

Screening Women for Intimate Partner Violence: A Systematic Review to Update the U.S. Preventive Services Task Force Recommendation

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Background: In 2004, the U.S. Preventive Services Task Force determined that evidence was insufficient to support screening women for intimate partner violence (IPV).

Purpose: To review new evidence on the effectiveness of screening and interventions for women in health care settings in reducing IPV and related health outcomes, the diagnostic accuracy of screening instruments, and adverse effects of screening and interventions.

Data Sources: MEDLINE and PsycINFO (January 2002 to January 2012), Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews (through fourth quarter 2011), Scopus, and reference lists.

Study Selection: English-language trials of the effectiveness of screening and interventions, diagnostic accuracy studies of screening instruments, and studies of any design about adverse effects.

Data Extraction: Investigators extracted data about study populations, designs, and outcomes and rated study quality by using established criteria.

Data Synthesis: A large fair-quality trial of screening versus usual care indicated reduced IPV and improved health outcomes for both groups, but no statistically significant differences between groups.

Fifteen fair- and good-quality studies evaluated 13 screening instruments, and six instruments were highly accurate. Four fair- and good-quality trials of counseling reported reduced IPV and improved birth outcomes for pregnant women, reduced IPV for new mothers, and reduced pregnancy coercion and unsafe relationships for women in family-planning clinics. Fourteen studies indicated minimal adverse effects with screening, but some women experienced discomfort, loss of privacy, emotional distress, and concerns about further abuse.

Limitation: Trials were limited by heterogeneity, lack of true control groups, high loss to follow-up, self-reported measures, and lack of accepted reference standards.

Conclusion: Screening instruments accurately identify women experiencing IPV. Screening women for IPV can provide benefits that vary by population, while potential adverse effects have minimal effect on most women.

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This review is an update for the U.S. Preventive Services Task Force (USPSTF) recommendation on screening women for intimate partner violence (IPV). In 2004, the USPSTF found that evidence was insufficient to support a screening recommendation (1–3). This update focuses on IPV against women and includes studies published since the previous recommendation related to the effectiveness and adverse effects of screening and interventions and the diagnostic accuracy of screening instruments.

Intimate partner violence includes a range of abusive behaviors perpetrated by someone who is or was involved in an intimate relationship with the victim. Although IPV affects both men and women as victims and perpetrators (4), more women experience IPV and most studies about screening and interventions for IPV enroll women. Approximately 1.3 to 5.3 million women in the United States experience IPV each year (5, 6). Lifetime estimates range

from 22% to 39% (7, 8). The National Intimate Partner and Sexual Violence Survey indicated that 30% of women experience physical violence, 9% rape, 17% sexual violence other than rape, and 48% psychological aggression from their intimate partners over their lifetimes (4). Costs related to IPV are estimated to be between \$2 and \$7 billion each year (9).

Intimate partner violence has immediate health effects, such as injuries (10) and death (11) from physical and sexual assault; sexually transmitted infections, including HIV (12); pelvic inflammatory disease (13); unintended pregnancy (14); and psychological distress. Assaults during pregnancy adversely affect the health of pregnant women and newborns (15, 16), and IPV is associated with preterm birth, low birthweight, and decreased mean gestational age (17–19). Long-term conditions that are associated with IPV include chronic pain, neurologic disorders, gastrointestinal disorders, migraine headaches, and other physical disabilities (20–22), as well as posttraumatic stress disorder, depression, anxiety disorders, substance abuse, and suicide (22–26).

Routine screening for IPV in health care settings could identify women at risk and lead to interventions that reduce violence and improve health outcomes. New recommendations from the Institute of Medicine (27), as well as from professional organizations (28–30), support screening. Screening by health care professionals is generally ac-

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Conversion of graphics into slides

ceptable to women under conditions that are perceived as private and safe and when women are asked questions in a comfortable manner, although there is no consensus about the optimal screening setting or method (31).

METHODS

We developed and followed a standard protocol. A technical report that details methods and includes search strategies and additional evidence tables is available at www.uspreventiveservicestaskforce.org (32). This report also includes our review of screening elderly and vulnerable adults for abuse and neglect that is not presented in this article.

Key Questions and Analytic Framework

The USPSTF and Agency for Healthcare Research and Quality (AHRQ) determined the focus, scope, target population, and key questions for this review. Investigators created an analytic framework, incorporating the key questions and outlining patient populations, interventions, outcomes, and adverse effects of the screening process (**Appendix Figure 1**, available at www.annals.org).

The target population included women presenting for health care without problems directly related to abuse, such as physical injuries. Presumably, women with these problems would have evaluations outside the scope of screening. Health care settings included primary care clinics, emergency departments (EDs), and student health centers, among others. Screening techniques included self-administered as well as person-to-person methods. Outcomes included reduced exposure to IPV, physical or mental harms, or mortality related to IPV.

Data Sources and Searches

In conjunction with a research librarian, we used the National Library of Medicine's Medical Subject Headings (MeSH) keyword nomenclature to search Ovid MEDLINE and PsycINFO (2002 to 9 January 2012), Cochrane Central Register of Controlled Trials (fourth quarter of 2011), and Cochrane Database of Systematic Reviews (fourth quarter of 2011) for relevant English-language studies and systematic reviews. We also manually reviewed reference lists of papers and used Scopus to search citations of key studies.

Study Selection

Investigators developed inclusion and exclusion criteria for abstracts and articles on the basis of the target population and key questions. We included research conducted in the United States or in similar populations that received services and interventions applicable to medical practice in the United States published in 2003 or later. After an initial review of abstracts, investigators retrieved full text articles and conducted a second review to ensure eligibility (**Appendix Figure 2**, available at www.annals.org).

To evaluate the effectiveness of IPV screening or interventions, we included randomized, controlled trials (RCTs) that compared treatment and control groups and

reported IPV or health outcomes, as defined by the key questions. Studies of screening or referral rates, attitudes about screening, or plans or intentions related to screening, or studies reporting other types of intermediate outcomes, were not included. To measure the performance of screening techniques, we included diagnostic accuracy studies of screening instruments that reported sensitivity, specificity, or other accuracy measures (**Appendix Table 1**, available at www.annals.org). We excluded studies that lacked a validated reference standard or assessed instruments not feasible for screening. To evaluate adverse effects, we included several study designs that reported adverse effects of screening and interventions. Studies that enrolled both men and women were included if most participants were women or results were reported separately.

Data Abstraction and Quality Rating

An investigator abstracted data on study design and setting; participant characteristics; data collection procedures; numbers enrolled and lost to follow-up; methods of exposure and outcome ascertainment; analytic methods, including adjustment for confounders; and outcomes. A second investigator confirmed its accuracy.

We used criteria developed by the USPSTF to assess study quality (33–37). We assessed the applicability of studies by using the population, intervention, comparator, outcome, timing, and setting (PICOTS) framework (38) adapted to this topic. We considered applicability in determining quality ratings for studies of the diagnostic accuracy of screening instruments because it was relevant to evaluating the patient spectrum. Two investigators independently rated the quality and applicability of each eligible study (good, fair, or poor). Final ratings were determined by consensus.

Data Synthesis and Analysis

We assessed the aggregate quality of the body of evidence for each key question (good, fair, or poor) by using methods developed by the USPSTF on the basis of the number, quality, and size of studies and consistency of results between studies (33). Studies were considered consistent if outcomes were generally in the same direction of effect and ranges of effect sizes were narrow. Consistency was determined by consensus of the investigators.

Role of the Funding Source

The study was funded by AHRQ under a contract to support the work of the USPSTF. Staff at AHRQ and members of the USPSTF developed the scope of the work and reviewed the draft manuscript. The draft report was reviewed by content experts, USPSTF members, AHRQ program officers, and collaborative partners. Approval from AHRQ was required before the manuscript could be submitted for publication, but the authors are solely responsible for the content and the decision to submit it for publication.

Table 1. Studies of Diagnostic Accuracy of Screening Instruments for IPV

Study, Year (Reference)	Screening Test (Reference Standard)	Population	IPV Prevalence, %	Administration
Chen et al, 2005 (40)	HITS (ISA-P English and WAST Spanish)	202 women in an urban family practice clinic	11 (ISA-P or WAST)*, current relationship	Medical students
Dubowitz et al, 2008 (41)	PSQ (CTS2)	200 mothers of children aged <6 y in a pediatric resident clinic	9–76 (CTS2), lifetime	Self
Ernst et al, 2004 (42)	OVAT (ISA)	212 women and 94 men in an ED	20 (ISA), current	Self
Fulfer et al, 2007 (43)	SAFE-T (PVS 1 item)¶	435 women aged ≥18 y in 3 EDs in Illinois	12 (PVS), during preceding year	Self
Houry et al, 2004 (44)	PVS (CTS2) to predict future abuse during 4-mo follow-up	215 women aged ≥18 y in an inner city ED in Colorado	16 (PVS), during preceding year	Research staff
MacMillan et al, 2006 (45)	PVS and WAST (CAS)	2461 women aged 18–64 y in primary care, acute care, and specialty clinics in Ontario, Canada	4–18 (PVS)§§, current	Self, physician or nurse interview, or computer
Paranjape et al, 2003 (46)	STaT (semistructured interview)	75 women in a U.S. urban teaching hospital ED	15 (semistructured interview), current	Research interviewers
Paranjape et al, 2006 (47)	STaT (ISA)	240 women in a U.S. urban public hospital urgent care clinic	33 (ISA) most recent relationship; 15 (ISA), current	Research interviewers
Peralta and Fleming, 2003 (48)	1 personal safety question (modified CTS1)	399 women aged 18–36 y in an urban family medicine clinic in Madison, Wisconsin	44 (CTS1), during previous 90 days	Self
Reichenheim and Moraes, 2004 (49)	AAS (CTS2)	748 women immediately after delivery in maternity wards in urban Brazil, speaking Portuguese	19 (CTS2), during pregnancy	Research interviewers
Sohal et al, 2007 (50)	HARK (CAS)	232 women in general practice waiting rooms in London, United Kingdom	23 (CAS), during preceding year	Self
Thombs et al, 2007 (51)	Modified CTQ-SF (Evaluation of Lifetime Stressors structured interview)	1225 women in a health management organization in Seattle, Washington	25 physical, 57 sexual (CTQ-SF), during childhood	Self
Wathen et al, 2008 (52)	WAST (CAS)	5607 women aged 18–64 y in primary care, acute care, and specialty clinics in Ontario, Canada	14 (CAS), during preceding year	Self
Weiss et al, 2003 (53)	OAS, OVAT, and AAS (ISA)	530 women and 326 men in an ED	19 (ISA), current	Self
Zink et al, 2007 (54)	5 items with nongraphic language (CTS2)	393 mothers in pediatric and family medicine clinics in Cincinnati, Ohio	11 (CTS2), during preceding year	Research interviewers

AAS = Abuse Assessment Screen; CAS = Composite Abuse Scale; CTQ-SF = Childhood Trauma Questionnaire—Short Form; CTS1 = original Conflict Tactics Scale; CTS2 = revised Conflict Tactics Scale; ED = emergency department; HARK = Humiliation, Afraid, Rape, Kick; HITS = Hurt, Insult, Threaten, and Scream; IPV = intimate partner violence; ISA = Index of Spouse Abuse; ISA-P = Index of Spouse Abuse—Physical; LR+ = positive likelihood ratio; LR- = negative likelihood ratio; NPV = negative predictive value; NR = not reported; OAS = Ongoing Abuse Screen; OVAT = Ongoing Violence Assessment Tool; PPV = positive predictive value; PSQ = Parent Screening Questionnaire; PVS = Partner Violence Screen; RR = relative risk; SAFE-T = Secure, Accepted, Family, Even, Talk; STaT = Slapped, Threatened, and Throw; WAST = Woman Abuse Screening Tool.

* Rates were 5% with ISA-P (English) and 10% with WAST (Spanish).

† English HITS cut point score = 10.5.

‡ The patient spectrum was narrow or had limited applicability (single-site, not community-based, non-U.S. or Canadian).

§ Spanish HITS cut point score = 5.5.

|| Results for men and women were combined.

¶ Persons were asked, “Have you been hit, kicked, punched, or otherwise hurt by someone?”

** The sampling method was not random or consecutive or not described.

†† The reference standard was not credible or replicable.

‡‡ Attrition rates were high (>30%).

§§ Rates were 4% with face-to-face PVS in women’s clinics and 18% with computerized PVS in EDs.

Table 1—Continued

Additional Details	Accuracy Measures			Quality Rating
	Sensitivity; Specificity, % (95% CI)	PPV; NPV, % (95% CI)	LR+; LR-	
English†	Sensitivity: 86; Specificity: 99	PPV: 86; NPV: 99	LR+: 91; LR-: 0.14	Fair‡
Spanish§	Sensitivity: 100; Specificity: 86	PPV: 45; NPV: 100	LR+: 7; LR-: 0	
Physical assault	Sensitivity: 19; Specificity: 93	PPV: 63; NPV: 63	LR+: 2.5; LR-: 0.88	Fair‡
Injury	Sensitivity: 29; Specificity: 91	PPV: 38; NPV: 87	LR+: 3.3; LR-: 0.78	
Psychological	Sensitivity: 27; Specificity: 92	PPV: 46; NPV: 83	LR+: 3.3; LR-: 0.79	Fair‡
Results for men and women combined	Sensitivity: 86; Specificity: 83	PPV: 56; NPV: 96	LR+: 5; LR-: 0.16	
Validation study assumes prevalence rates of 8%–22%	Sensitivity: 54; Specificity: 81	PPV: 19–44; NPV: 95–86	NR	Fair** ††
Positive vs. negative response: verbal (RR, 7.3 [95% CI, 3.2–16.2]); violence (RR, 11.3 [CI, 4.8–26.3])	NR	NR	NR	Fair‡ ††
Single item‡: verbal (RR, 7.1 [CI, 3.3–15.4]); violence (RR, 10.9 [CI, 5.0–23.6])				
PVS	Sensitivity: 49; Specificity: 94	PPV: 47; NPV: 94	NR	Good
WAST	Sensitivity: 47; Specificity: 96	PPV: 55; NPV: 94		
≥1 positive response	Sensitivity: 96 (90–100); Specificity: 75 (59–91)	NR	NR	Fair‡ ††
≥2 positive response	Sensitivity: 89 (81–98); Specificity: 100			
≥3 positive response	Sensitivity: 64 (50–78); Specificity: 100			
≥1 positive response	Sensitivity: 95 (90–99.8); Specificity: 37 (29–44)	PPV: 42; NPV: 94	NR	Fair‡
≥2 positive response	Sensitivity: 85 (77–93); Specificity: 54 (46–62)	PPV: 48; NPV: 88		
≥3 positive response	Sensitivity: 62 (51–73); Specificity: 66 (59–73)	PPV: 47; NPV: 78		
Physical or psychological violence	Sensitivity: 9; Specificity: 96	NR	NR	Fair‡ ††
Minor violence	Sensitivity: 32 (25–40); Specificity: 99 (98–99.6)	NR	NR	Fair‡
Severe violence	Sensitivity: 61 (48–74); Specificity: 98 (96–99.0)			
Both	Sensitivity: 32 (24–40); Specificity: 99 (98–99.7)			
For score ≥1	Sensitivity: 81 (69–90); Specificity: 95 (91–98)	PPV: 83 (70–91); NPV: 94 (90–97)	NR	Fair‡
1 question: Physical abuse	Sensitivity: 70; Specificity: 94	NR	LR+: 11	Good
1 question: Sexual abuse	Sensitivity: 82; Specificity: 89		LR+: 7.6	
2 questions: Physical or sexual abuse	Sensitivity: 85; Specificity: 88		LR+: 7	
Results for all participants combined	Sensitivity: 88; Specificity: 89	NR	NR	Good
AAS	Sensitivity: 93; Specificity: 55	PPV: 33; NPV: 97	LR+: 2; LR-: 0.12	Fair‡
OAS	Sensitivity: 60; Specificity: 90	PPV: 58; NPV: 91	LR+: 6; LR-: 0.44	
OVAT	Sensitivity: 93; Specificity: 86	PPV: 75; NPV: 97	LR+: 7; LR-: 0.08	
Positive response to at least 1 question	Sensitivity: 40; Specificity: 91	PPV: 38; NPV: 92	NR	Fair**

RESULTS

Does screening asymptomatic women in health care settings for current, past, or increased risk for IPV reduce exposure to IPV, physical or mental harms, or mortality?

One large cluster RCT met inclusion criteria (39). The trial included 6743 women aged 18 to 64 years who were randomly assigned to screening or nonscreening groups. The primary outcomes were exposure to abuse and quality of life in the 18 months after screening. Secondary outcomes included depression, posttraumatic stress disorder,

alcohol and drug abuse, global mental and physical health, and use of health and social services. Adverse effects of screening were actively monitored.

Participants were recruited when they presented for a health care visit at 1 of 12 primary care, 11 acute care, and 3 obstetrics and gynecology clinic sites in Ontario, Canada. Clinicians at all sites received standardized training in responding to IPV. All women had universal access to health care in accordance with local practice. Participants were given information cards of locally available resources for women with IPV.

Table 2. Randomized Trials of IPV Interventions

Study, Year (Reference)	Comparisons	Population	Intervention
Bair-Merritt et al, 2010 (55)	Home visitation vs. usual care	685 women in hospitals in Hawaii who gave birth to an infant at risk for maltreatment	Home visitation by paraprofessionals for 3 y to promote child health and decrease child maltreatment* (13.6 mean visits in first y)
Curry et al, 2006 (56)	Nursing case management during pregnancy vs. usual care	1000 English-speaking pregnant women aged 14–46 y in prenatal clinics in the United States, with risk for abuse being determined by responses from 3 questions from the AAS	Case management included an assessment and care plan, and women were offered an abuse video and continuing access to a nurse case manager. All participants were offered a card with safety and abuse recognition information, which included phone numbers for national and local resources.
Kiely et al, 2010 (18)¶	Counseling interventions during pregnancy and postpartum vs. usual care	1044 pregnant black women at 6 prenatal care sites in Washington, DC, reporting IPV on the AAS	Prenatal behavioral counseling was done for 4–8 sessions, with up to 2 postpartum sessions. Counseling for IPV emphasized safety behaviors and information on community resources. Smoking and depression were also addressed.
El-Mohandes et al, 2008 (57)¶	Counseling interventions during pregnancy and postpartum vs. usual care	1044 pregnant black women at 6 prenatal care sites in Washington, DC, reporting IPV on the AAS	Prenatal behavioral counseling was done for 4–8 sessions, with up to 2 postpartum sessions. Counseling for IPV emphasized safety behaviors and information on community resources. Smoking and depression were also addressed.
El-Mohandes et al, 2011 (17)¶	Counseling interventions during pregnancy and postpartum vs. usual care	1044 pregnant black women at 6 prenatal care sites in Washington, DC, reporting IPV on the AAS	Prenatal behavioral counseling was done for 4–8 sessions, with up to 2 postpartum sessions. Counseling for IPV emphasized safety behaviors and information on community resources. Smoking and depression were also addressed.
McFarlane et al, 2006 (58)	Wallet-sized referral card vs. 20-minute nurse management protocol	360 women age 18–45 y in urban primary care public health clinics and WIC clinics in the United States with physical or sexual abuse during the past 12 mo using the AAS	Wallet-sized referral card with a safety plan and resources for IPV services. The 20-minute nurse case management protocol (March of Dimes) included providing a brochure with a 15-item safety plan, supportive care, anticipatory guidance, and guided referrals.
Miller et al, 2011 (59)	Counseling intervention vs. usual care	906 women aged 16–29 y in urban family planning clinics in California with responses to an interview suggesting pregnancy coercion	Counseling intervention included educating patients about reproduction coercion and providing information about local IPV and sexual assault resources. Usual care included responding to 2 IPV screening questions on a routine intake form, using a standard clinic protocol.
Taft et al, 2011 (60) (Taft et al, 2009 [61] protocol and methods described)	Mentor support vs. usual care	174 mothers of young children in primary care clinics in Melbourne, Australia, who disclosed IPV or had behavioral symptoms suggestive of abuse	12 mo of weekly home visiting from trained nonprofessional mentors offering advocacy, parenting support, and referrals

AAS = Abuse Assessment Screen; CAS = Composite Abuse Scale; CTS1 = original Conflict Tactics Scale; CTS2 = revised Conflict Tactics Scale; IPV = intimate partner violence; IRR = incidence rate ratio; MOS-SF = Medical Outcomes Scale–Short Form; NNT = number needed to treat; OR = odds ratio; PSI-SF = Parenting Stress Index–Short Form; SF-36 = Short Form–36 items; USPSTF = U.S. Preventive Services Task Force; WIC = Women, Infants, and Children.

* This intervention was offered by 3 community agencies that linked families to appropriate community services, taught child development, role-modeled positive parenting and problem-solving strategies, and offered emotional support.

† Groups were dissimilar at baseline.

‡ Loss to follow-up was high or differential.

§ Intention-to-treat analysis was not used.

¶ The randomization method was not described.

¶ The trial was the National Institutes of Health–DC Initiative to Reduce Infant Mortality in Minority Populations.

On screening days, before seeing their clinicians for the intended health care visit, participants completed the Woman Abuse Screening Tool, an 8-item self-administered instrument measuring physical, sexual, and emotional abuse in the past 12 months (score ≥ 4 was a positive response). Results were provided to the clinicians before the health care visit for women with positive scores. Discussion of positive findings, referrals, or treatment was left to the treating clinician’s discretion. After their visits

and regardless of their scores on the screening tool, all women completed the Composite Abuse Scale, a 30-item self-administered validated research instrument to measure IPV (score ≥ 7 indicated exposure to IPV). The same procedures were followed for nonscreening days, except that participants completed both the screening tool and the abuse scale at the end of the visit. Clinicians could inquire about abuse during the clinic visit if there were indications to do so.

Table 2—Continued

Outcomes	Results (Intervention Group vs. Control Group)	USPSTF Quality Rating
Interviews were done within 1 wk postpartum, annually at age 1–3 y, and follow-up annually until age 7–9 y. Measures included CTS1 at baseline, CTS2 at follow-up, Mental Health Index, and drug and alcohol use.	During the program: IPV victimization (IRR, 0.86 [95% CI, 0.73–1.01]), perpetration (IRR, 0.83 [CI, 0.72–0.96]); physical assault victimization (IRR, 0.85 [CI, 0.71–1.00]), perpetration (IRR, 0.82 [CI, 0.70–0.96]). No statistically significant differences in sexual violence, verbal abuse, or injury between groups. Long-term follow-up: Rates of overall IPV victimization and perpetration decreased with no statistically significant differences between groups. Verbal abuse victimization (IRR, 1.14 [CI, 0.97–1.34]), perpetration (IRR, 1.08 [CI, 0.92–1.26]).	Fair†§
Women were evaluated for stress using the Prenatal Psychosocial Profile with the first assessment before 23 wk of pregnancy and the second between 32 wk and delivery.	Total stress scores decreased in both groups with no statistically significant differences between groups.	Poor†§
Birth outcomes from medical records, and IPV recurrence based on interviews at baseline and follow-up interviews at 22–26 and 34–38 wk gestation and at an average of 10.3 wk postpartum	Women in the intervention group had less recurrent episodes of IPV during pregnancy and postpartum (adjusted OR, 0.48 [95% CI, 0.29–0.80]); fewer very preterm (<33 wk) (1.5% vs. 6.6%; $P = 0.03$) and very low birthweight (<1500 g) (0.8% vs. 4.6%; $P = 0.052$) neonates; and increased mean gestational age (38.2 vs. 36.9 wk; $P = 0.016$).	Good
Occurrence of IPV based on interviews at baseline and follow-up interviews at 22–26 and 34–38 wk gestation and at an average 10.3 wk postpartum	A decline in IPV was seen, from 36.8% to 9.9% between baseline and postpartum ($P < 0.001$) with no statistically significant differences between groups.	Good
Birth outcomes from medical records, and IPV recurrence and other health risks based on interviews at baseline and follow-up interviews at 22–26 and 34–38 wk gestation	Very preterm birth (<33 wk) (OR, 0.43 [95% CI, 0.20–0.95]; NNT, 36); very low birthweight (<1500 g) (OR, 0.45 [CI, 0.14–1.48]; NNT, 83); IPV recurrence, 7.9% vs. 21.6% ($P = 0.04$)	Good
Interviews at baseline and at 6, 12, 18, and 24 mo after baseline	Two years after treatment, both groups reported fewer threats of abuse ($P < 0.001$), assaults, danger risks for homicide, and events of work harassment with no statistically significant differences between groups. Compared with baseline, both groups adopted more safety behaviors by 24 mo. Community resource use declined for both groups ($P < 0.001$) with no statistically significant differences between groups.	Fair†§
A computer-assisted follow-up survey was done 12–24 wk after the baseline survey. Surveys included items from the CTS2 and Sexual Experiences Survey, questions about awareness and recent use of IPV services, and relationship changes from baseline.	Women with recent IPV had decreased pregnancy coercion at follow-up compared with usual care (adjusted OR, 0.29 [95% CI, 0.09–0.91]). Women receiving counseling were also more likely to discontinue an unhealthy or unsafe relationship compared with usual care ($P = 0.013$).	Fair†
Abuse measured by the CAS, depression (Edinburgh Postnatal Depression Scale), well-being (SF-36), parenting stress (PSI-SF), and social support (MOS-SF) at baseline and follow-up	Adjusted difference in CAS scores was -8.67 (-16.2 to -1.15). Other differences were not statistically significant (depression, physical well-being, mental well-being, and parenting stress).	Fair†

Women with positive scores on both the screening tool and the abuse scale in the screened and nonscreened groups were followed for 18 months. Interviewers who were blinded to group assignment met with participants within 14 days of the initial clinic visit for a baseline interview, and again at 6, 12, and 18 months. At follow-up, participants completed several instruments, including the Composite Abuse Scale. Additional services included visits to physicians, nurses, psychologists, or social workers; use of crisis hotlines, sexual assault crisis centers, advocacy or counseling services, or women's shelters; or other types of services.

The 12-month prevalence of IPV at the initial clinic visit was 13% and 12% in the screened and nonscreened groups, respectively. During the initial clinic visit, 44% of

screened women and 8% of nonscreened women discussed IPV with their clinicians. During follow-up, women in both groups accessed additional health care services; had reduced IPV recurrence, posttraumatic stress disorder symptoms, and alcohol problems; and had improved scores for quality of life, depression, and mental health. None of these results were statistically significantly different between groups.

We rated the trial as fair rather than good quality because loss to follow-up was high (43% of screened and 41% of nonscreened participants). Women lost to follow-up had lower levels of education, had higher scores on the Woman Abuse Screening Tool and Composite Abuse Scale, and were more likely to be married than women retained in the trial. Women lost to follow-up in

the screened group had the highest Woman Abuse Screening Tool and Composite Abuse Scale scores among trial participants.

How effective are screening techniques in identifying asymptomatic women with current, past, or increased risk for IPV?

Fifteen studies (40–54) that evaluated the diagnostic accuracy of 13 screening instruments met inclusion criteria (Table 1). Instruments included the Abuse Assessment Screen (49); Partner Violence Screen (44, 45); Hurt, Insult, Threaten, and Scream tool (40); Woman Abuse Screening Tool (40, 45, 52); Humiliation, Afraid, Rape, Kick tool (50); Ongoing Abuse Screen and Ongoing Violence Assessment Tool (42, 53); Slapped, Threatened, and Throw tool (46, 47); Childhood Trauma Questionnaire–Short Form (51); Secure, Accepted, Family, Even, Talk survey (43); Parent Screening Questionnaire (41); 1 personal safety question (48); and 5 items with nongraphic language (54). Five instruments and their modifications were used as reference standards, including the Index of Spouse Abuse (40, 42, 47, 53); Woman Abuse Screening Tool (40); Conflict Tactics Scale (41, 44, 48, 49, 54); Partner Violence Screen (43); and Composite Abuse Scale (45, 50, 52). Structured (51) and semistructured interviews (46) were used as reference standards in 2 studies (Appendix Table 2, available at www.annals.org, includes additional descriptions.)

Three studies were rated as good quality (45, 51, 52) and 12 as fair quality (40–44, 46–50, 53, 54). Methodological limitations included narrow patient spectrums with limited applicability to the target population (40–42, 44, 46–50, 53), selected (that is, not randomly assigned or not consecutive) or inadequately described sampling methods (43, 54), reference standards that were not credible or replicable or were unclear (43, 46, 48), combined results for men and women (42, 53), and high attrition rates (>30%) (44). All studies applied their reference standards to all participants, although only 2 (44, 51) indicated that reference standards were independently interpreted.

Five screening instruments designed to detect current or recent IPV demonstrated high diagnostic accuracy. Both English and Spanish versions of the 4-item Hurt, Insult, Threaten, and Scream instrument had sensitivity and specificity greater than 85% when evaluated in a study of predominantly Hispanic primary care patients, although cut points differed for each version (40). The Ongoing Violence Assessment Tool had higher diagnostic accuracy than either the Ongoing Abuse Screen or Abuse Assessment Screen when evaluated in men and women in an ED (53). The Slapped, Threatened, and Throw instrument showed different results depending on the reference standards and cut points in 2 studies (46, 47). Sensitivity and specificity were maximized when patients reported 2 or more positive responses on this 3-item scale. The Humiliation, Afraid, Rape, Kick instrument showed sensitivity of 81% and

specificity of 95% among women in general practice settings in the United Kingdom (50). The Woman Abuse Screening Tool had sensitivity of 88% and specificity of 89% in a study of 5607 women (52) who were enrolled in the previously described screening trial (39). However, a separate evaluation of 2461 women in the same trial indicated sensitivity of 47% and specificity of 96% (45).

The only study evaluating risk for future IPV indicated that positive responses on the Partner Violence Screen predicted verbal aggression (relative risk, 7.3 [95% CI, 3.2 to 16.2]) and violence (relative risk, 11.3 [CI, 4.8 to 26.3]) during the 4 months after screening (44). A study determining childhood physical and sexual abuse among adult women in an HMO found that a positive response to 1 of 2 questions on the modified Childhood Trauma Questionnaire–Short Form had a sensitivity of 85% and specificity of 88% (51). Two instruments evaluated in mothers in pediatric settings had relatively low sensitivity but high specificity (Parent Screening Questionnaire, 19% to 29% sensitivity and 91% to 93% specificity [41]; Zink and colleagues' 5 questions, 40% sensitivity and 91% specificity [54]).

For screen-detected women with current, past, or increased risk for IPV, how well do interventions reduce exposure to IPV, physical or mental harms, or mortality?

Six RCTs reported in 8 publications met inclusion criteria (Table 2) (17, 18, 55–60). Three trials evaluated interventions targeted to pregnant and postpartum women (17, 18, 55–57). Three trials that enrolled women without regard to pregnancy status were conducted in primary care settings (58, 60, 61); Women, Infants, and Children clinics (58); and family-planning clinics (59). One trial met criteria for good quality (17, 18, 57), whereas 4 were rated fair (55, 58–60) and 1 poor (56). Trials were limited by enrollment of dissimilar groups at baseline (55, 56, 58–60), high or differential loss to follow-up or inadequately described follow-up (55, 56), lack of intention-to-treat or unclear analyses (55, 56, 58), and inadequately described randomization methods (56). All trials had limitations inherent in IPV research, including use of self-reported measures, lack of blinding, and lack of true control groups. Trials enrolled narrowly defined patient populations that may not be applicable to broader populations.

The National Institutes of Health–DC Initiative to Reduce Infant Mortality in Minority Populations was a good-quality RCT of counseling interventions during pregnancy and the postpartum period compared with usual care (17, 18, 57). The trial enrolled 1044 black pregnant women at 6 prenatal care sites in Washington, DC. Screening for cigarette smoking, environmental tobacco smoke exposure, depression, and IPV with the Abuse Assessment Screen was done by using an anonymous computer interview. Additional and follow-up information was collected by a telephone interviewer who was blinded to randomization group designations at baseline, 22 to 26 weeks' gesta-

tion, 34 to 38 weeks' gestation, and an average of 10 weeks after birth. Exposure to IPV was determined by using scores from the Conflict Tactics Scale, which was also used to categorize women as having minor or severe and physical or sexual IPV. Birth outcomes were determined by reviewing participants' medical charts.

Women assigned to the intervention group received prenatal behavioral counseling for 2 to 8 sessions with up to 2 postpartum sessions. The intervention was delivered during routine prenatal care visits at the clinics by social workers or psychologists trained to respond specifically to each identified risk and averaged 35 minutes in length. Counseling for IPV emphasized danger assessment, safety behaviors, and information on community resources. Smoking and depression were also addressed for participants with these problems.

At baseline, approximately one third of the women in both groups reported IPV in the previous year. At follow-up, women in the intervention group had fewer recurrent episodes of IPV during pregnancy and the postpartum period than women receiving usual care (adjusted odds ratio, 0.48 [CI, 0.29 to 0.80]) (17, 18). Reduction in IPV was confined to minor physical violence but not severe or sexual violence. Alcohol use and depression at baseline were associated with recurrent episodes of IPV (18).

Women in the intervention group had better birth outcomes, including fewer very preterm neonates (≤ 33 weeks) (1.5% vs. 6.6%; $P = 0.03$), lower rates of very low birthweight (< 1500 g) (0.8% vs. 4.6%; $P = 0.052$), and increased mean gestational age (38.2 weeks vs. 36.9 weeks; $P = 0.016$).

A fair-quality RCT of home visitation compared with usual care enrolled women in hospitals in Hawaii who gave birth to infants at risk for maltreatment (55). The intervention group received home visitation by paraprofessionals for 3 years and were followed for an additional 6 years. During the program, the intervention group had lower rates of IPV victimization (incidence rate ratio, 0.86 [CI, 0.73 to 1.01]) and perpetration (incidence rate ratio, 0.83 [CI, 0.72 to 0.96]) than the usual care group. Although rates of overall IPV victimization and perpetration also decreased after 6 years of follow-up, there were no statistically significant differences between groups.

A fair-quality cluster RCT of pregnant women and mothers of children aged 5 years or younger evaluated the effectiveness of mentor support compared with usual care in reducing IPV and depression (60). The trial enrolled women in primary care clinics in Australia who disclosed IPV or had behavioral symptoms suggestive of abuse. Scores on the Composite Abuse Scale were reduced in the intervention compared with the usual care group. Differences between groups in depression, physical well-being, mental well-being, and parenting stress scores were not statistically significant.

A fair-quality cluster RCT evaluated a counseling intervention compared with usual care in reducing abuse re-

lated to pregnancy coercion (59). Investigators defined coercion as a lack of control over a woman's reproductive health, including compromised decision making or limited use of contraception and family planning. Women who were randomly assigned to the intervention who reported recent IPV at baseline had decreased pregnancy coercion at follow-up (adjusted odds ratio, 0.29 [CI, 0.09 to 0.91]). Women in the intervention group were also more likely to discontinue an unhealthy or unsafe relationship, regardless of recent IPV status.

Two trials indicated no statistically significant differences between intervention and control groups, including a 2-group RCT comparing the use of a wallet-sized referral card with a nurse management protocol in reducing IPV (58) and a trial comparing nursing care management during pregnancy with usual care (56).

What are the adverse effects of screening for IPV and of interventions to reduce harm from IPV?

Adverse effects related to IPV screening and interventions were reported in 3 trials (39, 55, 58) and 11 descriptive studies (62–72) (Table 3) and were included in 2 systematic reviews (31, 73).

Adverse effects were actively monitored in the Canadian trial of 6743 women that evaluated screening compared with nonscreening in primary care, acute care, and obstetrics and gynecology sites (39). Results of the analysis of a measure developed to monitor adverse effects for this trial (Consequences of Screening Tool) showed no adverse effects with screening. A trial of a 3-year home visitation intervention for at-risk newborns and their mothers suggested increased verbal abuse victimization and perpetration in the intervention group over long-term follow-up compared with a usual care control group, although differences were not statistically significant (55). A randomized, 2-group trial of women receiving either a wallet-sized referral card or a 20-minute nurse management protocol to address IPV found no adverse effects as a result of the intervention (58).

Descriptive studies generally indicated low levels of harm related to IPV screening and interventions, but study populations and methods varied widely. In a study of women receiving services in an urban ED in the United Kingdom, 24% indicated discomfort with screening, particularly women with previous IPV (68). Issues voiced by a few respondents in the various surveys and interviews included loss of privacy (71); worries about provoking abuse by disclosing IPV (69, 71); feelings of sadness, depression, or emotional distress (63, 69); feeling judged by the provider (62) or disappointed in the provider's response (62, 70); and general concerns with IPV screening (62, 64, 68, 72).

DISCUSSION

Table 4 summarizes the evidence reviewed for this update. The effectiveness of IPV screening was evaluated in

Table 3. Studies of Harms of IPV Screening

Study, Year (Reference)	Study Description	Adverse Effect Outcome
Bair-Merritt et al, 2010 (55)	RCT of 685 mothers comparing home visitation after childbirth to reduce IPV vs. no home visitation	Verbal abuse victimization rates (IRR, 1.14 [95% CI, 0.97–1.34]) and perpetration rates (IRR, 1.08 [CI, 0.92–1.26]) increased in the intervention group.
Chang et al, 2003 (62)	7 semi-structured focus group interviews with 41 women in IPV support groups or battered women's shelters	Negative consequences of screening included feeling judged by the provider, increased anxiety about the unknown, feeling that the intervention protocol was cumbersome or intrusive, and disappointment in the provider's response.
Houry et al, 2008 (63)	Prospective, observational study of 3083 men and women in a large, urban ED, where patients were screened by using a touch screen kiosk, and those with positive responses were provided with resources and information and subsequently assessed for IPV, safety issues, and use of resources	None of the screened participants reported safety issues in the ED after participating in screening. Of participants who screened positive for IPV, 2 of 216 had safety concerns or emotional distress related to the screening during follow-up. 1 of 65 of telephone interview participants had an issue related to screening. No increases in injuries, violence, or calls to the police were reported as a result of screening or follow-up.
Hurley et al, 2005 (64)	Convenience sample of 514 adults visiting an ED in Nova Scotia and Newfoundland, Canada	86% believed it was appropriate for all women to be asked whether they had experienced violent or threatening behavior from someone close to them; 10% believed it was inappropriate; 3% had no opinion
Kozioł-McLain et al, 2008 (65)	36 women interviewed several weeks after IPV screening	97% perceived screening as nonthreatening and safe, with no risks incurred
Liebschutz et al, 2008 (66)	Interviews of 27 abused women	Women had no instances of harmful disclosure in any health care setting (ED, obstetrics and gynecology clinics, or primary care clinics), although some disclosures were not helpful.
MacMillan et al, 2009 (39)	RCT of 6743 women comparing IPV screening and communication of positive results with clinicians vs. no screening	Screened women reported no harms related to screening on COST.
McFarlane et al, 2006 (58)	RCT of 360 women receiving either a wallet-sized referral card or a 20-minute nurse management protocol to address IPV	Participants reported no adverse effects of the interventions.
Renker and Tonkin, 2006 (67)	519 women completing anonymous computer interviews in maternity units in the United States that asked about IPV screening and interventions, past disclosure, preferences about screening, and violence during pregnancy	Most women (97%) had no feelings of anger or embarrassment and were not offended when screened for IPV.
Sethi et al, 2004 (68)	198 women receiving services in an urban ED in the United Kingdom who completed a modified WHO Multi-country Study on Women's Health and Domestic Violence questionnaire	24% felt uncomfortable when asked about IPV, with higher discomfort among those with previous abuse. Some women commented on the need for privacy and safety and had concerns about direct IPV questions.
Spangaro et al, 2010 (69)	Retrospective survey of screened women in Australia, 122 disclosed abuse and 241 did not report abuse	5 of 119 participants with abuse indicated sadness or depression and 1 woman experienced further abuse as a result of her disclosure
Spangaro et al, 2011 (70)	Interviews of 20 women followed up 6 mo after disclosing abuse in response to screening	None of the women described adverse effects from screening; however, 8 of 20 believed it was unremarkable and had minimal effect.
Weinsheimer et al, 2005 (71)	95 women in a trauma center who completed a survey about IPV screening	18% of women believed screening infringed on their privacy, but most (90%) felt it was appropriate to ask, and approximately 25% of abused women believed reporting would increase their chances of further harm
Zeitler et al, 2006 (72)	645 women aged 15–24 y in family planning clinics in the United States who completed a survey	Although most women (90%) believed universal IPV screening is a good idea, 36% of younger women (aged 15–18 y) had concerns.

COST = Consequences of Screening Tool; ED = emergency department; IPV = intimate partner violence; IRR = incident rate ratio; RCT = randomized, controlled trial; WHO = World Health Organization.

a single large, fair-quality RCT of women who were randomly assigned to screening or nonscreening groups. Although results indicated that women in both groups had reduced IPV recurrence, posttraumatic stress disorder symptoms, and alcohol problems and improved scores for quality of life, depression, and mental health, differences were not statistically significant between groups (39). More women in the screened group initiated discussions about IPV with their clinicians, indicating at least a change in the clinic visit related to screening.

Several issues should be considered when interpreting the results of the screening trial. Women with positive

screenings were not offered a specific intervention and few screen-positive women had discussions about IPV with their clinicians during their clinic visits. Women who were randomly assigned to the nonscreening group were provided with information cards of locally available resources for women with IPV, which, in itself, is an intervention in other studies. Women in the nonscreening group had extensive questioning about IPV over the 18 months of the trial. These experiences could increase their self-awareness of IPV, affect their utilization of services, and influence outcomes of the trial by creating a substantial Hawthorne effect (that is, the phenomenon that study participants

change their behavior as a result of being involved in the study).

Fifteen studies evaluated the diagnostic accuracy of 13 screening instruments. Overall, studies were consistent, applicability was high, and quality was fair to good. Five instruments demonstrated high accuracy in identifying women with current or recent IPV, and an instrument with 2 questions accurately identified women with histories of childhood abuse. Positive responses on the Partner Violence Screen predicted verbal aggression and violence during the 4 months after screening.

Six trials evaluated interventions to reduce IPV. Although trials were heterogeneous, results were largely con-

sistent for indicating that counseling interventions provided benefits. These include reducing IPV and improving birth outcomes for pregnant women, reducing IPV for new mothers, and reducing pregnancy coercion and unsafe relationships for women in family-planning clinics. Applicability of trial data was limited, and quality was fair to good.

Few studies reported adverse effects of screening and interventions. A large RCT of screening indicated no differences in adverse effects for women who were either exposed or not exposed to IPV (39). Descriptive studies generally indicated low levels of adverse effects related to IPV screening, but study populations and methods varied. Overall results were consistent, applicability was unclear

Table 4. Summary of Evidence for IPV Screening

Studies, by Key Question	Design	Limitations	Consistency	Applicability	Overall Quality	Findings
Key question 1: Does screening asymptomatic women in health care settings for current, past, or increased risk for IPV reduce exposure to IPV, physical or mental harms, or mortality?						
1 study	RCT	High attrition rates; differential loss to follow-up; Hawthorne effect* among control participants	Not relevant	High	Fair	Women in both groups had reductions in IPV recurrence, PTSD symptoms, and alcohol problems; and improvements in scores for quality of life, depression, and mental health, but no differences between groups.
Key question 2: How effective are screening techniques in identifying asymptomatic women with current, past, or increased risk for IPV?						
15 studies of 13 instruments for identifying IPV in health care settings	Diagnostic accuracy studies with cross-sectional and prospective data	Enrollment of dissimilar groups at baseline, high attrition rates, unclear application of the reference standard	Consistent	High	Fair to good	6 instruments with 1–8 items demonstrated sensitivity and specificity >80% in clinical populations of asymptomatic women; HARK, HITS (English and Spanish versions), modified CTQ-SF, OVAT, STaT, and WAST
Key question 4: For screen-detected women identified through screening with current, past, or increased risk for IPV, how well do interventions reduce exposure to IPV, physical or mental harms, or mortality?						
6 studies	RCT	Enrollment of dissimilar groups at baseline, high and/or differential loss to follow-up, recall bias, missing data, Hawthorne effect* among control participants	Consistent	Some trials use narrowly defined populations that may limit applicability	Fair to good	A trial of counseling vs. usual care during pregnancy reported decreased IPV and improved birth outcomes with counseling. Two trials of home visitation vs. none for young mothers resulted in improved IPV outcomes with visitation. Counseling resulted in decreased pregnancy coercion and resolution of unsafe relationships vs. usual care in 1 trial. Two trials showed improved outcomes in intervention and control groups without differences between them (counseling vs. referral cards; nurse management vs. usual care in pregnancy).
Key questions 3 and 5: What are the adverse effects of screening for IPV and of interventions to reduce harm from IPV?						
14 studies	RCT, prospective cohort, cross-sectional	Descriptive data with variability of populations, measures, and analysis	Consistent	Unclear, most data are descriptive and come from small samples	Fair	Three RCTs reported no adverse effects. Descriptive studies indicated that screening has minimal adverse effects, but some women experience discomfort, loss of privacy, emotional distress, and concerns about further abuse.

CTQ-SF = Childhood Trauma Questionnaire–Short Form; HARK = Humiliation, Afraid, Rape, Kick; HITS = Hurt, Insult, Threaten, and Scream; IPV = intimate partner violence; OVAT = Ongoing Violence Assessment Tool; PTSD = posttraumatic stress disorder; RCT = randomized, controlled trial; STaT = Slapped, Threatened, and Throw; WAST = Woman Abuse Screening Tool.

* The Hawthorne effect is when participants change their behavior as a result of being involved in the study.

because most studies were based on small selected samples, and overall quality was fair.

Limitations of this review include using only English-language publications and studies applicable to U.S. screening populations and practice. These inclusion criteria improved applicability but may have also excluded important research. However, our extensive literature review and content experts did not identify critical non-English-language studies. This review also focused exclusively on IPV victimization in women and did not consider studies of women as perpetrators or men as victims. A comprehensive review of these studies would probably provide additional insights for IPV screening among these populations.

Our inclusion criteria targeted specific study designs and health outcomes that disqualified most research in this field. Although RCTs are the gold standard for evaluating efficacy and effectiveness, IPV research does not readily fit this standard because of its unique methodological challenges and ethical issues. These include providing intervention services to study participants in control groups who require them; inability to conduct double-blind trials; use of self-reported measures; lack of accepted reference standards and outcome measures; loss to follow-up; and confidentiality, reporting, and safety concerns with enrolling and following study participants, among others. How well the results of studies translate to clinical practice is also not clear, although most studies were conducted in health care settings and enrolled patients from actual practices. The positive predictive value of screening, as well as potential effects of interventions, would be expected to be greatest in populations with the highest IPV prevalence rates.

Several evidence gaps could be addressed by emerging research. Women have higher rates of IPV disclosure using self-administered methods than face-to-face questioning (45, 74). Computerized screening increases rates of IPV discussion, disclosure, and service provision (75–77) and is more acceptable for patients (78, 79). Patients also perceived use of an audio questionnaire as more private and less likely to increase risk for abuse (80). Further evaluation of the accuracy, as well as efficiency and acceptability, of these methods could lead to improvement in screening processes.

Research evaluating health system approaches to screening and intervention could improve quality, standardization, and rates of screening compared with approaches that depend on individual clinics or practitioners to implement. Methods could include using diagnostic codes to guide screening in ED settings (81), or screening during the hospital admissions process, for example. Coupled with the systems approach to screening, systems-based protocols for further evaluation and referral for persons with positive screening results could increase screening effectiveness. Studies that evaluate the feasibility, acceptability, and outcomes of these approaches would provide valuable guidance to health systems interested in implementing them.

In conclusion, screening instruments designed for health care settings can accurately identify women experiencing IPV. Screening women for IPV could reduce IPV and improve health outcomes depending on the population screened and outcome measured, although effectiveness trials have important limitations. Screening has minimal adverse effects, but some women experience discomfort, loss of privacy, emotional distress, and concerns about further abuse.

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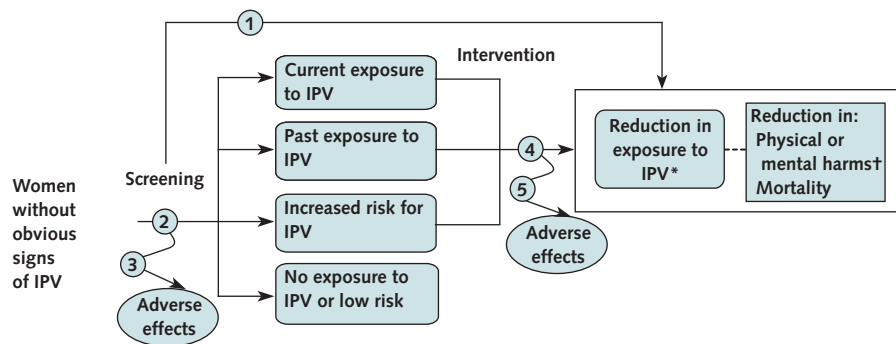
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Final approval of the article: H.D. Nelson, C. Bougatsos. Provision of study materials or patients: H.D. Nelson. Statistical expertise: H.D. Nelson. Obtaining of funding: H.D. Nelson, C. Bougatsos. Administrative, technical, or logistic support: H.D. Nelson, C. Bougatsos, I. Blazina. Collection and assembly of data: H.D. Nelson, C. Bougatsos, I. Blazina.

Appendix Figure 1. Analytic framework and key questions for screening women for IPV.



Key Questions

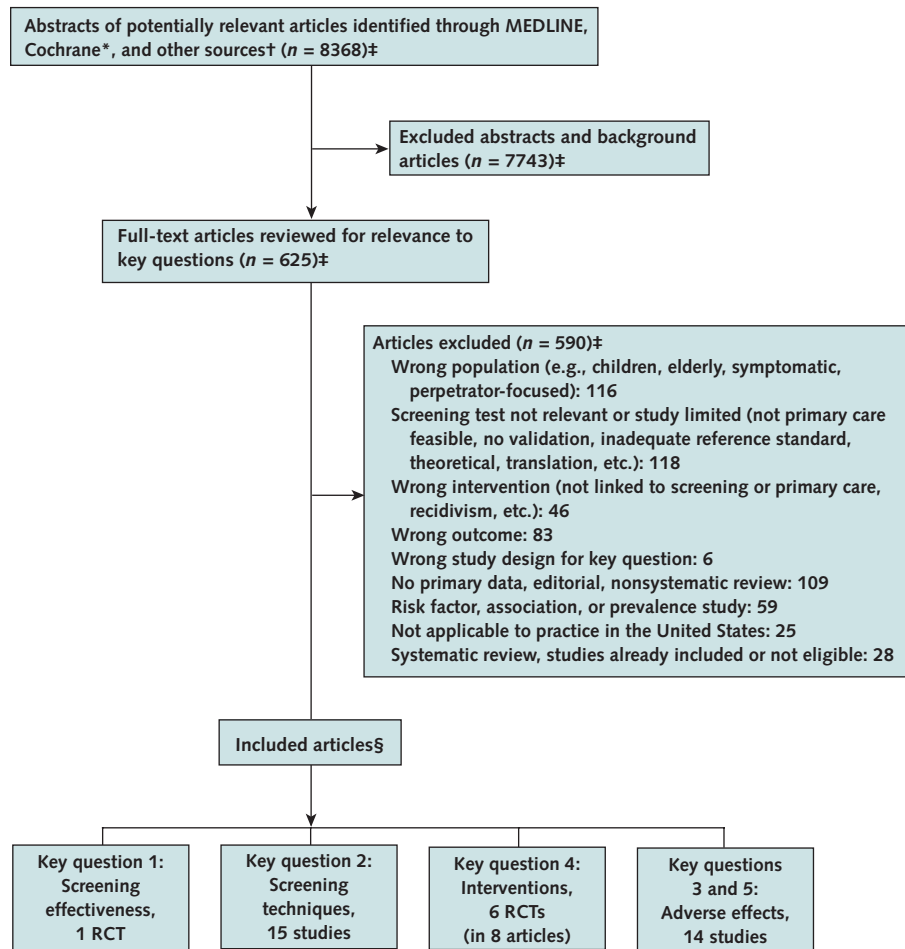
1. Does screening asymptomatic women in health care settings for current, past, or increased risk for IPV reduce exposure to IPV, physical or mental harms, or mortality? Health care settings include primary care clinics, EDs, and student health centers, among others.
2. How effective are screening techniques in identifying asymptomatic women with current, past, or increased risk for IPV? Techniques include self-administered (e.g., computerized-enabled tool or patient self-report) as well as person-to-person (e.g., clinician-to-patient) methods.
3. What are the adverse effects of screening for IPV?
4. For screen-detected women with current, past, or increased risk for IPV, how well do interventions reduce exposure to IPV, physical or mental harms, or mortality?
5. What are the adverse effects of interventions to reduce harm from IPV?

ED = emergency department; IPV = intimate partner violence.

* Including reduction in the level of violence or abuse and leaving an unsafe situation.

† Including physical trauma (fractures, dislocations, and brain injury); unwanted pregnancy and sexually transmitted diseases; mental trauma and its repercussions, such as depression, anxiety, and posttraumatic stress; social isolation; quality of life; and chronic medical conditions, among others.

Appendix Figure 2. Summary of evidence search and selection.



RCT = randomized, controlled trial.

* Cochrane databases include the Cochrane Central Register of Controlled Trials and the Cochrane Database of Systematic Reviews.

† Identified from reference lists and suggested by experts.

‡ Includes search results for child, adult, and elderly populations. Studies of children and elderly populations are included in separate reports.

§ Studies that meet inclusion criteria for key questions, some studies apply to more than 1 key question.

Appendix Table 1. Measures of Diagnostic Accuracy

Term	Definition	Interpretation
Sensitivity	The proportion of patients with a condition who test positive	Sensitivity, specificity, PPV, and NPV are expressed as percentages; the higher the percentage, the better the accuracy of the test.
Specificity	The proportion of patients without a condition who test negative	
PPV	The proportion of patients with positive tests who have the condition	
NPV	The proportion of patients with negative tests who do not have the condition	
LR+*	The odds of having a condition when the test is positive	For LRs, if results are >1, test results are related to the condition. If results are <1, results are associated with absence of the condition. If results are close to 1, the test is not helpful for screening purposes.
LR-*	The odds of not having a condition when the test is negative	
AUC	The ROC is a graphical plot of sensitivity (or true positive rate) vs. 1-specificity (or false-positive rate).	The AUC provides an estimate of the discriminatory accuracy of the test. If results are ≤ 0.50 , discriminatory accuracy is no better than a coin toss. If results range between 0.50 and 0.70, the test has moderate accuracy. If results are >0.70, the test may be useful clinically.

AUC = area under the curve; LR = likelihood ratio; NPV = negative predictive value; PPV = positive predictive value; ROC = receiver–operating characteristic curve.
* LRs use sensitivity and specificity to determine whether a test result usefully changes the probability that a condition exists.

Appendix Table 2. Instruments Used in Studies of IPV Screening

Name (Reference)	Scales	Scoring	Description
AAS (49)	5 items, dichotomous	0–5 points	5-item instrument, designed for clinician-administered interviews, assesses sexual coercion, lifetime abuse, current abuse, and abuse during pregnancy; any affirmative response is considered a positive screen
CTQ-SF (51)	28-item, 5-point Likert scale	Positive response if any answer except “never”	Self-report instrument for adults that assesses abuse and neglect in childhood and includes separate scales for physical and sexual abuse
CAS (45, 50, 52)	30 items, 6-point Likert scale	0–150 points	Self-report scale measuring 4 dimensions of IPV in the preceding 12 mo (severe combined abuse, emotional abuse, physical abuse, and harassment)
CTS2 (41, 44, 48, 49, 54)	78 items, 8-point Likert scale; various revisions have fewer items	Prevalence, frequency, severity level, or mutuality	Self-report or interview scale, with one half of the questions pertaining to the respondent’s behavior and one half to the respondent’s partner; the scale includes dimensions of negotiation, psychological aggression, physical assault, sexual coercion, and injury
HARK (50)	4 items, dichotomous	0–4 points	4-item self-report survey, adapted from the AAS
HITS (40)	4 items, 5-point Likert scale	4–20 points	4-item self-report or clinician-administered survey; each item scored 1 (never) through 5 (frequently) on a Likert scale; score of ≥ 11 maximizes differentiation between abused and nonabused respondents
ISA (40, 42, 47, 53)	30 items	0–100 points	Self-report scale measuring 11 types of physical abuse (ISA-P) and 19 types of nonphysical abuse perpetrated by a male partner; higher scores indicate higher frequency of severe abuse
OAS and OVAT (42, 53)	5 item and 4 items, dichotomous	0–5 and 0–4 points	OVAT contains 4 items assessing current abuse: “At the present time, does your partner threaten you with a weapon?”; “At the present time, does your partner beat you so badly that you must seek medical help?”; “At the present time, does your partner act like he/she would like to kill you?”; and “My partner has no respect for my feelings.”
PSQ (41)	3 items, dichotomous	0–3 points	3-items about partner violence: “Have you ever been in a relationship in which you were physically hurt or threatened by a partner?,” “In the past year, have you been afraid of a partner?,” and “In the past year, have you thought of getting a court order for protection?”
PVS (44, 45)	3 items, dichotomous	0–3 points	3-item clinician-administered instrument measuring past physical violence and perceived personal safety; a score of ≥ 1 is considered positive for IPV.
SAFE-T (43)	5-items, dichotomous	0–5 points	5 questions about relationship with partner: secure at home, accepted by partner, family likes partner, even disposition of partner, and talks with partner to resolve differences
STaT (46, 47)	3 items, dichotomous	0–3 points	3-item self-report survey: “Have you ever been in a relationship where a) your partner has pushed or slapped you?; b) your partner threatened you with violence?; or c) your partner has thrown, broken, or punched things?”
WAST (40, 45, 52)	8 items, 3-level responses (0 = never; 1 = sometimes; 2 = often)	0–16 points	8-item instrument measuring physical, sexual, and emotional abuse in the preceding 12 mo; a score of ≥ 4 indicates exposure to IPV; WAST short form includes 2 questions about tension in the relationship and how arguments are resolved
5 Domestic Violence Questions (54)	5 items, dichotomous	0–5 points	5 general domestic violence items with nongraphic language that could be administered with children present

AAS = Abuse Assessment Screen; CAS = Composite Abuse Scale; CTS2 = revised Conflict Tactics Scale; CTQ-SF = Childhood Trauma Questionnaire—Short Form; HARK = Humiliation, Afraid, Rape, Kick; HITS = Hurt, Insult, Threaten, and Scream; IPV = intimate partner violence; ISA = Index of Spouse Abuse; OAS = Ongoing Abuse Screen; OVAT = Ongoing Violence Assessment Tool; PSQ = Parent Screening Questionnaire; PVS = Partner Violence Screen; SAFE-T = Secure, Accepted, Family, Even, Talk; STaT = Slapped, Threatened, and Throw; WAST = Woman Abuse Screening Tool.