

**Authors:**

Professor S. Rachel Skinner, Discipline of Child and Adolescent Health, Sydney University and Adolescent Physician, the Children's Hospital Westmead

Dr Jennifer Marino, Department of Obstetrics and Gynaecology, University of Melbourne and Royal Women's Hospital

Professor Martha Hickey, Department of Obstetrics and Gynaecology, University of Melbourne and Royal Women's Hospital

Associate Professor Deborah Bateson, Medical Director, Family Planning NSW

Dr Lucy Lewis, School of Nursing, Midwifery and Paramedicine, Curtin University and Department of Nursing and Midwifery Education and Research, King Edward Memorial Hospital

**THE SCOPE OF THIS DOCUMENT**

This document is a submission to the Australian Human Rights Commission National Children's Commissioner as evidence in support of her 2017 statutory report concerning the well-being and rights of young parents and their children. It addresses the following points, raised in the request for submissions:

- The types of early interventions likely to decrease the risk profile and risk trajectory of young parents, young parents-to-be and their children
- The types of early interventions which improve their capacity for safe and effective parenting
- The types of early interventions which increase their likelihood of becoming economically secure

## RECOMMENDATIONS

1. To reduce unintended pregnancies in adolescents:
  - All young people must have access to comprehensive sex education which promotes contraception
  - Education should be linked to improved access to cost-free contraception (in schools or clinical services/pharmacies linked to schools)
  - Use of long-acting reversible contraception (LARC) must be increased in vulnerable young people through education and training of GPs, nurses and midwives
2. Effective programs for adolescent parents and parents-to-be are multi-component and intersectorial (e.g. education, access to free contraception, antenatal care including outreach; welfare and social services to support at-risk adolescents and adolescent mothers to stay in school, or vocational training)
  - Nurse home visitation, and psycho-social and parenting support during the antenatal period through the first 2 years of life, are effective across a range of outcomes
  - Strategies should also address the related issues of underdeveloped parenting skills, substance use, and the potential for partner violence and child maltreatment in young families
3. Programs in urban, rural and remote settings require tailored approaches; programs must be inclusive of all cultural groups (Indigenous and non-Indigenous)
4. Routine national data collection of births to young parents with data linkage to longer term health and social outcomes
5. Health economic evaluation of exemplar intervention strategies in the Australian setting, taking a societal perspective to build the economic case for action

## **BACKGROUND**

### The scope of the problem

The principal outcome of the National Framework for Protecting Australia's Children [1] is that "Australia's children and young people are safe and well." Although becoming a young parent, particularly an adolescent parent, carries risks for parent and child, qualitative evidence suggests that young people can find the experience of parenting rewarding, when they are not stigmatised and when they have access to supportive resources [2-4]. It is important to understand the path adolescents take to parenthood. In a study of sexually active female adolescents in WA, those who became mothers at a young age did not intend to fall pregnant despite not using contraception, but considered the pregnancy as "a natural happening" and were happy with the outcome; others who fell pregnant and went on to abortion often described surprise and unhappiness about their pregnancy despite not using contraception; and then others who had never fallen pregnant considered pregnancy likely - and an unwanted event - if they didn't use contraception [2]. This suggests that adolescent mothers arrive at parenthood with distinct differences in their perceptions of pregnancy and parenthood at a young age, than other adolescents.

In 2015, 2.8% and 1.1% of births in Australia were to mothers and fathers, respectively, aged 14-19 years, and 13% and 9% to those aged 20-24 years [5]. Fertility rates in young women have fallen since the 1970s to historic lows of 11.9 births per thousand girls aged 15-19 and 48 per thousand women aged 20-24 in 2015 [5]. However, fertility rates in young women are not consistent across the population, with much higher rates amongst those living rurally and remotely, amongst those living in socioeconomically disadvantaged areas, and amongst young Indigenous women [6]. While 51% of Australian women report an unintended pregnancy during their lives, 63% of these were aged 24 years or younger at the time [7]. Nationally, the proportion of pregnancies which are unintended was recently estimated at 40% [8], and, as in the US [9] and UK [10], unintended pregnancy in Australia is likely to be substantially more common among adolescents and young adults. Although unintended pregnancies may not be unwanted, unintended pregnancy is associated with higher risk of adverse consequences for mother and child [11].

### Consequences of young parenting

There are many adverse outcomes associated with young parenting. In Australia as elsewhere, these include complications for the infant, such as preterm birth, low birthweight, stillbirth and neonatal death (death in the first 28 days of life); and for the mother, gestational anaemia, urinary tract infection and pregnancy-induced hypertension [12, 13]. Longer-term consequences include maternal

mental health problems and, for mother and child, educational underachievement and socioeconomic disadvantage, which can be life-long [14, 15] and intergenerational [16]. About a third of Australian adolescent mothers experience rapid repeat adolescent pregnancy (within two years of the first) [17]. Repeat pregnancy in adolescence further increases the risk of adversity for mother and child [18]. Young fathers, particularly teenage fathers, have been neglected in research and policy, and there is very little Australian data about them, including outcomes. A small body of US and UK data suggests young fatherhood may carry risks, including lower educational attainment [19] and depressive symptoms [20], but having a partner present and supportive of the pregnancy may improve maternal and child perinatal outcomes [21, 22]. In adolescent couples, higher paternal involvement prenatally (e.g. talking about plans for the baby, attending OB visits) is associated with lower parental stress and higher paternal care-giving during infancy [23], suggesting that early intervention to encourage paternal involvement may improve outcomes.

It is likely that the increased perinatal and longer-term adverse consequences for young parents and their children are confounded to a large extent by pre-existing risk factors such as poverty, low educational achievement, smoking, marginalisation (including racial discrimination, particularly for Indigenous adolescents), poor social support, and behavioural and mental health disorders. Even where these factors predate the pregnancy, the additional adversity of having a child as an adolescent is likely to accentuate their impact. In addition, there exists strong evidence that, independent of these factors, outcomes are poor for infants of very young mothers (<15 years or <2 years post-menarche) [24].

Strategies which delay childbearing by 2 or more years in young adolescents are likely to improve outcomes for their offspring. These strategies and others designed to support, engage and reduce adversity in adolescent parents and their children, will ensure they have the best chance of leading healthy, economically secure and productive lives. Therefore, to achieve better outcomes for adolescent families, policy must recommend strategies effective in: 1) preventing/ delaying adolescent pregnancies, and 2) directly improving outcomes for adolescent parents and their children.

#### **EXEMPLARY EVIDENCE BASED PROGRAMS**

To guide thinking about the issues around programs to delay pregnancy and improve outcomes, here are two successful examples of programs from the United States and United Kingdom.

EXEMPLAR 1: The Children's Aid Society-Carrera Program was a year-round after-school program with a comprehensive youth development program involving job clubs, academic skills,

family life and sexuality education, developing personal art skills, recreational activities, group/individual counselling, contraceptive education, and free medical care. It was evaluated in a socio-economically disadvantaged urban area of New York City over a 3-year period: 500 teenagers were randomly allocated to intervention or control (standard recreational program) and followed for 3 years [25]. Reported pregnancies in the intervention group were a third of those in the control.

EXEMPLAR 2: The 1999-2010 UK Teenage Pregnancy Strategy (TPS) [26] was a complex, inter-sectorial and multi-component intervention informed by available evidence from its inception and throughout its implementation and funding period. The TPS rested on four main pillars: a whole-of-government approach of “joined-up action” at national and local levels; improved prevention efforts through sex and relationships education and access to contraception; a national multimedia communications campaign; and coordinated support for young parents. The program reduced objectively measured teenage conceptions (births and abortions) and improved outcomes for young mothers over a sustained period of time, at the national level [27]. The reduction in teenage conceptions was 6.2% per £100 spent by the program, and the prevalence of young mothers participating in education, work or training doubled over the time of the program [27]. Interventions to support young parents were mainly conducted under two programs, Sure Start Plus and the Family Nurse Partnership [28]. The Family Nurse Partnership program was a preventative program of intensive, structured home visiting by specialist family nurses from before 28 weeks’ gestation to age two [29]. Sure Start Plus was funded as 35 local pilot programs for support in housing, health, parenting skills, education and childcare for pregnant women under 18 years and parents under 20; the keystone was a program coordinator who provided holistic one-on-one support for the young parents, and brought in tailored specialist support as needed, from the antenatal period onward [30].

### **PREVENTING/DELAYING ADOLESCENT BIRTHS**

There have been many decades of work with programs aiming to reduce adolescent pregnancies, and we now have a much more established understanding of which types of programs work. We searched the published literature for systematic reviews of interventions and report here results of interventions evaluated in randomised controlled trials (moderate evidence) and in several instances meta-analyses (strong evidence). Systematic reviews of interventions where impact on pregnancy incidence was captured [31] demonstrate that:

1. Strong evidence exists for the effectiveness of combined interventions (education with improved access to contraception). For example, school-based sex education linked with facilitated access to contraception (provided free of charge in school or via linkages to co-located services) reduces adolescent pregnancies [32, 33]. While education alone does not appear to impact pregnancy rates, there is strong evidence for the effectiveness of comprehensive risk reduction education strategies on other pregnancy risk behaviours. These are educational strategies which aim to simultaneously reduce a range of risk behaviours linked to sexual and reproductive health outcomes (e.g. initiation of sexual activity, number of partners, effective use of condoms and other contraceptives.) Comprehensive sexual risk reduction education may occur in school or the community [33] and aims to provide young people with the knowledge, attitudes, skills and confidence to make informed decisions about their sexual and reproductive health [34, 35]. Interventions designed to facilitate *only* access to contraception, for example, free access to condoms at school without sex education, have strong evidence that they lead to increased use of contraception (further evidence is needed for impact on pregnancies). Of note, abstinence-only educational strategies do not show evidence for impact on pregnancy rates or any other pregnancy-risk behaviour [33]. In addition, as they target only the non-sexually active sub-group of the adolescent population, they neglect an opportunity for whole-of-population education and risk reduction.
2. Contraception must be effective, which means it should be easy to access and used effectively. Increased condoms and hormonal contraceptive use both reduce pregnancies. Long-acting reversible contraceptives (LARC) are those that require administration less than once a month, and, in Australia, comprise the etonogestrel subdermal implant, levonorgestrel and copper intrauterine devices (IUDs) and the depot medroxyprogesterone acetate (DMPA) injection [36]. Implants and IUDs are the first-line LARC methods because they require a single act of administration for years of contraception. LARC use was significantly associated with reduction in the rapid repeat adolescent pregnancies in an Australian sample compared with other forms of contraception, or none [37]. Strategies demonstrated to reduce rapid repeat pregnancy include post-birth contraception counselling, including offering LARC to teenage mothers postpartum in hospital settings, combined with outreach and home visitation, which supports contraception continuation along with other positive benefits [37-39].

3. Moderate evidence exists that multi-component interventions, (see exemplars) can be effective but are generally more expensive than single-component interventions and hence all potential outcomes must be captured for economic evaluation.
4. Moderate evidence exists that youth-friendly clinical services reduce pregnancy and related sexual? risk behaviour [40]. Youth-friendly clinic qualities include confidentiality, accessibility, peer involvement, staff with specialised training, sufficient consultation time, cultural competency and integration in the community. Data from a cluster randomised controlled trial in Australia, where intervention GP practices undertook enhanced screening for youth health issues, demonstrated a reduction in self-reported pregnancies at 12 months [41].
5. Evidence on effectiveness of in-school clinics on pregnancy rates is lacking due to weak study design but data from the US points to improvements in some pregnancy-risk behaviours. It has been recommended that school clinics must provide contraception to be effective. [42, 43] Of note, some Australian states have school nurses but this is by no means universal and their scope is very limited in terms of clinical service provision.
6. Peer-led education strategies have not shown effectiveness in reducing pregnancy, although better studies are required [44].
7. Programs which improve parent-adolescent communication about sexual health may improve some pregnancy-risk behaviours, but there is not enough evidence to conclude effectiveness in reducing adolescent pregnancy [45].
8. The impact of state policies around consent to access contraception and sex education was examined in one systematic review in the United States. They were not found to be effective at reducing adolescent pregnancies, while demographic and political affiliations of the state were associated with adolescent pregnancy [46]. In Australia, the laws around these issues vary [47], and consistency would assist in facilitating initiatives to improve access to contraception for minors (e.g. through schools or pharmacies).

## IMPROVING OUTCOMES

1. Improvement of antenatal health. Programs to educate young pregnant women about healthy pregnancy, enhance social supports, and facilitate access to health care and services have been shown to lower the risk of low birthweight, but not to reduce preterm birth [48]. Clinics providing antenatal care to adolescents should also be youth-friendly clinical services, as discussed in point 4 of the previous section.

2. Improvement of parenting skills. Parenting interventions are short-term programs intended to improve functioning as parents, the relationship between parent and child, and child emotional and behavioural outcomes. Moderate evidence exists that such programs improve parent responsiveness to the child, infant responsiveness to parent, and parent-child interaction [49], suggesting that parenting programs may have value for these families in the longer term.
3. Home visiting. Programs where services are delivered to families in the home (home visiting programs) have been shown to improve a broad variety of maternal, child and family outcomes for vulnerable families, including those with adolescent parents [50]. The success of such programs must be carefully evaluated within their national context, however, as a recent trial of the Family Nurse Partnership program, highly successful in the United States, found no effect greater than usual care in the UK [51]. A likely reason for this discrepancy is that UK usual care includes home visiting [29].
4. Reduction of tobacco use. Smoking and exposure to second-hand smoke during pregnancy carry extensive risks for mother and child [52], and second-hand smoke exposure during infancy and childhood increases risks of Sudden Infant Death Syndrome, respiratory tract infection, ear infection and asthma [53]. Around 35% of adolescents smoke during pregnancy compared to 13% of pregnant adults [6, 54], with higher rates among pregnant Indigenous adolescents [13]. While smoking in pregnancy has declined among all mothers, the smallest declines have been in teenage, Indigenous, and rural/remote mothers [55]. Similarly, while smoking cessation rates in pregnancy have been rising, teenagers, Indigenous women, and remote residents are less likely to stop smoking during a pregnancy [56]. Evidence-based strategies for cessation in adults include counselling, pregnancy-specific self-help materials, referral to QuitLine, problem solving and facilitating social support [57], but data are lacking regarding efficacy in pregnant adolescents, including comparative efficacy. Multi-faceted interventions may be needed to address the complex relationships underlying motivation for smoking and use of other substances, such as partner substance use, mental health issues, and history of trauma and violence [52].
5. Reduction of use of alcohol and other drugs (AOD). Prenatal exposure to alcohol causes neurodevelopmental disorders and is associated with decreased size at birth, and infants chronically exposed to methamphetamine or opiates prenatally have characteristic withdrawal syndromes at birth [58]. Australian data are sparse regarding AOD use among young pregnant women and parents. Health care providers are recommended to screen all pregnant patients, irrespective of age, for AOD and tobacco use [52, 59]. Young pregnant



women and mothers who use AOD experience societal scrutiny with respect to their capacity to protect their children and are exposed to the risk of losing custody [59, 60], which must be considered in implementing screening and in planning interventions.

Adolescent mothers are more likely to use AOD and less likely to complete treatment than adolescent females who are not parents [61, 62], and young mothers do not appear to “mature out” of substance use [63, 64]. Less is known about AOD use among young fathers, but young men may increase alcohol use after becoming fathers [65]. Partner AOD use and smoking are highly correlated and young fathers’ substance use behaviour may influence young mothers’ [66]. HCP motivational interviewing techniques have been shown to reduce substance use in adolescents generally [67] and may be of use with young parents.

6. Addressing family violence. Physical and sexual maltreatment during childhood are associated with subsequent adolescent pregnancy [68]. One fifth of pregnant Australian adolescents experienced violence from a partner or family member before age 16 [69]. Partner violence is common in adolescence and young adulthood [70, 71], and young mothers may be at higher risk [72], possibly because of relationships between partner violence and reproductive coercion [73]. In addition to the obvious risk to maternal well-being, exposure to partner violence may have negative effects on infant development [74]. Women abused as children may be more vulnerable to intimate partner violence and at risk of neglecting or abusing (maltreating) their own children [75], and exposure to intimate partner violence is increasingly recognised to pose health, developmental and social risks for children [76]. Substance use, particularly alcohol use, increases the risk of intimate partner violence and child maltreatment [77]. Programs teaching parenting skills to young mothers or fathers may directly address the risk of child maltreatment, but do not generally consider the risk of partner violence. The Young Parenthood Program [78], a ten-week co-parenting counselling intervention for pregnant adolescents and the fathers of their children, decreased the risk of intimate partner violence at 3 months postpartum, but the authors noted that substance use, especially paternal, complicated program delivery and outcomes. There is a clear research need to develop a scalable multi-pronged intervention that addresses the joint problem of parenting skills, substance use, and the potential for partner violence and child maltreatment in young families.

#### Economic evaluations of intervention strategies

There are no published economic evaluations of pregnancy-risk reduction education using Australian data. Economic evaluations from US studies indicate that comprehensive risk reduction education

programs are generally cost-effective when long term impacts of adolescent childbirth are considered on health and productivity [33]. When other outcomes are taken into account, such as health care costs related to STI/HIV prevention, educational retention, and pregnancy, then interventions are found to be cost-effective to the point of cost-saving. With education programs, there are a wide range of intervention types, target samples, and duration which impacts on costs. However, even the more targeted, costly interventions were found to be cost-saving, where this analysis was done [33]. Other work across a range of different countries (Europe, Africa, South East Asia) has also confirmed that comprehensive sexual health education programs are cost effective and potentially cost-saving. They were found to be more cost-effective when delivered through schools compared with community and when linked with a youth-friendly clinical service for contraception provision [79, 80]. More evidence is needed on the full impact of such programs from a societal perspective, including non-health outcomes such as improved employment potential, and higher future earnings of program participants. Finally, for school-based programs, the impact on school resources where the facilities, staff, or time from the school systems may be used for these programs, must also be costed. With respect to postpartum LARC, US trials have shown that postpartum implant [81] and IUD placement [82] in adolescents are cost-effective, with higher costs to the state from repeat pregnancy than from LARC placement. Australian data are being collected in the Australian Contraceptive Choice Project (ACCORD) trial [83], which will compare GP practices trained with online “LARC first” training and rapid referral pathways versus usual care, including health service use costs and disability-adjusted life years.

1. Commonwealth of Australia, *Protecting Children Is Everyone's Business: National Framework for Protecting Australia's Children 2009-2020*. 2009, Commonwealth of Australia: Canberra.
2. Smith, J.L., S.R. Skinner, and J. Fenwick, *Perceptions of teen motherhood in Australian adolescent females: Life-line or lifederailment*. *Women and Birth*, 2012. **25**(4): p. 181-186.
3. Anwar, E. and D. Stanistreet, *'It has not ruined my life; it has made my life better': a qualitative investigation of the experiences and future aspirations of young mothers from the North West of England*. *Journal of Public Health*, 2015. **37**(2): p. 269-276.
4. Kiselica, M.S. and A.M. Kiselica, *The complicated worlds of adolescent fathers: Implications for clinical practice, public policy, and research*. *Psychology of Men & Masculinity*, 2014. **15**(3): p. 260-274.
5. Australian Bureau of Statistics. *Births, Australia*. Cat no 3301.0 2016 8/11/2016 26/5/2017]; Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3301.0>.
6. Australian Institute of Health and Welfare, *A picture of Australia's children 2012*. 2012: Canberra.
7. Marie Stopes International, *Real choices: Women, contraception and unplanned pregnancy 2008*, Melbourne: Marie Stopes International.
8. Rowe, H., et al., *Prevalence and distribution of unintended pregnancy: the Understanding Fertility Management in Australia National Survey*. *Australian and New Zealand Journal of Public Health*, 2016. **40**(2): p. 104-109.
9. Finer, L.B. and M.R. Zolna, *Declines in unintended pregnancy in the United States, 2008-2011*. *New England Journal of Medicine*, 2016. **374**(9): p. 843-852.
10. Wellings, K., et al., *The prevalence of unplanned pregnancy and associated factors in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)*. *Lancet*, 2013. **382**(9907): p. 1807-1816.
11. Gipson, J.D., M.A. Koenig, and M.J. Hindin, *The effects of unintended pregnancy on infant, child, and parental health: A review of the literature*. *Studies in Family Planning*, 2008. **39**(1): p. 18-38.
12. Ganchimeg, T., et al., *Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study*. *Bjog-an International Journal of Obstetrics and Gynaecology*, 2014. **121**: p. 40-48.
13. Lewis, L., et al., *How do pregnancy outcomes differ in teenage mothers? A Western Australian study*. *Medical Journal of Australia*, 2009. **190**: p. 537-541.
14. Boden, J.M., D.M. Fergusson, and L.J. Horwood, *Early motherhood and subsequent life outcomes*. *Journal of Child Psychology and Psychiatry*, 2008. **49**(2): p. 151-160.
15. Gibb, S., et al., *Early motherhood and long-term economic outcomes: Findings from a 30-year longitudinal study*. *Journal of Research on Adolescence* 2014. **25**(1): p. 163-172.
16. Shaw, M., D.A. Lawlor, and J.M. Najman, *Teenage children of teenage mothers: Psychological, behavioural and health outcomes from an Australian prospective longitudinal study*. *Social Science & Medicine*, 2006. **62**(10): p. 2526-2539.
17. Lewis, L.N., et al., *Predictors of sexual intercourse and rapid-repeat pregnancy among teenage mothers: an Australian prospective longitudinal study*. *Medical Journal of Australia*, 2010. **193**(6): p. 338-342.
18. Damle, L.F., et al., *Early initiation of postpartum contraception: Does it decrease rapid repeat pregnancy in adolescents?* *Journal of Pediatric and Adolescent Gynecology*, 2015. **28**(1): p. 57-62.
19. Fletcher, J.M. and B.L. Wolfe, *The effects of teenage fatherhood on young adult outcomes*. *Economic Inquiry*, 2012. **50**(1): p. 182-201.
20. Lee, Y., J. Fagan, and W.Y. Chen, *Do late adolescent fathers have more depressive symptoms than older fathers?* *Journal of Youth and Adolescence*, 2012. **41**(10): p. 1366-1381.
21. Alio, A.P., et al., *Teenage pregnancy and the influence of paternal involvement on fetal outcomes*. *Journal of Pediatric and Adolescent Gynecology*, 2011. **24**(6): p. 404-409.

22. Shah, M.K., R.E. Gee, and K.P. Theall, *Partner support and impact on birth outcomes among teen pregnancies in the United States*. Journal of Pediatric and Adolescent Gynecology, 2014. **27**(1): p. 14-19.
23. Fagan, J., E. Bernd, and V. Whiteman, *Adolescent fathers' parenting stress, social support, and involvement with infants*. Journal of Research on Adolescence, 2007. **17**(1): p. 1-22.
24. Gibbs, C.M., et al., *The impact of early age at first childbirth on maternal and infant health*. Paediatric and Perinatal Epidemiology, 2012. **26**: p. 259-284.
25. Philliber, S., et al., *Preventing pregnancy and improving health care access among teenagers: an evaluation of the children's aid society-carrera program*. Perspect Sex Reprod Health, 2002. **34**(5): p. 244-51.
26. Social Exclusion Unit, *Teenage pregnancy*. 1999, Stationery Office: London.
27. Wellings, K., et al., *Changes in conceptions in women younger than 18 years and the circumstances of young mothers in England in 2000-12: an observational study*. Lancet, 2016. **388**(10044): p. 586-595.
28. Hadley, A. *Scottish Parliament Teenage Pregnancy Inquiry: Second written submission*. 2013 [cited 2017 1/6]; Available from: [http://www.parliament.scot/S4\\_HealthandSportCommittee/Alison\\_Hadley\\_-\\_Teenage\\_Pregnancy\\_Knowledge\\_Exchange.pdf](http://www.parliament.scot/S4_HealthandSportCommittee/Alison_Hadley_-_Teenage_Pregnancy_Knowledge_Exchange.pdf).
29. Olds, D., *Building evidence to improve maternal and child health*. Lancet, 2016. **387**(10014): p. 105-107.
30. Wiggins, M., et al., *Sure Start Plus National Evaluation: Final Report*. 2005.
31. Oringanje, C., et al., *Interventions for preventing unintended pregnancies among adolescents*. Cochrane Database of Systematic Reviews, 2016. **2**: p. CD005215.
32. Lopez, L.M., et al., *School-based interventions for improving contraceptive use in adolescents*. Cochrane Database of Systematic Reviews, 2016(6).
33. Chin, H.B., et al., *The effectiveness of group-based comprehensive risk-reduction and abstinence education interventions to prevent or reduce the risk of adolescent pregnancy, human immunodeficiency virus, and sexually transmitted infections two systematic reviews for the guide to community preventive services*. American Journal of Preventive Medicine, 2012. **42**(3): p. 272-294.
34. UNESCO, *International technical guidance on sexuality education*. 2009, Paris: United Nations Educational, Scientific and Cultural Organisation.
35. UNFPA, *Operational guidance for comprehensive sexuality education*. 2014, New York: United Nations Population Fund.
36. Sexual Health and Family Planning Australia, *Time for a change: increasing the use of long-acting reversible contraceptive methods in Australia*. 2013.
37. Lewis, L., et al., *Implanon as a contraceptive choice for teenage mothers: a comparison of contraceptive choices, acceptability and repeat pregnancy*. Contraception, 2010. **81**: p. 421-426.
38. Lopez, L.M., et al., *Education for contraceptive use by women after childbirth*. Cochrane Database of Systematic Reviews, 2012(8).
39. Whitaker, R., et al., *Intervention Now to Eliminate Repeat Unintended Pregnancy in Teenagers (INTERUPT): a systematic review of intervention effectiveness and cost-effectiveness, and qualitative and realist synthesis of implementation factors and user engagement*. Health Technology Assessment, 2016. **20**(16): p. 1-+.
40. Brittain, A.W., et al., *Youth-friendly family planning services for young people: a systematic review*. American Journal of Preventive Medicine, 2015. **49**(2): p. S73-S84.
41. Sancu, L., et al., *Responding to young people's health risks in primary care: A cluster randomised trial of training clinicians in screening and motivational interviewing*. PLOS ONE, 2015. **10**(9): p. e0137581.

42. Blank, L., et al., *Systematic review and narrative synthesis of the effectiveness of contraceptive service interventions for young people, delivered in educational settings*. Journal of Pediatric and Adolescent Gynecology, 2010. **23**(6): p. 341-351.
43. Mason-Jones, A.J., et al., *A systematic review of the role of school-based healthcare in adolescent sexual, reproductive, and mental health*. Syst Rev, 2012. **1**: p. 49.
44. Tolli, M.V., *Effectiveness of peer education interventions for HIV prevention, adolescent pregnancy prevention and sexual health promotion for young people: a systematic review of European studies*. Health Education Research, 2012. **27**(5): p. 904-913.
45. Gavin, L.E., et al., *Programs to strengthen parent-adolescent communication about reproductive health: A systematic review*. Am J Prev Med, 2015. **49**(2 Suppl 1): p. S65-72.
46. Beltz, M.A., et al., *State policy and teen childbearing: A review of research studies*. Journal of Adolescent Health, 2015. **56**(2): p. 130-138.
47. Bird, S., *Consent to medical treatment: the mature minor*. Australian Family Physician, 2011. **40**(3): p. 159-160.
48. Sukhato, K., et al., *Efficacy of additional psychosocial intervention in reducing low birth weight and preterm birth in teenage pregnancy: A systematic review and meta-analysis*. Journal of Adolescence, 2015. **44**: p. 106-116.
49. Barlow, J., et al., *Individual and group based parenting programmes for improving psychosocial outcomes for teenage parents and their children*. Cochrane Database of Systematic Reviews, 2011(3).
50. Avellar, S., et al., *Home visiting evidence of effectiveness review: Executive summary*. 2012, Office of Planning, Research and Evaluation, Administration for Children and Families, US Department of Health and Human Services: Washington, D.C.
51. Robling, M., et al., *Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial*. Lancet, 2016. **387**(10014): p. 146-155.
52. Greaves, L., et al., *Expecting to quit: A best-practices review of smoking cessation interventions for pregnant and post-partum women, 2nd ed*. 2011, British Columbia Centre of Excellence for Women's Health Vancouver, Canada.
53. Zhou, S., et al., *Physical, behavioral, and cognitive effects of prenatal tobacco and postnatal secondhand smoke exposure*. Current Problems in Pediatric and Adolescent Health Care, 2014. **44**(8): p. 219-241.
54. Australian Institute of Health and Welfare, *Australia's mothers and babies 2013—in brief*, in *Perinatal Statistics Series*. 2015: Canberra.
55. Mohsin, M., A.E. Bauman, and R. Forero, *Socioeconomic correlates and trends in smoking in pregnancy in New South Wales, Australia*. Journal of Epidemiology and Community Health, 2011. **65**(8): p. 727-732.
56. Passmore, E., et al., *Demographic factors associated with smoking cessation during pregnancy in New South Wales, Australia, 2000-2011*. BMC Public Health, 2015. **15**.
57. Royal Australian College of General Practitioners, *Supporting smoking cessation: a guide for health professionals*. 2011, Melbourne: RACGP.
58. Behnke, M. and V.C. Smith, *Prenatal substance abuse: short- and long-term effects on the exposed fetus*. Pediatrics, 2013. **131**(3): p. e1009-24.
59. Taplin, S., G. Richmond, and M. MacArthur, *Identifying alcohol and other drug use during pregnancy: outcomes for women, their partners and their children*. 2014, Australian National Council on Drugs: Canberra.
60. Olsen, A., *Punishing parents: Child removal in the context of drug use*. Drug and Alcohol Review, 2015. **34**(1): p. 27-30.
61. De Genna, N.M., M.D. Cornelius, and J.E. Donovan, *Risk factors for young adult substance use among women who were teenage mothers*. Addictive behaviors, 2009. **34**(5): p. 463-470.



62. Savage, R.J., et al., *The adverse effects of motherhood on substance use treatment program outcomes among adolescent women*. Journal of Addiction Medicine, 2015. **9**(6): p. 478-484.
63. Gillmore, M.R., et al., *Women who gave birth as unmarried adolescents: Trends in substance use from adolescence to adulthood*. Journal of Adolescent Health, 2006. **39**(2): p. 237-243.
64. De Genna, N.M., et al., *Maternal age and trajectories of cannabis use*. Drug and Alcohol Dependence, 2015. **156**: p. 199-206.
65. Little, M., et al., *The impact of parenthood on alcohol consumption trajectories: Variations as a function of timing of parenthood, familial alcoholism, and gender*. Development and Psychopathology, 2009. **21**(2): p. 661-682.
66. Desrosiers, A., et al., *Romantic partner influences on prenatal and postnatal substance use in young couples*. Journal of Public Health, 2016. **38**(2): p. 300-307.
67. Barnett, E., et al., *Motivational Interviewing for adolescent substance use: A review of the literature*. Addictive Behaviors, 2012. **37**(12): p. 1325-1334.
68. Madigan, S., et al., *Association between abuse history and adolescent pregnancy: a meta-analysis*. Journal of Adolescent Health, 2014. **55**(2): p. 151-159.
69. Quinlivan, J.A., R.W. Petersen, and L.C. Gurrin, *Adolescent pregnancy: psychopathology missed*. Australian and New Zealand Journal of Psychiatry, 1999. **33**(6): p. 864-868.
70. Johnson, W.L., et al., *Relationship context and intimate partner violence from adolescence to young adulthood*. Journal of Adolescent Health, 2015. **57**(6): p. 631-636.
71. Coker, A.L., et al., *Dating violence victimization and perpetration rates among high school students*. Violence Against Women, 2014. **20**(10): p. 1220-1238.
72. Wood, M. and C. Barter, *Hopes and fears: Teenage mothers' experiences of intimate partner violence*. Children & Society, 2015. **29**(6): p. 558-568.
73. Miller, E. and H.L. McCauley, *Adolescent relationship abuse and reproductive and sexual coercion among teens*. Current Opinion in Obstetrics & Gynecology, 2013. **25**(5): p. 364-369.
74. Madkour, A.S., Y. Xie, and E.W. Harville, *Pre-pregnancy dating violence and birth outcomes among adolescent mothers in a national sample*. Journal of Interpersonal Violence, 2014. **29**(10): p. 1894-1913.
75. Bartlett, J.D., et al., *Intergenerational transmission of child abuse and neglect: Do maltreatment type, perpetrator, and substantiation status matter?* Child Abuse & Neglect, 2017. **63**: p. 84-94.
76. McTavish, J.R., et al., *Children's exposure to intimate partner violence: an overview*. International Review of Psychiatry, 2016. **28**(5): p. 504-518.
77. Choenni, V., A. Hammink, and D. van de Mheen, *Association Between Substance Use and the Perpetration of Family Violence in Industrialized Countries*. Trauma, Violence, & Abuse, 2015. **18**(1): p. 37-50.
78. Florsheim, P., et al., *The Young Parenthood Program: Preventing intimate partner violence between adolescent mothers and young fathers*. Journal of Couple and Relationship Therapy, 2011. **10**: p. 117-134.
79. UNESCO, *School-based sexuality education programmes: A cost and cost-effectiveness analysis in six countries*. 2011, United Nations Educational, Scientific and Cultural Organization: Paris.
80. Kivela, J., et al., *Impact and cost-effectiveness analysis of the national school-based sexuality education programme in Estonia*. Sex Education-Sexuality Society and Learning, 2014. **14**(1): p. 1-13.
81. Han, L., et al., *Preventing repeat pregnancy in adolescents: is immediate postpartum insertion of the contraceptive implant cost effective?* American Journal of Obstetrics and Gynecology, 2014. **211**(1).
82. Rodriguez, M.I., et al., *Cost benefit analysis of state- and hospital-funded postpartum intrauterine contraception at a university hospital for recent immigrants to the United States*. Contraception, 2010. **81**(4): p. 304-308.

83. Mazza, D., et al., *Increasing the uptake of long-acting reversible contraception in general practice: the Australian Contraceptive ChOice pRoject (ACCORd) cluster randomised controlled trial protocol*. *BMJ Open*, 2016. **6**(10): p. e012491.