of goal attained, 20 weeks total	Required outcome - lose weight and maintain loss	Group 1) Control - no treatment Group 2) Standard behavioral therapy (SBT), n=40 Group 3) SBT + food provision, n=40 Group 4) SBT + incentive, n=40 Group 5) SBT + food provision + incentive, n=41	No significant findings for incentives. * Change in BMI, completion of food records, quality of diet, nutrition knowledge
#102 Jeffery et al., 1984[107] US	Complex	Weight loss	Contract 1: return $30 for every 5 pound reduction, total of $150 Contract 2: return $5, $10, $20, $40, $75 for successive five pound reductions	Required outcome - weight loss	Group assignment stratified by population source, 2X3 factorial design: 3 contract types and 2 long-term maintenance enhancements	Significant Findings: * Percent weight change higher for constant contract (10.8%) vs control (8.5%), p<.03, and increasing contract (12.8%) vs control (8.5%), p<.001

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#103 Jeffery et al., 1983[108] US	Complex	Weight loss	Contracts: refunds of $1, $5, or $10 per pound ($30, $150, or $300 total). Forfeit money split between participants who made goal	Required outcome - weight loss	2X3 factorial design. Contract levels of $30, $150, and $300, and group or individual contracts.	No significant difference between contract sizes: * Weight loss * Group contracts lost more weight than individual, p<.05
#108 Windsor et al., 1988[96] US	Complex	Smoking cessation	Cash Incentive of $25 at six weeks and $25 at six months	Required outcome - abstinence	Group 1) Control - self help program, n= 95 Group 2) Self-help+skills training/social support, n=94 Group 3) Self-help + incentive, n=95 Group 4) Self-help+skills training/ social support + incentive, n=94	No difference in cessation rates between groups for incentives
#062 Gomel et al., 1993[69] New Zealand	Complex	CVD prevention	Lottery + Competition: Two lottery draws for $40, $40 for meeting 3threemonth goal, 1/4 chance at $1,000 prize for station with highest percent meeting goals	Required behavior: self-reported progress toward or meeting lifestyle change goals	Group 1) Control - health risk assessment n=115 completed Group 2) hra+risk factor education n=70 completed Group 3) hra+behavioral counseling n=102 completed Group 4) hra+counseling+incentive n=77	Significant Findings * BMI, body fat percent, mean blood pressure, aerobic capacity, quit rates - Group 4 usually had strong response within six months but relapsed to initial levels by 12 months
#065 Koffman et al., 1998[68] US	Complex	Smoking cessation	Prize + competition: workers paid $50 to participate, rewarded $15/month of abstinence for up to five months, plus first place team wins up to $1,980 (split five ways), 1/13 chance to win	Required outcome: lab-verified abstinence	Group 1) Control - traditional non-smoking program. Worksite n=29 Group 2) Multifaceted program. Worksite n=80 Group 3) Multifaceted program + incentive. Worksite n=68	Significant Findings: * Group 3 quit rates significantly higher than Group 2 at end of 6 month program, p=.02 * Biochem confirmed quit rates were not significantly different between Groups 2 and 3 at six months past program

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#066 Jeffery, Forster, Baxter et al., 1993[98] US	Complex	Smoking cessation/ obesity	Monetary contract: money withheld from paycheck, minimum of $5 per check. If goal met, money returned to employee	Required outcome: lab-verified smoking reduction goals or weight loss goals	Group 1) Control - no treatment, n=16, 645 employees Group 2) 11 bi-weekly behavior modification sessions + incentive, n=16, 597 employees	Significant Findings: Group 2 significantly greater smoking abstinence at end of program, p=.03.
#079 Donatelle et al., 2000[67] US	Complex	Smoking cessation	Cash: $50 per month for each abstinent month, max of ten months, pre-term + two months post-partum	Required outcome: lab-verified abstinence	Group 1) Control - education, n=108 Group 2) education + incentives + social support from significant other	Significant Findings: * Biochem confirmed quit rates p<.0001 at eight months, p<.0009 at two months post-partum
#082 Harland et al., 1999[99] UK	Complex	Exercise	Coupons: One free use of fitness center, up to six possible	Required behavior - attend 40 minute motivational interviews	Group 1) Control - baseline health risk assessment, n=91 completed Group 2) baseline hra + 1 interview, n=96 completed Group 3) baseline hra + 1 interview and voucher, n=88 completed Group 4) baseline hra + 6 interviews, n=88 completed Group 5) baseline hra + 6 interviews and vouchers	No significant difference attributable to vouchers. * Increased self-report physical activity * Increased self-report moderate activity * iIcreased self-report vigorous activity * Regression analysis showed interaction effect between vouchers and interview, p=.01 * No lasting effects at 12 month followup
#105 Stitzer & Bigelow, 1983[75] US	Complex	Smoking cessation	Cash Incentive of $0, $1, $5, or $10 per day, ten payment periods	Required out-come - reduce CO levels to 50% of baseline	Group 1) $0 payment group Group 2) $1 payment group Group 3) $5 payment group Group 4) $10 payment group	Significant Findings: * CO levels decreased in orderly fashion as pay increased, p<.001 * Number of daytime cigarettes also decreased in orderly fashion, p<.001 * Percent of targets met increased in orderly fashion, p<.01

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#084 Gottlieb & Nelson, 1990[71] US	Complex	Smoking cessation	Prize + Competition: Cold turkey buffet; participants (smokers and non-smoking supporters) were charged a $5 incentive fee which was pooled and refunded to winning worksites	Required behavior: Turkey buffet to work-sites with highest recruitment rate; pooled kitty to split among quitters at work-site with the highest proportion of quitters	Group 1) Control/ Comparison - non-competition sites, n=6 Group 2) Competition sites, n=6	Significant Findings: * 70% of employees in Group 2 participated in program vs 17% of employees in Group 1, p<.001 * 28% of smokers in Group 2 participated vs 6% of smokers in Group 1, p<.001
#109 Curry et al., 1991[72] US	Complex	Smoking cessation	Gift: ceramic coffee mug at the end of first two program units. Lottery: All-expense-paid one-week trip for two to Hawaii, expense-paid weekend at San Juan Island resort, weekend at a deluxe hotel in downtown Seattle. Bonus entries for returning second two program units.	Required behavior: return unit progress reports of self-help program	Group 1) Control - self-help program, n=305 Group 2) Intrinsic motivation - personalized feedback + program, n=304 Group 3) Extrinsic motivation - financial incentives + program, n=304 Group 4) Intrinsic + extrinsic + program, n=304	Significant Findings: * Extrinsic more likely to complete first unit, p=.0001, and complete at least one activity in more than one of the last six units, p=.039 * Intrinsic more likely to show continuous abstinence, p=.004 Compared to extrinsic groups, intrinsic OR was 2.67
#110 Klesges et al., 1987[70] US	Complex	Smoking cessation	Prize + Competition: within site competition between teams, prizes of $5 to $15 per participant	Required behavior: team with greatest percent of initial participants completing program; highest quit rate at six months; highest abstinence rate at six months	Group 1) Control/ Comparison - non-competition sites, n= not reported Group 2) Competition sites, n=not reported	Significant Findings: * Higher cessation rates for Group 2, 39% vs 16%, p<.01, at end of program * Six-month followup, no significant difference between groups

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#096 Owen et al., 1990[73] Australia	Simple	Cholesterol level	Lottery: microwave oven	Required behavior - show up for retest	Group 1) Control - no reminder of retest, n=1659 Group 2) Reminder letter for retest, n=1648 Group 3) Reminder letter + lottery ticket, n=1629	No significant differences between groups: * Percent returning for retest * Cholesterol levels * BMI * Weight
#075 Deren et al., 1994[52] US	Simple	AIDS prevention	1) Cash incentive, three possible ($35 total) versus 2) Grocery gift certificates, three possible ($35 total)	Required behavior - attend educational sessions	Group 1) Money orders, n=1455 Group 2) Grocery gift certificates, n=551	Significant Findings: * Difference in percent returning to initial session: Group 1- 83%, Group 2 - 66%, p<.001 * Difference in percent attending at least one session: Group 1 - 50%, Group 2 - 36%, p<.01
#076 Dahl et al., 1999[101] US	Simple	STD prevention	"High value" coupons - 75% off purchase price	Required behavior – purchase package of 12 condoms	Group 1) Control - 10% off coupons Group 2) High value coupons, 75% off	Significant Findings: * Widespread disbursement redemption rate: 0 control coupons vs 13 high value coupons, p<.01 * No difference between in-store coupon redemption rates
#077 Kamb et al., 1998[64] US	Simple	HIV/STD prevention	1) Cash incentive, two possible ($15 each) versus 2) Coupons for goods and services, two possible ($15 each)	Required behavior - attend one 90 minute group education session and one 60 minute individual session	Group 1) coupon incentives, n=160 Group 2) cash incentives, n=198	Significant Findings: * Difference in education participation rate, Group session: Group 1 - 46%, Group 2 - 67%, p<.0001 Both sessions: Group 1 - 37%, Group 2 - 55%, p<.0001 * More enrolled in Group 2 - 31%, than Group 1 - 23%, p=.002

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#092 Emont & Cummings, 1992[92] US	Simple	Smoking cessation	Lottery: dinner for two at a local restaurant	Required behavior - attend non-smoking clinic	Group 1) Control - received registration material for off-site cessation program, n=34 sites Group 2) Lottery ticket plus registration package, n=33 sites	No significant difference between groups in participation rates
#043 Birkhead et al., 1995[57] US	Simple	Immunization	Must come to WIC offices monthly to pick up allotment of vouchers (normal every two months)	Required behavior - immunize child	Group 1) education and "referral", n=281 Group 2) education and escort to immunization, n=377 3) education and voucher disincentive, n=178	Significant Findings: * Increased immunization rate, Group 2 - RR 1.58, Group 3 - RR 1.44 * Shorter time to vaccination, Group 1- 45 days, Group 2 - 14 days, p<.001,Group 3 - 26 days, p<.001
#049 Kerpelman et al., 2000[58] US	Simple	Immunization	Lose AFDC benefits provided to nonimmunized child	Required Behavior - provide proof of immunization	Group 1) Control - usual care, n=1000 Group 2) Subject to sanction, n=1500	Significant Findings: * Group 2 had statistically significant (p<.05) and clinically meaningful higher coverage (6-7% points) for all five vaccines for all five years
#053 Kaplan et al., 2000[100] US	Simple	Followup of abnormal pap	1) Fee bus passes mailed out with reminders 2) Voucher for $15 off a $40 clinic fee, redeemable by those at higher risk	Required behavior: for voucher, attend at least one followup visit. No requirement for free bus passes	Group 1) Control - usual follow-up Group 2) Incentives and intensive contact	No significant differences between groups

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#034 Yokley & Glenwick, 1984[62] US	Simple	Immunization	1) Free day care 2) Lottery of $25, $50, and $100 cash prizes	Required Behaviors – 1) Leave child at clinic for shots and day care period 2) Bring child in for shots	Group 1) Control (combined pure control n=119 completed, and attention control, n=108 completed) Group 2) general prompt, n=124 Group 3) personalized prompt, n=119 Group 4) personal prompt + increased access (day care) n=125 Group 5) personal prompt + lottery incentive n=120	Significant Findings (at two week followup): * Increased number of children receiving shots - Group 1 - 11 children, Group 4 - 20 children, Group 5 - 27 children, p<.05 * Increased number of children attending clinic - Group 1 - 13 children, Group 4 - 22 children, Group 5 - 32 children, p<.05 * Increased total number of shots - Group 1 - 22, Group 4 - 38, p<.05, Group 5 - 46, p<.05
#038 Malotte et al., 1999[54] US	Simple	Tuberculosis screening	1) Cash Incentive of $10 2) Grocery gift certificate $10 3) Free bus passes or fast food coupons for total of $10.	Required behavior - return for a reading of the Mantoux test	Group 1) Control, n=215 Group 2) Cash incentive, n=217 Group 3) Grocery incentive, n=217 Group 4) Choice of bus pass or fast food chain coupons, n=218 Group 5) 5-10 minute motivational education session, n=214	Significant Findings: * Percent returned on time for reading: Group 1 - 49%, Group 2 - 95%, OR 19.2, CI 9.9-37.3, p<.001, Group 3 - 86%, OR 6.2, CI 3.9-9.8, p<.001, Group 4 - 83%, OR 4.9, CI 3.1-7.6, p<.001. Group 5 - 47% * Group 2 vs Group 3, p=.002. Group 2 vs Group 4, p<.001
#048 Moran et al., 1996[63] US	Simple	Immunization	Lottery: Three $50 grocery gift certificates	Required behavior - receive shot at clinic	Group 1) Control, n=202 Group 2) Educational brochure, n=198 Group 3) Lottery incentive, n=198 Group 4) Brochure + lottery, n=199	Significant Findings: * Percent receiving shot, Group 1 - 20%, Group 2 - 36%, OR 2.29, CI 1.45-3.61, p=.0004, Group 3 - 29%, OR 1.68, CI 1.05 - 2.68, p=.0308, Group 4 - 26%, OR 1.41, non-significant * For patients with no prior immunization history, only brochure was effective, p=.0002

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#054 Stevens-Simon et al., 1994[56] US	Simple	Followup: post-partum exam	Gift: Gerry Cuddler (unknown value)	Required behavior - attend post-partum appointment	Group 1) Control - appointment recommendation, n=132 Group 2) Recommendation and coupon for gift, n=108	Significant Findings: * Compliance at eight weeks; Group 1 - 52%, Group 2 - 71%, p=.002 * Compliance at 12 weeks: Group 1 - 65%, Group 2 - 82%, p=.003
#055 Smith et al., 1990[55] US	Simple	Followup: post-partum exam	1) Coupon for infant formula (unknownn value) 2) gift of jewelry (unknown value)	Required behavior - attend post-partum appointment on assigned day	Group 1) Control, n=192 Group 2) Infant formula coupon, n=149 Group 3) Jewelry gift, n=193	Significant Findings: * Adherence rate: Group 1 - 22%, Group 2 - 37%, p<.003, Group 3 - 23% * Controlling for ethnicity, Group B significance dropped to p=.07 for blacks
#094 Laken & Ager, 1995[65] US	Simple	Prenatal care	1) $5 department store gift certificate 2) $5 gift certificate + $100 raffle	Required behavior - attend prenatal and postpartum check	Group 1) Control - usual care, n=101 Group 2) Gift certificates for each prenatal appointment, n=51 Group 3) Gift certificates for each visit + raffle, n=53	No significant differences between groups for: * Percent missed prenatal appointments * Percent attending post-partum appointment * Length of gestation * Birth weight
#106 Malotte et al., 1998[53] US	Simple	Tuberculosis screening	Cash Incentive 1) $5 Cash Incentive 2) $10	Require d behavior - return for skin test reading	2X3 factorial design. Education or no education by $0, $5, and $10 cash incentive	Significant Findings: * Odds ratio for $5 incentive = 11.2, $10 incentive = 24.5 * Education was not significant

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#044 Hutchins et al., 1999[110] US	Simple	Immunization	Must come to WIC offices monthly to pick up allotment of vouchers (normal every three months)	Required behavior - immunize child	Group 1) Control - no immunization referral, n=2 sites Group 2) On-site nurse referral and incentive, n= 2 sites Group 3) On-site clinic referral and incentive, n= 1 site Group 4) Off-site referral and incentive, n= 2 sites	Significant findings: * For enrolled children, coverage increased 10% at first birthday and 23% at second birthday for intervention groups. Control groups decreased 4% and 9% respectively, p<.05 * For active WIC participants, increases for intervention groups was 52% by second year vs 2% for the control group
#029 Freedman & Mitchell, 1994[59] US	Simple	Followup: cancer screening	Free postage	Required behavior - return completed fecal occult blood test within three months	Group 1) Control - return at next visit, n=49 Group 2) Return envelope provided, n=46 Group 3) Stamped return envelope provided, n= 51	Significant Findings: * Increase in adherence rate, p=.003 Adherence rate: Group 1 - 37%, Group 2 - 57%, Group 3 - 71%
#037 Satterthwaite, 1997[104] New Zealand	Simple	Immunization	Free flu shots (unknown value)	Required behavior - receive flu shot	Group 1) Control - usual care, n=930 Group 2) Invitation letter, n=931 Group 3) Invitation letter and free shot, n=930	Significant Findings: * Increase in vaccination rate, p<0.001 Vaccination rate: Group 1 - 17%, Group 2 - 27%, Group 3 - 45%
#047 Nexoe et al., 1997[78] Denmark	Simple	Immunization	Free flu shots ($40-$60 value)	Required behavior - receive flu shot	Group 1) Control - usual care, n=195 Group 2) Invitation letter, n=195 Group 3) Invitation letter and free shot, n=195	Significant Findings: * Increase in vaccination rate, p<0.01 Vaccination rate: Group 1 - 25%, Group 2 - 49%, Group 3 - 72%

Appendix F. Evidence Tables, Continued

Article ID Author Country	Prevention Definition	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes
#051 Marcus et al., 1992[60] US	Simple	Followup: cancer screening	Free bus transportation ($2.00 to $2.90 value)	Nothing required - mailed with followup reminder; may be used for other purposes	2X2X2 factorial table assignment totaling 8 groups. Three intervention factors: 1) personalized followup 2) educational video 3) transportation incentives	Significant Findings: * Improved loss-to-followup - transportation incentive p<.05, OR 1.48, CI 1.06 - 2.06 * Sub-group - more likely for county (vs non-county) patients, p<.05, more severe pap score, p<.01, and non-insured, p<.01
#052 Marcus et al., 1998[61] US	Simple	Followup: cancer screening	Voucher: $20 to $25 off clinic visit fee, about 2/3 price reduction, redeemable by non-insured patients, about 70% of pop	Required behavior - attend at least one followup visit	Group 1) Control, n=377 Group 2) Intensive contact follow-up, n=335 Group 3) Voucher incentive, n=396 Group 4) Intensive + incentive, n=345	Significant Findings: * Improved loss-to-followup - Group 2 - OR 1.56, CI 1.12 - 2.17, p<.01, Group 3 - OR 1.50, CI 1.09 - 2.05, p<.01 * Regression analysis showed no interaction effect between two intervention factors
#095 Melnikow et al., 1997[77] US	Simple	Prenatal care	1) Taxicab voucher 2) Gift: baby blanket	Required behavior - attend first prenatal clinic visit	Group 1) Control - usual care, n=35 Group 2) Blanket incentive, n=35 Group 3) Taxi voucher, n=34	Significant Findings: * Compliance with first appointment, Group 1 - 66%, Group 2 - 54%, Group 3 - 82%, Unadjusted OR 0.32 (CI 0.12 - 0.88) * No significance difference for Group 2, blanket incentive
#042 Mayer et al., 1994[94] US	Simple	Cancer screening – mammog-raphy	Gift: Stay-fit Nutrition Kit (brochures and educational material valued at $2)	Required behavior - complete mammography	Group 1) Control - reminder postcard, n=91 Group 2) Postcard and gift coupon, n=96	No significant difference, and change in wrong direction * Percent difference in appointment keeping rate
#050 Mayer & Kellogg, 1989[95] US	Simple	Cancer screening – mammog-raphy	Gift: Stay-fit Nutrition Kit (brochures and educational material valued at $2)	Required behavior - complete mammography	Group 1) Control - information, n=49 Group 2) Information and coupon for gift package, n=47	Significant Findings: * Increase in appointment keeping rate, p<0.05 Appointment rate: Group 1 - 59%, Group 2 - 81%

Appendix F. Evidence Tables, Continued

Evidence Table 4. Provider populations

Article ID First Author Country	Research Design	Prevention Category	Prevention Target	Provider Population	Group Size	Patient Population
#001 Morrow et al., 1995[47] US	3 year evaluation, before/after Study	Simple	MMR immunization, cholesterol screening	Primary care providers of a commercial IPA-HMO in northeastern US	Offices suggested to be majority solo practice (1-2 MDs)	HMO general population with office visits in northeastern US
#003 Hillman et al., 1998[45] US	RCT	Simple	Cancer screening	Primary care providers of a Philadelphia Medicaid IPA-HMO	Of practices, 31 solo, 21 group.	Medicaid covered women with office visits in Philadelphia
#004 Kouides et al., 1998[49] US	RCT	Simple	Flu immunization	Solo and group practices accepting Medicare in Monroe County, New York	Of practices, 28 solo, 28 group Group sizes: 2 MD = 11 3 MD = 6 4 MD = 5 above 4 MD = 6	Medicare patients with office visits - target lists by provider in Monroe County, NY
#005 Fairbrother et al., 1999[43] US	RCT	Simple	Child immunizations - up to date (UTD) coverage of scheduled shots	New York urban primary care practices servicing primarily Medicaid		Medicaid covered children with office visits in urban NY
#006 Fairbrother et al., 2001[44] US	RCT	Simple	Child immunizations - up to date coverage of scheduled shots	New York urban primary care practices servicing primarily Medicaid		Medicaid covered children with office visits in urban NY
#007 Hillman et al., 1999[46] US	RCT	Simple	Well child, including immunizations	Primary care providers of a Philadelphia Medicaid IPA-HMO	Of practices, 21 solo, 28 group	Medicaid covered children with office visits in Philadelphia
#008 Ritchie et al., 1992[51] UK	Time series	Simple	Child immunizations	General practice providers in Grampian, Scotland	Of practices, 23 solo, 71 group	Primary and preschool children in Grampian, Scotland
#011 Grady et al., 1997[48] US	RCT	Simple	Cancer screening	GPs, family practice, internal medicine - small urban community practices in Dayton, Ohio, and Springfield, Massachusetts	Of practices, 39 solo, 56 group. Group sizes: 2 MD = 21; 3 MD = 5; 4 MD = 25; 5 MD =5	Women 50+; consecutive appointments
#018 Fox & Phua, 1995[50] US	3 year evaluation, before/after study	Simple	Prenatal care	Maryland providers of obstetric services		Women continuously enrolled in Medicaid for one year and who delivered in final four months of the fiscal year

Appendix F. Evidence Tables, Continued

Evidence Table 5. Consumer populations

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#029 Freedman & Mitchell, 1994[59] US	RCT Score = 4	Simple	Cancer screening - fecal occult blood test	Consecutive patients at an internal medicine teaching clinic	Internal medicine teaching clinic	Free postage	15 months
#047 Nexoe et al., 1997[78] Denmark	RCT Score = 4	Simple	Immunization	GP patients with medical indication for immunization	Solo practices	Free flu shots ($40-$60 value)	1995 flu season
#037 Satterthwaite, 1997[104] New Zealand	RCT Score = 3	Simple	Immunization	GP patients over 65	16 Auckland GP clinics	Free flu shots (unknown value)	One flu season
#043 Birkhead et al., 1995[57] US	RCT Score = 3	Simple	Immunization	Not immunized children, 12-59 months, of mothers enrolled in WIC	6 New York city WIC offices with clinics	Must come to WIC offices monthly to pick up allotment of vouchers (normal every two months)	8 months
#050 Mayer & Kellogg, 1989[95] US	RCT Score = 2	Simple	Cancer screening – mammog-raphy	San Diego general population, TV recruitment for low-cost community program - 35+ years old, no previous mammogram	Mammography facilities in San Diego	Gift: stay-fit nutrition kit (brochures and educational material valued at $2)	1 month
#042 Mayer et al., 1994[94] US	RCT Score = 2	Simple	Cancer screening – mammog-raphy	Women 50+ who were due for an annual mammography	Mammography facility in San Diego	Gift: stay-fit nutrition kit (brochures and educational material valued at $2)	2 months
#055 Smith et al., 1990[55] US	RCT Score = 2	Simple	Post-partum exam	Teen mothers who delivered at a Houston City-county hospital, low SES	Teen health clinic of a Houston-city county hospital	1) Coupon for infant formula (unknown value) 2) Gift of jewelry (unknown value)	1 year
#054 Stevens-Simon et al., 1994[56] US	RCT Score = 4	Simple	Post-partum exam	Consecutively enrolled pregnant teens participating in the Colorado Adolescent Maternity Program, low SES	Unclear type of clinic setting	Gift: Gerry Cuddler (unknown value)	12 weeks; unclear study period
#032 Dey et al., 1999[103] UK	RCT Score = 2	Complex	Smoking cessation	Patients, aged 25-64, smoke more than 15 cigarettes per day and expressed interest to quit	East Lancashire GP clinics	Free nicotine patches for 12 weeks	12 weeks NRT + 2 weeks followup

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#076 Dahl et al., 1999[101] US	Quasi-experimental Score = 2	Simple	STD prevention	Sexually active young adults, age 18-30; convenience populations from public gathering places and drug stores	Distributed at 1) public gathering places, "widespread disbursement" and 2) drug stores "in-store disbursement"	"High value" coupons - 75% off purchase price	4 months
#077 Kamb et al., 1998[64] US	Quasi-experimental Score = 2	Simple	HIV/STD prevention	Patients attending five inner-city STD clinics	Atlanta, Georgia, STD clinics	1) Cash incentive, 2 possible ($15 each) versus 2) Coupons for goods and services, 2 possible ($15 each)	3 weeks; 2 years
#082 Harland et al., 1999[99] UK	RCT Score = 2	Complex	Exercise	Patient list of GP located in SES disadvantaged area, 40-64 year olds not previously engaged in an exercise program	Fitness facilities and community centers	Coupons: 1 free use of fitness center, up to 6 possible	18 months
#061 Francisco et al., 1994[93] US	RCT Score = 2	Complex	Cholesterol level	Voluntary participants with Cholesterol >200 at a health fair for a Kansas School District Union	Worksite fitness program	Lottery: 5 $100 cash prizes. 5 in 29 chance if all participants make goal	6 months
#049 Kerpelman et al., 2000[58] US	RCT Score = 2	Simple	Immunization	Families with preschool children receiving AFDC, in Muscogee, Georgia	General community; government offices	Lose AFDC benefits provided to non-immunized child	4 years
#075 Deren et al., 1994[52] US	Quasi-experimental Score = 2	Simple	AIDS Prevention	Intravenous drug users (IDU) and sexual partners of IDUs recruited in Harlem and Cleveland outreach programs	Neighborhood AIDS outreach sites	1) Cash incentive, 3 possible ($35 total) versus 2) Grocery gift certificates, 3 possible ($35 total)	Harlem: May - Dec 1989 Cleveland: Apr 1989 to Nov 1990
#051 Marcus et al., 1992[60] US	RCT Score = 3	Simple	Followup of abnormal pap	Female patients of Los Angeles county primary health care clinics. Low SES, 69% non-white, majority Hispanic	Mixed settings, county hospital outpatient clinics, community clinics, University clinics, 12 in all	Free bus transportation ($2.00 to $2.90 value)	2 years

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#052 Marcus et al., 1998[61] US	RCT Score = 3	Simple	Followup of abnormal pap	Female patients of Los Angeles county primary health care clinics. Low SES, 84% Hispanic	Two county hospitals with two outpatient clinics each	Voucher: $20 to $25 off clinic visit fee, about 2/3 price reduction, redeemable by non-insured patients, about 70% of population	44 months
#034 Yokley & Glenwick, 1984[62] US	RCT Score = 1	Simple	Immunization	Immunization deficient pre-school children of a public health clinic in a medium-sized Midwest city	Urban public health clinic	1) Free day care 2) 1 Lottery of $25, $50, and $100 cash prizes	3 months
#038 Malotte et al., 1999[54] US	RCT Score = 3	Simple	Tuberculosis screening	Active drug users from Long Beach, California, with no previous TB history	Urban store-front research facility in downtown	1) Cash Incentive of $10 2) Grocery gift certificate $10 3) Free bus passes or fast food coupons for total of $10	2 years
#048 Moran et al., 1996[63] US	RCT Score = 2	Simple	Immunization	Patients, seen within last 18 months, high -risk for flu, of an urban community health center, generally lower SES	Urban community health center	Lottery : 3 $50 grocery gift certificates	1991-92 flu season
#078 Wing et al., 1996[91] US	RCT Score = 2	Complex	Exercise	Overweight women, age 25-55, recruited from Minneapolis general population through newspaper ads	Community center and park grounds	Lottery: one $50 gift certificate (unknown type) at each exercise session and one $2,000 travel certificate	24 weeks
#071 Jeffery & French, 1999[74] US	RCT Score = 3	Complex	Obesity prevention	Men and women of Twin City metro area, recruited through newspaper and flyers. Also targeted women on WIC	Health department sites and community settings	Lottery: $100, one per month for a 1 in 10 chance over three years	3 years
#072 Jeffery et al., 1998[97] US	RCT Score = 3	Complex	Weight loss	General population at two sites, Minneapolis/St. Paul, Minnesota, and Pittsburgh, Pennsylvania, recruited through media advertising	Community centers	Cash Incentive: Graduated payments of $1 to $3 per exercise session, paid monthly, 222 total possible walks, $266 potential total per person	18 months
#069 Jeffery, Wing et al., 1993[142] US	RCT Score = 3	Complex	Weight loss	General population at two sites, Minneapolis/St. Paul, Minnesota, and Pittsburgh, Pennsylvania, recruited through media advertising	Unclear	Cash incentive: minimum of $12.50 to maximum of $25 per week depending on percent of goal attained, 20 weeks total	18 months

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#044 Hutchins et al., 1999[110] US	RCT Score = 2	Simple	Immunization	Chicago WIC population, majority black, Hispanic, and receiving other federal assistance	Chicago WIC sites, four run by Chicago department of health, three by community agencies	Must come to WIC offices monthly to pick up allotment of vouchers (normal every three months)	2 years
#062 Gomel et al., 1993[69] New Zealand	RCT Score =2	Complex	CVD prevention	Employees of 28 ambulance services. 85% male, average of 32 years old, 25% with greater than high school education	Worksite	Lottery + competition: two lottery draws for $40, $40 for meeting three month goal, 1 in 4 chance at $1,000 prize for station with highest percent meeting goals	18 months
#065 Koffman et al., 1998[68] US	Quasi-experimental Score = 2	Complex	Smoking cessation	Aerospace industry workers in California, regular tobacco users. 57% male, average of 38 years old, 75% white, 65% with greater than high school education	Worksite	Cash + competition: workers paid $50 to participate, reward-ed $15/month of abstinence for up to five months, plus first place team wins up to $1,980 (split five ways), 1 in 13 chance to win	12 months
#066 Jeffery, Forster, French et al., 1993[105] US	RCT Score = 2	Complex	Smoking cessation/ obesity	Employees of 32 diverse worksites from the Minneapolis/St. Paul, Minnesota, area - from manufacturing to public sector to insurance industry	Worksite	Monetary contract: money withheld from paycheck, minimum of $5 per check; if goal is met, money returned to employee	3 years
#074 Sciacca et al., 1995[66] US	RCT Score = 2	Complex	Breast-feeding	Pregnant women without other children, Flagstaff, Arizona WIC clinic patients	WIC clinics	Gifts and raffles of high frequency and considerable value - from $15 hair cuts to raffle for trip for two on Grand Canyon Railway	3 months post partum
#084 Gottlieb & Nelson, 1990[71] US	Quasi-experimental Score = 2	Complex	Smoking cessation	Employees of Texas Department of Human Services located in Austin, Houston, and San Antonio	Worksite	Prize + competition: Cold turkey buffet; participants (smokers and non-smoking supporters) were charged a $5 incentive fee which was pooled and refunded to winning worksites	Unclear
#079 Donatelle et al., 2000[67] US	RCT Score = 3	Complex	Smoking cessation	Pregnant smokers ("even a puff") over age 15, WIC eligible	WIC program offices	Cash: $50 per month for each abstinent month, maximum of 10 months, pre-term + 2 months post-partum	

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#053 Kaplan et al., 2000[100] US	Quasi-experimental Score = 1	Simple	Followup of abnormal pap	Low SES, majority Hispanic, female patients of Los Angeles County Department of Health Services (LACDHS)	LACDHS clinics	1) Free bus passes mailed out with reminders 2) Voucher for $15 off a $40 clinic fee, redeemable by those at higher risk	
#109 Curry et al., 1991[72] US	RCT Score = 3	Complex	Smoking cessation	Smoking members of GHCPS, 65% women, recruited through GHCPS's bi-monthly health magazine	Homes of members of Group Health Cooperative of Puget Sound	Gift: Ceramic coffee mug at the end of first two program units. Lottery: All-expense-paid one-week trip for two to Hawaii, expense-paid weekend at San Juan Island resort, weekend at a deluxe hotel in downtown Seattle Bonus entries for returning second two program units	12 months
#110 Klesges et al., 1987[70] US	Quasi-experimental Score = 2	Complex	Smoking cessation	Employees of firms of diverse industries, ranging from 50 to 380 employees, 53% male	Worksite	Prize + competition: within site competition between teams, prizes of $5 to $15 per participant	6 months
#089 Anderson et al., 2001[102] US	RCT Score = 2	Complex	Nutrition	Pregnant, lactating, or mothers of young children, WIC and population from a local Genesee County, Michigan food program agency	WIC and CSFP offices, local farmer's market	Coupons: fresh produce from farmers' markets, $20 total	5 months
#091 Hughes et al., 1991[76] US	RCT Score = 2	Complex	Smoking cessation	Patients, presenting for appointments, from rural family practices, 18 years or older, daily smokers not identified as ready to quit	Rural family practices, teaching facilities, University of Vermont	Free or reduced price for nicotine gum; $0, $6 or $20 vs. full price of $24	6 months
#092 Emont & Cummings, 1992[92] US	Quasi-experimental Score = 2	Simple	Smoking cessation	Employees of 68 auto dealerships in western New York state, 3/4 male, mean age 35	Worksite	Lottery: dinner for two at a local restaurant	Unclear
#094 Laken & Ager, 1995[65] US	RCT Score = 3	Simple	Prenatal care	Low SES prenatal care patients of a local clinic, Detroit, Michigan	Urban clinic	1) $5 department store gift certificate 2) $5 gift certificate + $100 raffle	Unclear

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#095 Melnikow et al., 1997[77] US	RCT Score = 3	Simple	Prenatal care	Newly confirmed pregnant women who intended to use a system of clinics in northern California, low SES, 45% non-white	Family planning clinics	1) Taxicab voucher 2) Gift: baby blanket	2 years
#096 Owen et al., 1990[73] Australia	RCT Score = 2	Simple	Cholesterol level	Respondents to a community-based screening program with elevated cholesterol	12 regional government health education service sites, one worksite	Lottery: microwave oven	4 months
#102 Jeffery et al., 1984[107] US	RCT Score = 2	Complex	Weight loss	Overweight men and women recruited from self-referred (through media) and community sources	Unclear	Contract 1: Return $30 for every 5 pound reduction, total of $150. Contract 2: Return $5, $10, $20, $40, $75 for successive 5 pound reductions	16 week program plus 1 year main-tenance
#103 Jeffery et al., 1983[108] US	RCT Score = 3	Complex	Weight loss	Overweight middle-class men, aged 35 - 57, ineligible for MRFIT, a community population sample, recruited by letter	Unclear	Contracts: Refunds of $1, $5, or $10 per pound ($30, $150, or $300 total). Forfeit money split between participants who made goal	15 week education program plus 1year followup
#104 Jeffery et al., 1978[106] US	RCT Score = 2	Complex	Weight loss	Overweight men and women recruited by media from the general population	Unclear	Contract: Return $200, $20 per week for 10 weeks, deposited if 1) attended meetings, 2) met calorie restriction goal, or 3) met weight loss goal	10 weeks
#105 Stitzer & Bigelow, 1983[75] US	RCT Score = 3	Complex	Smoking cessation	Smokers, 83% female, recruited from bulletins posted in a large metropolitan hospital	Urban hospital	Cash Incentive of $0, $1, $5, or $10 per day	6 weeks
#106 Malotte et al., 1998[53] US	RCT Score = 3	Simple	Tuberculosis screening	Active drug users from Long Beach, California, with no previous TB history	Urban store-front research facility in downtown	Cash Incentive 1) $5 Cash Incentive 2) $10	17 months
#107 Follick et al., 1984[109] US	RCT Score = 3	Complex	Weight loss	Employees of a general hospital, 85% female, from 10% to 113% overweight	Worksite	Contract: Return $5 per session, 14 sessions Cash: Forfeit money split between subjects who hadn't forfeited	18 weeks

Appendix F. Evidence Tables, Continued

Article ID Author Country	Research Design and Quality	Definition of Prevention	Prevention Target	Participants	Setting	Intervention	Follow-up Period
#108 Windsor et al., 1988[96] US	RCT Score = 2	Complex	Smoking cessation	Employees of University of Alabama, regular smokers	Worksite	Cash Incentive of $25 at 6 weeks and $25 at 6 months	3 years

Evidence Table 6. Description of provider incentives

Article ID Author Country	Intervention	Tournament vs. All Qualify	Bonused for Outcome or Behavior	Penalty	Individual Performance Known to Group?	Adequacy	Pay out
#001 Morrow et al., 1995[47] US	Capitation rates adjusted by quality of care performance measures; audit determines following year cap rate	All qualify	Outcome	No	Yes	Unknown	Unknown
#003 Hillman et al., 1998[45] US	Performance bonus – target outcome. 20% of capitation for three highest aggregate compliance scores; 10% for next three highest and three offices most improved	Tournament	Indirect	No	Yes	1) $570 - $1,260 per site; $775 average 2) 17 sites received at least one bonus 3) 6-9 of 26 sites	$13,175
#004 Kouides et al., 1998[49] US	Performance bonus - target outcome. 10% additional reimbursement per shot provided if ≤ 70% immunization rate. 20% if ≤85%	All qualify	Outcome	No	No	$242 average bonus	$4,362
#005 Fairbrother et al., 1999[43] US	Group 2) performance bonus - target outcome $1,000 for 20% increase in UTD, $2,500 for 40%, $5,000 for reaching 80% coverage. Group 3) Per-input bonus $5 per administered shot and $15 per office visit with completed coverage	All qualify	Outcome	No	Unknown	Unknown	Unknown
#006 Fairbrother et al., 2001[44] US	Group 2) performance bonus - target outcome $1,000 for 20% increase in UTD, $2,500 for 40%, $5,000 for reaching 80% coverage. Group 3) Per-input bonus $5 per administered shot and $15 per office visit with completed coverage	All qualify	Outcome	No	Unknown	Unknown. Hypothetical calculation showed MDs wouldn't qualify with 80% level even if no missed opportunities to provide shots	Unknown
#007 Hillman et al., 1999[46] US	Performance bonus - target outcome. 20% of capitation for three highest aggregate compliance scores; 10% for next three highest and three offices most improved; $500 minimum	Tournament	Indirect	No	Yes	$772 - $4,682 per site; average bonus $2,000. 13 of 19 sites received at least one bonus; 16 sites received two	Unknown
#008 Ritchie et al., 1992[51] UK	Target payment - lump sum payment at 70% and 90% coverage levels; implemented 1990	All qualify	Outcome	Yes	Yes	Unknown	Unknown

Appendix F. Evidence Tables, Continued

Article ID Author Country	Intervention	Tournament vs. All Qualify	Bonused for Outcome or Behavior	Penalty	Individual Performance Known to Group?	Adequacy	Pay out
#011 Grady et al., 1997[48] US	Performance bonus - target behavior; token bonus of $50 for 50% mammography referral rate	All qualify	Outcome	No	Yes	Very small token	Unknown
#018 Fox & Phua, 1995[50] US	Raised fees for delivery from $265 to $795 and prenatal visits from $17 to $21	All qualify	Behavior	No	Not applicable	Unknown	Unknown

Appendix F. Evidence Tables, Continued

Evidence Table 7. Reported cost of interventions

Article ID Author Country	Definition of Prevention	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes	Cost-Effectiveness
#029 Freedman & Mitchell, 1994[59] US	Simple	Cancer screening - fecal occult blood test	Free postage	Required behavior: return completed fecal occult blood test within three months	Group 1) Control - return at next visit, n=49 Group 2) Return envelope provided, n=46 Group 3) Stamped return envelope provided, n= 51	Significant findings: * Increase in adherence rate, p=.003 Adherence rate: Group 1 - 37% Group 2 - 57% Group 3 - 71%	Cost per completed kit: Group 1 - $2.24 Group 2 - $1.61 Group 3 - $1.71
#047 Nexoe et al., 1997[78] Denmark	Simple	Immunization	Free flu shots ($40-$60 value)	Required behavior: receive flu shot	Group 1) Control - usual care, n=195 Group 2) Invitation letter, n=195 Group 3) Invitation letter and free shot, n=195	Significant findings: * Increase in vaccination rate, p<0.01 Vaccination rate: Group 1 - 25% Group 2 - 49% Group 3 - 72%	Cost per prevented death: Group 2 - $3,990 Group 3 - $17,860
#034 Yokley & Glenwick, 1984[62] US	Simple	Immunization	1) Free day care 2) Lottery of $25, $50, and $100 cash prizes	Required behaviors: 1) Leave child at clinic for shots and day care period, 2) Bring child in for shots	Group 1) Control (combined pure control n=119 completed, and attention control, n=108 completed) Group 2) general prompt, n=124 Group 3) personalized prompt, n=119 Group 4) personal prompt + increased access (day care) n=125, Group 5) personal prompt + lottery incentive n=120	Significant findings (at 2 week followup): * Increased number of children receiving shots: Group 1 - 11 children Group 4 - 20 children Group 5 - 27 children, p<.05. * Increased number of children attending clinic: Group 1 - 13 children Group 4 - 22 children Group 5 - 32 children p<.05. * Increased total number of shots: Group 1 – 22 Group 4 - 38, p<.05 Group 5 - 46, p<.05	Cost per target child receiving shot after 3 months: Group 2 $3.64, Group 3 $2.27, Group 4 $6.28 Group 5 $6.91

Appendix F. Evidence Tables, Continued

Article ID Author Country	Definition of Prevention	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes	Cost-Effectiveness
#048 Moran et al., 1996[63] US	Simple	Immunization	Lottery: Three $50 grocery gift certificates	Required behavior: receive shot at clinic	Group 1) Control, n=202 Group 2) Educational brochure, n=198 Group 3) Lottery incentive, n=198 Group 4) brochure + lottery, n=199	Significant findings: * % receiving shot: Group 1 - 20% Group 2 - 36%, OR 2.29, CI 1.45-3.61, p=.0004, Group 3 - 29%, OR 1.68, CI 1.05 - 2.68, p=.0308, Group 4 - 26%, OR 1.41, non-significant * For patients with no prior immunization history, only brochure was effective, p=.0002	Cost per additional immunization: $3.45 for brochure, $8.74 for incentive
#044 Hutchins et al., 1999[110] US	Simple	Immunization	Must come to WIC offices monthly to pick up allotment of vouchers (normal every three months)	Required behavior: immunize child	Group 1) Control - no immunization referral, n=2 sites Group 2) On-site nurse referral and incentive, n= 2 sites Group 3) On-site clinic referral and incentive, n= 1 site Group 4) Off-site referral and incentive, n= 2 sites	Significant findings: * For enrolled children, coverage increased 10% at first birthday and 23% at second birthday for intervention groups. Control groups decreased 4% and 9% respectively, p<.05. * For active WIC participants, increase for intervention groups was 52% by second year vs. 2% for the control group	Cost per additional up-to-date child: Year 1: off-site = $51 on-site = $111 nurse = $164 Year 2: off-site = $13 on-site = $7 nurse = $21
#062 Gomel et al., 1993[69] New Zealand	Complex	CVD prevention	Prize + competition: Two lottery draws for $40, $40 for meeting three month goal, 1 in 4 chance at $1,000 prize for station with highest percent meeting goals	Required behavior: self-reported progress toward or meeting lifestyle change goals	Group 1) Control - health risk assessment (hra) n=115 completed Group 2) hra + risk factor education n=70 completed Group 3) hra + behavioral counseling n=102 completed Group 4) hra + counseling + incentive n=77	Significant Findings: * BMI, body fat %, mean blood pressure, aerobic capacity, quit rates - Group 4 usually had strong response within 6 months but relapsed to initial levels by 12 months	In active phase Group 4 least cost-effective. Not effective by 12 month maintenance stage. Reported under separate study.[143]

Appendix F. Evidence Tables, Continued

Article ID Author Country	Definition of Prevention	Prevention Target	Intervention	Incentive Condition	Group Assignment	Outcomes	Cost-Effectiveness
#091 Hughes et al., 1991[76] US	Complex	Smoking cessation	Free or reduced price for nicotine gum; $0, $6, or $20 vs. full price of $24	Required behavior: purchase gum	Group 1) Free gum, n=32 Group 2) $6/box gum, n=36 Group 3) $20/box gum, n=38	Significant findings: * Decreased cost increased several measures of incidence of obtaining gum and long-term use, p<.05 to p<.006 * Price elasticity higher for $6 vs. $20 (.45) than free vs. $6 (.21) * Decreased cost had non-significant trend to increase cessation	Financial gain to insurance company per subject enrolled: Free - $1,120 $6/box - $280 $20/box - $413