Increasing Appropriate Vaccinations: Community-Based Interventions Implemented in Combination

Summary Evidence Table – Effectiveness Review

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Barnes, et al. (1999) **Study Period:** 1995-1996 **Design Suitability (design):** Greatest suitability (individual RCT) **Quality of Execution:** Fair (2 limitations) **Outcome Measurement:** Childhood series		**Setting:** 2 pediatric ambulatory clinics - Children younger than 2 yrs of age residing in northwestern Manhattan who were immunization deficient by clinic chart and missed an appointment N=434 children eligible N= 163 were randomized	Proportion of children UTD immunizations for the childhood series	(I) 24 (34%) of 71 (C) 33 (39%) of 84	(I) 42 (75%) of 56 (C) 41 (54%) of 76	+26 pct pts [95%CI 11, 41]	Intervention period was 6 months

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Bond, et al. (1998) **Study Period:** 1996 **Design Suitability (design):** Greatest suitability (Randomized trial) **Quality of Execution:** Fair **Outcome Measurement:** DTP/OPV/MMR/Hib	**Location:** Australia **Intervention**: Letter, telephone, and home contact including administration of vaccination **Comparison:** Usual care	**Study Population:** - community wide - clients - aged 9 or 16 months identified from Australian childhood immunization registry N=2,194 204 and 202 not-up-to-date randomized to intervention and control	4 DTP/OPV/Hib at 9 months or 1 MMR at 16 months Group Intervention vs Comparison	Intervention**:** 94%		+1 pct pts	
Author (Year): Dalby, et al. (2000) **Study Period:** NR **Design Suitability (design):** Greatest Suitability (individual RCT) **Quality of Execution:** Fair (3 limitations) **Outcome Measurement:** Influenza pneumonia vaccines	**Location:** Canada; Hamilton, Ontario Georgia **Intervention:** preventive home visits "as needed" over 14 months to provide vaccinations, implement care plan based on comprehensive assessment of cognitive, physical, social and emotional functions. - deliverers: visiting primary care nurse **Comparison:** usual care (not described)	**Study Population:** 113 adults over 70, from 2 primary care practices, frail elderly living in community but at high risk for rapid deterioration b/c of recent (within past 6 months) functional impairment, hospital admission, or bereavement	Proportion of participants administered influenza and pneumonia vaccines by nurse during home visits	<u>Influenza</u>: Comparison: 29 (53.0%) of 54 <u>Pneumonia vaccine</u> Comparison: 0 (0%) of 54	<u>Influenza</u> Intervention: 53 (90.1%) of 59 <u>Pneumonia vaccine</u> Intervention: 31 (53.0%) of 59	<u>Influenza</u> Pct pt change=37.1 95%CI (21.8, 52.4) P<.001 <u>Pneumonia</u> Pct pt change=53.0 95% CI (40.3, 65.7) P<.001	Intervention period was 14 months

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Daniels, et al. **Study Period:** 2007 (2003-2006) **Design Suitability (design):** Greatest suitability (RCT) **Quality of Execution:** Fair (2 limitations) **Outcome Measurement:** Influenza PPV	**Location:** USA; San Francisco Bay area, CA **Intervention:** Client education + Enhanced access **Comparison:** Client education (informational pamphlets, church-based education, reminders, watched slideshow on vaccinations)	**Setting:** 15 churches Adults ≥65 years of age - no previous PPV vaccination - no regular receipt of influenza N Intervention 113 Control 73 Total 186	Proportion of adults receiving influenza vaccination Proportion of adults receiving PPV vaccination	Influenza (I) 0(0%) of 113 (C) 0(0%) of 73 PPV (I) 0(0%) of 113 (C) 0(0%) of 73	Influenza (I) 90 (80%)/112 (C) 32 (46%) of 70 PPV (I) 58 (66%) of 88 (C) 20 (35%) of 57	Influenza +34 pct pts [95% CI: 20, 48] PPV +31 pct pts [95% CI: 15, 37]	Intervention period was 3-6 months
Author (Year): Etkind, et al. (1996) **Study Period:** 1988-1992 **Design Suitability (design):** Greatest suitability (Nonrandomized trial) **Quality of Execution:** Fair **Outcome Measurement:** Influenza	**Location:** USA; Essex and Worcester Counties, Massachusetts **Intervention:** Multiple approaches to promoting influenza vaccination to target population plus provider education plus administration fee to providers (91,621 Medicare Part B enrollees) versus Baseline in intervention county (number not provided) **Comparison:** versus Usual practice in comparison county (95,234 Medicare Part B enrollees)	Communitywide; Essex county target population - 90% urban; aged >65 years; predominantly white; socioeconomic status not reported **Sample size:** entire county	Proportion of intervention county receiving influenza vaccination	Essex County baseline: 25%	Intervention versus Comparison county: doses distributed in Essex County increased from ~25,000/year before to ~57,400/year after versus no change in comparison county	Intervention versus Intervention Co. at baseline = 29% change (statistical significance not provided)	4 years

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Findley, et al. (2008; 2009) **Study Period:** 2006-2007 **Design Suitability (design):** Moderate suitability (Retrospective cohort) **Quality of Execution:** Fair (4 limitations) **Outcome Measurement:** Childhood series	**Location:** USA; New York City, NY **Intervention:** (Start Right) Client education + client reminder/recall + IIS/DB + client incentives + PAF **Comparison:** usual care	**Setting:** inner city **Study population:** Children - 19-35 mths of age - born between 4/99-9/03 at primary community hospital N=895 Start Right participants	Proportion of children UTD immunizations for the childhood series	Intervention: 63%		+ 11.1 pct. pts. (95% CI: NR)	Intervention period was 2 years

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): LeBaron, et al. (1998) **Study Period:** 1992-1993 **Design Suitability (design):** Greatest Suitability (Group non-randomized trial) **Quality of Execution:** Fair (3 limitations) **Outcome Measurement:** Childhood series	**Location:** USA; Atlanta, GA **Intervention:** (Residence-based intervention study) Incentives (food and baby products) + Outreach+ Reducing Out-of-Pocket Costs+ Community-wide Education+ Enhanced Access **Comparison:** Usual care	Setting: Community-wide Study Population: Study intervention communities -5 intervention -4 comparison Children of surveyed households - 3-59 months of age Group 1992 1993 Inter 347 429 Ctrl 178 221	Age-appropriate vaccination rates	Intervention 1992 154(44%) out of 347 Comparison 1992 78(44%) out of 178	Intervention 1993 269 (61%) out of 429 Comparison 1993 129 (58%) out of 221	+ 3 pct pts 95% CI: [-5, 11]	Intervention period was 1 year

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): LeBaron, et al. (2004) **Study Period:** September 1996—February 2001 **Design Suitability (design):** Greatest Suitabilty (individual RCT) **Quality of Execution:** Fair (3 limitations) **Outcome Measurement:** Childhood series Economic information	**Location:** USA; Fulton Co., GA (most of inner city Atlanta) **Intervention Arm 1:** "Consolidated"=registry and Outreach [in-person telephone, mail or home visit recall] and Combination group [auto-dialer + Outreach] **Arm 2:** Auto-dialer (client reminder/recall + registry) - Deliverers: trained nonmedical outreach workers **Comparison:** Usual care (registry)	Evaluation of the impact of large-scale registry-based CRR/outreach/home visit intervention on UTD at 24 months Children born July 1995-August 1996 who had received public sector health services and were identified in MATCH registry Eligible patients N=3050 children Group N Intervention 1524 Comparison 763	Proportion of children UTD at 24 months "Consolidated" vs. Comparison	Comparison 259 (34%) of 763	Arm 1: 760 (37.5%) of 1524 Arm 2: 306 (40%) of 763	Arm 1: +3.5 pct pts 95% CI= [-.6, +7.6] Arm 2: 6 pct. pts. 95% CI 1.2, 10.8	Intervention period was 24 months

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Lemstra, et al. (2011) **Study Period:** 2007-2008 **Design Suitability (design):** Greatest Suitability (G-RCT) **Quality of Execution:** 1 limitation **Outcome Measurement:** MMR	**Location:** Canada; Saskatoon Health Region **Intervention:** Home visits + Client reminder/recall + MIMS (database) **Comparison:** Client reminder/recall	**Study Population:** -2 year olds not UTD with MMR vaccination -Subset lived in low-income neighborhoods N=257 Group N Intervention 142 Comparison 115	Proportion of children UTD MMR vaccination	Comparison 56 (48.7%) of 115	Intervention 86 (60.5%) of 142	+11.8 pct pts 95% CI: [-0.4, +24]	1 year

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): McPhee, et al. (2003) **Study Period:** 1998-2000 **Design Suitability (design):** Greatest (Group nonrandomized trial) **Quality of Execution:** Fair (3 limitations) **Outcome Measurement:** Hepatitis B series	**Location:** USA; Dallas TX, compared to Washington DC **Intervention:** Dallas Community-wide education: Community mobilization (coalition with neighborhood and community activities and events) + small media + provider education + home visits to newly immigrated Vietnamese refugees **Comparison:** Washington area Usual care (no community-wide education)	**Setting:** Vietnamese-American communities Telephone survey participants (parents) in study communities Survey All communities Pre 1508 (93%) of 1624 Post 1547 (92.5%) of 1673 Record retrieval (child) among survey participants (parent or provider) Overall Pre 783 (52%) of 1508 Post 784 (51%) of 1547 (all communities includes a Houston arm not included in this review) Children with record Site Pre Post Dallas 307 225 D.C. 243 244	Proportion of children with parent or provider record verified completion of 3 dose vaccination series for hepatitis B Multiple logistic regression analyses for the odds of receipt of 3 dose series by location (compared to D.C.)	Dallas 82 (26.6%) of 307 D.C. 92 (37.8%) out of 243	Dallas 87 (38.8%) of 225 D.C. 92 (37.8%) out of 243	Adjusted change Dallas vs D.C. + 12.2 pct pts [95%CI : +4.6, +28.2] p=0.01 OR 2.15 [95%CI 1.2,3.9]	Dallas 3 years

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Ohmit, et al. (1995) **Study Period:** 1989-1991 **Design Suitability (design):** Moderate suitability (Time-series study) **Quality of Execution:** Fair **Outcome Measurement:** Influenza	**Location:** USA; Southwest Michigan **Intervention:** Communitywide education of physicians and clients plus free vaccination plus mailed postcard client reminders plus outreach in senior centers **Comparison:** Prior usual care (client numbers not given) (Number in whom baseline was assessed not given)	Communitywide; clinics/offices target population - >65 years; otherwise, incompletely described Evaluation in 1,315 participants in 1990-91 and 1,663 in 1991-92)	Influenza vaccination among an elderly population	1989-1990 : 40 %	1991-1992 56%	Influenza, Intervention versus Comparison = 16% change (statistical significance not found)	3 years
Author (Year): Paunio, et al. (1991) **Study Period:** 1982-1986 **Design Suitability (design):** Moderate suitability (Time-series study) **Quality of Execution:** Fair **Outcome Measurement:** MMR	**Location:** Finland **Intervention:** Registry plus mass-media reporting of local data regarding vaccination coverage plus provider reminders plus parent reminders **Comparison:** Usual care before registry	Children aged birth through 11 years in Finland N=138,861 at baseline with 121,324 (87.4%) already vaccinated Interventions implemented in the third year of a national vaccination program (further confounded by a polio outbreak and vaccination effort in 1985)	Number of children who received MMR vaccination for the first time 14-18 month olds 6 year olds	 (89.3%) (83.9%)		MMR, Intervention versus Comparison = 8% change (no significance testing)	4 years

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Rodewald, et al. (1999) **Design Suitability (design):** Greatest suitability (Group RCT) **Quality of Execution:** Arm1: Good (Provider intervention alone: Fair) **Outcome Measurement:** Childhood series	**Location:** USA; Rochester, New York **Arm 1:** Client reminder recall, outreach and tracking, home visits **Arm 2:** Provider assessment with feedback, provider education, provider reminders, client reminder recall, outreach and tracking, home visits **Comparison:** No intervention	Setting: 9 primary care sites serving imporverished and middle class children N = 3015 children Arm 1: 630 Arm 2: 648	Number & percent "up to date" for age-appropriate series completion	Arm 1: 81% Arm 2: 85 % Comparison: 81%	Arm 1: 95% Arm 2: 95% Comparison: 74%	Arm 1: +21 pct pts (95% CI 17, 25) Arm 2: +17 pct pts (95% CI 13,21)	18 months
Author (Year): Stevens-Simon, et al. (2001) **Study Period:** NR **Design Suitability (design):** Greatest suitability (Individual randomized trial) **Quality of Execution:** Fair (2 limiitations) **Outcome Measurement:** Childhood series	**Location:** USA; Denver CO **Intervention:** "health passport" including info re maternal and infant healthcare needs (e.g., vaccinations), accident prevention, child development. Plus client reminders (scheduled well-baby appt). Note: at each appt, passport was completed, returned to client with copies for provider and program administrator. **Comparison:** no passport. Note: both groups enrolled in comprehensive adolescent maternity program.	**Setting:** Colorado Adolescent Maternity Program (CAMP) at U. of Colorado Health Sciences Center **Study population:** CAMP participants N=188 consecutively delivered infants and their mothers N=71 mother-infants randomized to Intervention Group Total sample characteristics: Mean age 17.6 y o % on Medicaid: 92.0 % White: 45.0 % Black 32.0 % Hispanic 21.0	N (%) of infants under-immunized at 9 months of age	I 0% C 0%	I (n=43) 9.0% C (n=78) 9.0% Note: missing data, N=121; 43 in I, 78 in C	[0] pct pts	Intervention period was 9 months

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Szilagyi, et al. (2002) **Study Period:** 1994-1999 **Design Suitability (design):** Greatest suitability (other w/ concurrent comparison) **Quality of Execution:** Fair (4 limitations) **Outcome measurement:** Childhood series	**Location:** USA; Monroe County (Rochester) NY **Intervention:** immunization data base + "staged" city-wide CRR/outreach/home visit - Deliverers: lay outreach workers assigned to primary care practices **Comparison:** Suburbs (data base)	Evaluation of intervention impact on disparities in childhood immunization rates by region (urban vs. suburban) and among blacks, whites, and Hispanics. **Setting:** 10 large primary care practices **Study Population:** Children 2 y or younger Region: N/% birth cohort Inner city 1653 (74%) Rest of city 938 (61%) Suburbs 598 (9%)	Proportion of children UTD at 12 and 24 months Inner city vs. suburbs Rest of city vs. suburbs	Baseline: 67% of inner city 79% of rest of city 88% of suburbs	<u>At 24 months:</u> 84% of inner city 81% of rest of city 88%	<u>At 24 months:</u> Inner city vs. suburbs Difference= +14 pct pts Inner city vs. suburbs Difference=+3 pct pts	Intervention period was 24 months

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Vora, et al. (2009) **Study Period:** 2004-2005 **Design Suitability (design):** Greatest suitability (other w/ concurrent comparison group) **Quality of Execution:** Fair (3 limitations) **Outcome Measurement:** Childhood series	**Location:** USA; south side of Chicago, IL **Intervention:** Client education + client reminder/recall + home visits + (tracking) **Comparison:** usual care (historical control)	Setting: Hospitals 1st study-received well-child care and immz at the FFHC 2nd study-any clinics in a defined zip code Study population: Children - 19-35 mths of age - born at University of Chicago N=400 neonates enrolled n= 146 children completed program	Proportion of children UTD immunizations for the childhood series (at 24 months)	(I) 0% (C) 0%	(I) 91% (C) 49%	+42 pct pts Unable to calculate 95% CI	Intervention period was 1 year
Author (Year): Wood, etal. (1998) **Study Period:** 1994 **Design Suitability (design):** Greatest suitability (Randomized trial) **Quality of Execution:** Good **Outcome Measurement:** DTP/OPV/Hib	**Location:** USA; Los Angeles, California (10 ZIP codes) **Intervention:** Case management with home visits and telephone contact prior to age 6 weeks and before each vaccination appointment, *plus* health passport *versus* **Comparison:** Health passport only	**Setting:** homes and clinics **Study Population:** - clients - aged <15 months - 90% urban - 100% black - low socioeconomic status N= 419 participants	DTP/OPV/Hib (3:2:3 doses, respectively) at 12 months Group Intervention vs comparison	Comparison: 51%	Intervention: 64%	13% change (p = 0.01)	1 year

Study	Intervention Characteristics	Population & Sample Size	Effect Measure	Reported Baseline	Reported Effect	Value Used in Summary [95%CI]	Follow-Up Time
Author (Year): Yokley, et al. (1984) **Study Period:** NR **Design Suitability (design):** Greatest suitability (Group randomized trial) **Quality of Execution:** Fair **Outcome Measurement:** Childhood series	**Location:** USA; Akron, Ohio **Intervention arm 1:** Mailed specific client reminder plus parent incentive lottery (183) **Intervention arm 2:** Mailed specific client reminder plus special off hours clinics (185) **Comparison:** usual care (191)	**Setting:** public health clinic **Study Population:** Study public health clinic: N=1 Underimmunized preschool aged children or the study public health clinic N=1133 (53.9% of all children in clinic) randomly assigned to one of 5 conditions	Vaccinated with at least 1 antigen after 3 months	Arm 1: 3% Arm 2: 4%		Arm 1 = 18 pct pts. (95% CI 8, 27) Arm 2: 16 pct pts. (significant)	3 months

The data presented here are preliminary and are subject to change as the systematic review goes through the scientific peer review process.