

Appendix
Clinic-Based Programs to Prevent Repeat Teen Pregnancy: A Systematic Review
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Appendix Table 1. Electronic Databases Searched

Database	First review (January 1, 1985–February 28, 2011)	Updated review (March 1, 2011–April 30, 2016)
Cumulative Index to Nursing and Allied Health Literature (CINAHL)	http://ebscohost.com/	www.ebscohost.com/nursing/products/cinahl-databases/cinahl-complete
The Campbell Library	http://www.campbellcollaboration.org/library.php	http://www.campbellcollaboration.org/
The Cochrane Library	www.thecochranelibrary.com	http://onlinelibrary.wiley.com/cochranelibrary/search
Database of abstracts of reviews of effects (DARE)	http://www.crd.york.ac.uk/crdweb/	http://www.crd.york.ac.uk/CRDWeb/
EMBASE	http://ebscohost.com/	http://www.embase.com/
MEDLINE	http://ebscohost.com/	
PsycINFO	www.apa.org/psychinfo	www.apa.org/pubs/databases/psycinfo/index.aspx
PubMed (pre MEDLINE)	http://ebscohost.com/	http://www.ncbi.nlm.nih.gov/pubmed/
UK National Health Service Economic Evaluation Database (NHS EED)	http://www.crd.york.ac.uk/crdweb/	http://www.crd.york.ac.uk/CRDWeb/
U.S. National Guideline Clearinghouse (NGC)	www.guidelines.gov	http://www.guideline.gov/
HealthSTAR	http://www.kfinder.com/newweb/Products/hstar.html	http://www.library.georgetown.edu/
POPLINE	http://www.popline.org/	http://www.popline.org/
Education Resource Information Center (ERIC)	http://www.eric.ed.gov/	https://eric.ed.gov/
UK National Institute of Clinical Excellence (NICE)	http://www.nice.org.uk/	http://www.nice.org.uk/
Evidence for Policy and Practice Information (EPPI) database of evidence	http://eppi.ioe.ac.uk/cms/	http://eppi.ioe.ac.uk/webdatabases/
TRIP	http://tripdatabase.com/	http://tripdatabase.com/

Appendix Table 2. Search Terms

Set #	Concept	PubMed search statements
1	Family planning	“family planning”[All fields] OR “family planning services”[MeSH] OR “family planning policy”[MeSH] OR “reproductive health services”[MeSH] OR “Title X”[All fields] OR “planned parenthood” [All fields] OR contraception[MeSH] OR “contraceptive agents”[MeSH] OR “contraceptive devices”[MeSH] OR “contraception behavior”[MeSH] OR “birth control”[All fields] OR contracept*[All fields]
2	Adolescents	adolescent[MeSH] OR “adolescent behavior”[MeSH] OR “adolescent development”[MeSH] OR “pregnancy in adolescence”[MeSH]
3	Youth-friendly services	“adolescent health services”[MeSH] OR “youth friendly services”[All fields] OR “adolescent friendly services”[All fields]
4	Parental involvement	“parental notification”[MeSH] OR “parental consent”[MeSH] OR “parental involvement”[All fields] OR “parental behavior”[All fields] OR “parent child relations”[All fields] OR “parental role”[All fields] OR “family involvement”[All fields] OR “parental investment”[All fields] OR “parent child communication”[All fields]
5	Confidentiality/Privacy	confidentiality[MeSH] OR privacy[MeSH] OR confidentiality[All fields] OR “privileged communication”[All fields]
6	Combined sets – general	((#1) AND (#2)) NOT (#3 OR #4 OR #5)
7	Combined sets – youth-friendly services	(#6) AND (#3)
8	Combined sets – parental involvement	(#6) AND (#4)
9	Combined sets – confidentiality/privacy	(#6) AND (#5)

Notes: Bold terms added in the updated review (March 1, 2011–April 30, 2016).

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Appendix Table 3. Populations, Interventions, Comparators, Outcomes, Timing, and Setting (PICOTS) Inclusion and Exclusion Criteria for the Adolescent-focused Systematic Review

Area	KQ #	Inclusion criteria	Exclusion criteria
Populations	KQ 1–6	The population between the ages of 10–24 years	Other populations that fall outside of the adolescent/young adult population
Interventions	KQ 1–5	A clinical or community-based service, strategy, program, practice, activity, or treatment implemented to improve quality family planning-related processes or outcomes of adolescents/young adults	All other interventions that are not part of the targeted intervention being studied
Comparators	KQ 1–5	A comparator or control group to which the above strategy, service, intervention, etc. is compared. This can consist of no intervention, usual care, ^a or a different strategy, service, intervention, etc. to increase intended consequences and/or reduce unintended consequences relative to the topic area of adolescent/young adult quality family planning services	Studies with no comparison or control groups to which the targeted intervention can be compared for efficacy or effectiveness
Outcomes	KQ 1 KQ 2 KQ 3	Long-term outcomes of an adolescent/young adult population Medium-term outcomes of an adolescent/young adult population Short-term outcomes of an adolescent/young adult population	Studies that either assess the outcomes of non-adolescent/young adult populations or do not assess effects of intervention on relevant outcomes
Time frames	KQ 1–6	Published between March 1, 2011–April 30, 2016	Studies that fall outside of the predetermined date range; Studies that do not meet the predetermined length of study duration
Settings	KQ 1–6	Care or study settings (e.g., Federally Qualified Health Centers, public health clinics, school-based clinics, community-based programs, etc.) relative to topic area of adolescent/young adult quality family planning services ^b	All other settings that fall outside of the targeted care settings
Study design	KQ 1–3 KQ 4–5	Studies must have a two-group or multiple-group design with an intervention of interest and at least one comparator, including pre-/post-intervention studies with one cohort Studies must regard interventions described in the studies addressing KQ 1, 2, and/or 3	Studies that fall outside of the predetermined study design inclusion criteria

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KQ 6 Studies may include descriptive studies

^aUsual care is defined in this review as the current standard of care for a particular population or setting before implementation of an intervention designed to increase intended consequences or reduce unintended consequences in the topic area of adolescent/young adult quality family planning.

^bFor the repeat teen pregnancy prevention systematic review, included study setting was restricted to clinical settings where family planning services were delivered (Federally Qualified Health Centers, public health clinics, school-based clinics, etc.).

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Appendix Table 4. Evidence Table for Five Included Studies

Citation/funding source/location	Study design/setting	Population	Provider type	Key outcomes/results	Quality
Elster et al. (1987) Funding: Office of Adolescent Pregnancy Programs WT Grant Foundation Location: Salt Lake City, Utah	Controlled trial without randomization/Teen Mother and Child Program (TMCP) at University of Utah School of Medicine Aspects of program: In-depth psychosocial and nutritional assessment; medical care and other services, including education about pregnancy, labor and delivery, contraception and infant health; individual counseling about interpersonal relationship, financial management, school and work, parenting, and stress and coping;	<18 year old pregnant adolescents, English speaking Enrolled n=260 Intervention (TMCP) n=125 (85% white, 14% Hispanic, 1% other) Control n=135 (76% white, 22% Hispanic, 2% other) 12-month follow-up n=158: Intervention (TMCP) n=75 (91% white, 9% Hispanic, 0% other) Control n=83	Interdisciplinary team: a certified nurse/midwife, a social worker, a nutritionist, a financial counselor, a pediatrician, a nurse practitioner, and a counselor who coordinated a father's outreach component	Group differences on repeated pregnancy at 12 months (8% in intervention vs 18% control) approached, but did not reach, statistical significance ($p<0.10$). At 12-month follow up, the intervention group showed marginally lower risk for repeat pregnancy, lower in school/graduation/working rate, and was less likely to receive entitlements, have baby with incomplete immunization, and have knowledge of infant development compared with control group. At 26 month follow up, intervention group was less likely to have baby with incomplete immunization and group differences on repeated pregnancy were not significant (29%	Level II-1 Strengths: Follow-up time ≥ 1 year Weaknesses: Subjects not randomly assigned to the intervention, inability to document the amount and types of services received by mothers in the comparison group, high attrition External validity: May not be generalizable to

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	and couple and family counseling	(80% white, 19% Hispanic, 1% other)		intervention vs 39% in control).	populations other than urban, mostly white, relatively advantaged youth and contemporary youth
		26-month follow-up n=118: Intervention (TMCP) n=52 (87% white, 13% Hispanic, 0% other) Control n=66 (80% white, 18% Hispanic, 2% other)			
Rabin et al. (1991)	Retrospective cohort/Urban hospital center	<20 years old, pregnant adolescents, race not specified	Interdisciplinary team (including obstetrician-gynecologists, pediatricians, social workers, and health educators)	The exposed group experienced less maternal and infant morbidity, greater school attendance, graduation, employment, and contraceptive use than the control group ($p \leq .0001$). Fewer patients in the subject group became pregnant again during their adolescence for all years of the program; 9% of subjects and 70% of controls repeated a pregnancy before age 20.	Level II-2 Strengths: 87% of the intervention group attended the comprehensive program consistently after 7 years Weaknesses: Lack of
Funding: unknown	Aspects of program: Teen-tot care, on-call practitioner, bi-weekly classes on reproductive health and family life for teen, her partner, and family	Exposed, n=498 Control, n=91			
Location: New York City					

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					information on types of services received by mothers in the comparison group
					External validity: May not be generalizable to youth in non-urban settings and contemporary youth
O'Sullivan et al. (1992)	RCT/Large urban teaching hospital	243 black mothers who were 17 years of age or under and who delivered a well-baby at a large urban teaching hospital located in the eastern U.S.	Master's prepared nurse practitioner	The repeat pregnancy rate in the intervention group was 12% (13/108 for whom data were available) after 18 months, and 28% (32/113 for whom data were available) in the control group. A greater proportion of mothers in the intervention group compared with the control group attended well-baby	Level I Strengths: Study groups comparable in terms of maternal age, length of prenatal care, and previous pregnancy history; Follow-
Funding: Robert Wood Johnson Foundation	Aspects of program: Family planning and parenting counseling, as well as education about infant care at well-baby visits at 8 time points (i.e., 2 weeks, 2 months, 4 months, 6 months, 9				
Location: Eastern U.S.					

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<p>months, 12 months, 15 months, and 18 months)</p>	<p>Intervention n=120 Control n=123</p>	<p>visits at 2-weeks (92% vs 76%; $p<0.01$), 6 months (63% vs 40%; $p<0.001$), and 18 months (40% vs 18%; $p<0.01$).</p>	<p>up time >1 year (18 months); In spite of the high dropout rate in both groups, 91% of the teen mothers were located after 18 months for the final interview</p>
			<p>Weaknesses: Intervention had high attrition for both experimental and control groups</p>
			<p>External validity: May not be generalizable to youth in non-urban settings and contemporary youth</p>

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Setzer et al. (1992)	Cohort study/Comprehensive, school-based clinic	All West Dallas adolescent mothers age 18 or younger who delivered during the 24-month period of 1986–1987 (n=339)	OB nurse practitioner	No differences were found in repeat delivery rates, by ethnicity or site. The repeat delivery rates during the 24-month period from the index birth were lower in the school-based intervention group compared to the local family planning and prenatal care clinic group (19% vs 28%), but this difference was not significant	Level II-2
Funding: unknown	Aspects of program: Pregnancy and sexually transmitted infection testing, OB screening, nutrition counseling, WIC nutritional supplements, prenatal care, participation in a parenting education program, postpartum family planning referrals, and some primary care services	School-based intervention group (WDYC) n=174 (75% black, 24% Hispanic, 1% white [and other])			Strengths: Objective measures of outcomes (hospital medical records, clinic records); comparison group of adolescent residing in the same geographic community
Location: Dallas, Texas		Local family planning and prenatal care clinic control group (MHFPP) n=165 (49% black, 46% Hispanic, 4% white [and other])			Weaknesses: Records available between two study clinics were inconsistent External validity: May not be generalizable to youth outside this geographic community in West Dallas or contemporary youth

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Omar et al. (2008)	Multiple time series/Retrospective Chart Review/ University-based health center	1,386 teen mothers between the ages of 11 and 19 years who participated in the intervention (YPP) for at least 3 years	Interdisciplinary team of physicians, nurses, social worker, nutritionist, and psychologist, all of whom are available to provide care at each visit	Of the 1,386 teen mothers, only 11 (0.79%) had repeat pregnancies during the 3-year period. Older youth appeared more likely to have a repeat pregnancy, with 20- and 21-year-olds showing the highest percentage of repeating (45.5% [5/11] and 36.4% [4/11], respectively). Most participants chose injectable contraception as their contraceptive method following their first pregnancy.	Level II-3 Strengths: Follow-up time of ≥ 1 year Weaknesses: No comparison group External validity: May not be generalizable to youth who did not participate for at least 3 years (only included program participants who participated for at least 3 years)
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OB, obstetrics; TMCP, Teen Mother and Child Program; WIC, the Special Supplemental Nutrition Program for Women, Infants, and Children; YPP, Young Parent Program; WDYC, West Dallas Youth Clinic; MHFPP, Maternal Health and Family Planning Program.