**Abstract**

Adolescents in their teenage years, have changing health needs and health services should consider the most appropriate methods by which to meet these needs (RCPCH, 2003). This paper presents a mini-review of evidence for [re-] designing adolescent-specific national health, community based services in the United Kingdom. It will be relevant for senior National Health Service managers considering [re-] design of services.

Available evidence from EMBASE, BNI, PSYCHinfo, MEDLINE and Google Scholar was systematically searched for published and unpublished research papers, systematic reviews and meta-analyses. Adapted 'GRADE' criteria were used to appraise the evidence.

Of 70 papers reviewed, 22 met the inclusion criteria. There were five main service designs found within the literature; hospital-based, school-linked or school-based, private, voluntary, independent sector-based, combination & integrative and 'other' methods which did not fit into the four other categories.

There is little evidence available which appraises the costs-benefits of the five models of adolescent health services presented in the literature. Initial findings possibly suggest that adolescent-specific health services may be most appropriately embedded within current service provision and not as 'stand-alone' services. This paper presents recommendations for further research in this area and possible considerations for service re-design in light of current available evidence.

Keywords: adolescent health services; young people; service design; health service delivery; community services

## 1. Introduction

### *1.1 Adolescent and young persons' health*

Adolescents of the age of 13-19 have greater and unique health needs, experiencing a range of challenges as part of transitioning from child to adulthood (Royal College of Paediatrics and Child Health; RCPCH, 2003; Kurtz & Thorne, 2000; Hagell, 2012). An estimated 300 young people 15-24 years of age die every day in the European Union; added to this are increasing numbers experiencing mental health difficulties and health problems which impact on emotional well-being (Department of Health, 2011). The health of young people and adolescents is often given low priority by policy makers, and it is known that serious diseases in adulthood have roots in adolescence, which may account for premature death in later life (WHO, 2012; Chief Medical Officer, 2007).

The Kennedy Review (2010) argues that one of the main barriers for young people is that their health needs are not recognised as distinctly different to those of children and adults. During their adolescent years individuals are more likely to be exposed to high risk behaviours, peer and societal pressures: WHO (2012), Hagell *et al*. (2012), RCPCH (2003) and Lawrence *et al.* (2009) argue that more attention needs to be paid to developing adolescent-friendly health services.

*1.2 Adolescent Services in the UK*

Healthcare providers are increasingly required to consider the need for adolescent services which address physical, psychological and social needs in an 'integrated' and multi-disciplinary way (Royal College of General Practitioners *et al*, 2013).

Austerberry *et al*. (2008) outlines three distinct methods of service delivery for teen health; enhancing or developing teenage-specific, holistic services; creating or enhancing health provision in non-health settings and community settings; and enhancing mainstream provision to reflect adolescents. RCGP *et al* (2013) identify that the UK has high rates of sexually transmitted disease, teenage pregnancy, obesity and mental health related disorders and it is known that young people have high rates of access to their General Practitioner (Patton *et al*, 2007). However, if adolescent health services are to be accessible, efficient, productive and cost effective then consideration needs to be given to the way in which they are delivered in both the primary and community care settings.

*1.3 Community Care*

For the purpose of this paper the context of community services is considered as separately delivered, yet complementary to that of Primary Care and General Practice. The NHS Confederation (2009) identified three levels of community-based services, which included:

1. Core [or 'universal'] services e.g. health visiting, district nursing, school nursing
2. Specialist services e.g. Child and Adolescent Mental Health Services [CAMHS]
3. Services provided with other agencies e.g. children's centres

RCGP *et al* (2013) further suggest that community and primary care services will increasingly be provided by a combination or 'integration' of 'specialists' and 'generalists'; specialist nurses in a particular disorder, Child and Adolescent Mental Health Services (CAMHS) compared to services such as community nursing teams or assistant practitioners within the 'core' community provision.

There are a range of possible service designs for the delivery of adolescent health; including years 11-19 and up to 25 for sexual health services. This paper considers the models of service delivery for community-based adolescent services in the National Health Service (NHS) in England.

*1.4 Aims*

"Are adolescent-specific services more efficient and effective in achieving health outcomes and service user satisfaction than integrated or combined provision in community health services?"

This paper aims to review available evidence on models of service delivery specifically targeting adolescents/young people and briefly summarise available evidence from systematic reviews and available research. As a result, recommendations for potential models of adolescent healthcare delivery will be made.

## 2.0 Method

A scoping search of academic databases linked to health and healthcare from 1988 onwards (table.1) including EMBASE, BNI, PSYCHINFO, MEDLINE and Google Scholar was conducted. Google as a search engine was used with relevant search terms to identify current projects or practices internationally. The search is not expected to be exhaustive of all potential service model variations, but intends to provide research evidence, indication of those in existence and those which are [or are not] effective.

*Insert table.1*

Publications which consolidated available evidence in a systematic way, all study designs and evidence syntheses [reviews with explicit search methodology] internationally were included but those not reported in English were excluded. Also excluded were papers which constitute the grade of 4 on the National Institute of Health and Clinical Excellence [NICE] guideline development scale (2005) *"No study of acceptable quality,* ***inconsistent findings (on balance providing no useful evidence) or no relevant research available****".* Studies included in evidence synthesis or systematic reviews were not included independently in this review but the systematic review or evidence synthesis was included as evidence. Inclusion and exclusion criteria can be seen in table 2. The quality of included papers was appraised using an adapted GRADE score (NICE, 2005) for simple reference for NHS managers and

staff, but also to enable the inclusion of a broader range of evidence which it would be useful to present.

*Insert table 2*

## 3.0 Results

Searches reviewed the title and abstract against inclusion criteria, and obtained 70 pieces of evidence for full text review. Of these 70, 22 were eligible for inclusion. Those not included were either non-research, not adolescent specific, highly specialist services e.g. for refugees, or general literature reviews with no apparent methodology or design. The majority of the available literature was child and adolescent focused up to the age of 19 years. Table 3 describes each paper in further detail along with the quality grading.

*Insert table.3*

Four studies provided an overview of good practices [or available evidence] and/or feedback from adolescents which informed models of care but did not have any specific focus (Herefordshire LINk, 2012; Oppong-Odiseng & Heycock, 1997; Lawrence *et al*., 2009; McIntyre *et al.,* 2002).

Research publications were focused on one model, but there were 6 evidence syntheses (McIntyre *et al*., 2002; Strunk, 2008; Owen *et al.*, 2010; Tylee *et al*., 2007; Lawrence *et al*., 2009; Baltag & Mathieson, 2010).

### *3.1 Overview of evidence*

The quality of the papers included was for the most part low to moderate (table 3).The systematic review/evidence syntheses included by Advocates for Youth (2008), Owen *et al.* (2010), Baltag & Mathieson (2010) and Lawrence *et al*. (2009) are considered to be of moderate-high quality and therefore most appropriate for making recommendations for healthcare managers.

*Hospital based services*

There was limited evidence to evaluate inpatient wards. Many of the papers found illustrated a lack of evidence for adolescent-specific inpatient wards but that adolescent-specific ‘areas’ within adult or children’s wards with specifically trained staff or a co-ordinator were equally appropriate, efficient and effective. Viner (2007) found that 15-17 year olds were more likely to report excellent overall care than when on an adult-only ward, along with improved ratings associated with security, being treated with respect, communication and involvement in their

own care. Recommendations included the potential for development of adolescent-specific wards in larger and acute hospitals, but less so for other settings.

*School Linked or School Based Services*

School-linked services are defined as a health and social care service which is based within the community in partnership with educational institutions. They typically serve several schools and colleges. Those which are school-linked also have associated benefits of providing of services to individuals up to the age of 25 and young people who may not be in full time education, such as 16-19 year olds undertaking apprenticeships or those in further education institutions. A multitude of services can be provided using a Multi-disciplinary Team (MDT), and these included school nursing, sexual health services, counselling and mental health outpatient clinics. Employing this model may enable more collaborative and integrative care.

School-based services are usually integrated into a school or college and work collaboratively with health, social care and education to provide walk-in services, clinics, preventative healthcare and education [partnered with personal and social health education provided by the national curriculum].

Denny *et al*. (2012) reported on a multi-level observational study of school-based health clinics which examined reproductive health outcomes for adolescent students. This showed that an integrated MDT approach to school based clinics significantly reduced the incidence of teenage pregnancies [p=0.03; AOR=0.94; CI (0.89, 0.99)] suggesting that such models could improve health outcomes relating to preventative care. An integrated MDT approach meant that professionals such as school nurses, counsellors and mental health could refer into each service efficiently. Furthermore, education staff were able to work more collaboratively with healthcare services.

Jepson *et al.* (1998) discussed mental health care within a school-based health service and found that the need for referrals outside of this service reduced; this helped to increase the likelihood that young people would be seen in the right place, at the right time, in a familiar and confidential environment. This also reduced the need for parents to take time away from work for regular appointments, also reducing traditional barriers to such healthcare. It was also suggested that such a service would enable targeted provision for those in ‘high risk’ or vulnerable groups.

Young people have expressed that school-based health centres are important and valued when compared to non-health centre based provision [p<0.001] (Santelli et al., 1996). This

survey-based study also found that 86% of young people rated the quality of a school-based health service as satisfactory-excellent, and treatment based services were more highly valued than preventative. This project did highlight possible inconsistencies in young people's confidence in the privacy and confidentiality of school-based clinics, which suggests that clear procedures and marketing strategy are essential.

Chase *et al*. (2006) implemented a nurse and physician, MDT, school-based health service and evaluated this through qualitative interviews with young people accessing the service, along with staff feedback. Young people expressed confidence in and a need for such a service. It also highlighted the potential for health to link with education within the personal, social and health education curriculum for preventative services and health promotion.

Barkan *et al*. (2003) used a mixed methods design to evaluate a multi-disciplinary school-based health clinic. This found that 36.7% of visits were related to mental health problems, which enhanced the opportunity for preventative health service provision for those from 'high risk' and lower socio-economic groups. This did, however, increase the number of referrals to other services. The school-based clinic did reduce absenteeism within the school and improve academic performance over time; in addition there was a significant decrease in 'risk taking' behaviours [e.g. unprotected sexual activity, drinking alcohol, smoking drugs or tobacco]. Those without access to a school- based health service reported that in the past year they had needed healthcare [particularly relating to stress and depression] but were unable to access it.

The review by Advocates for Youth (2008) identified several experimental and quasi-experimental studies on school-based health services. Significant benefits to health outcomes were:

- Improved access to services for those from 'at risk' and lower socio-economic groups
- Improved knowledge of 'healthy' behaviours
- Reduced absenteeism
- Improved academic performance
- Reduced 'risk taking' behaviours
- Reduction in teenage pregnancy and STI rates
- Improved ability to deal with stress/depression

Multi-disciplinary school-linked health services were shown to have similar benefits to those which were school-based (Fothergill & Ballard, 1996; Halevy *et al*., 1995). However, additional benefits were the accessibility for those up to the age of 25 years and homeless and vulnerable groups, but also the ability to access a broader range of services in one

place and serve several educational and social institutions. Fothergill and Ballard (1996) and Halevy *et al*. (1995) both found that follow-ups were more difficult in school-linked clinics. A Health Technology Assessment funded systematic review (Owen *et al*., 2010) reviewed the literature available for school- linked health services. The findings suggest that broad based integrated MDT health services in partnership with education and social care were likely to be the most effective method of adolescent health service provision.

*Private, voluntary, independent sector- based [PVI]*

PVI-based services consisted of healthcare provision in a community centre, sure-start centre or centre attached to a healthcare service, such as a GPs practice.

Wilf-Miron *et al*. (2002) evaluated a multi-disciplinary adolescent 'walk in' centre for individuals 12-18 years old. School nurses, counsellors and psychiatry teams based their services within a PVI-based centre. This approach showed significant potential to address the current unmet needs of adolescents, particularly those relating to preventative and mental health.

Austerberry *et al*. (2008) evaluated a range of community-orientated service models including teenage specific, holistic health services, other community based provision and enhancing current NHS mainstream provision for adolescents. One stop shops [drop-in clinics where several services are accessible], walk-in clinics and mobile centres [e.g. minibuses] were shown to improve accessibility for those who traditionally may not engage with services or find it hard to access services. It is especially useful in rural areas or in targeting specific neighbourhoods or communities. However, the lack of facilities e.g. toilets can prove to be challenging and to ensure confidentiality and privacy a minibus was found to be too small. Where the mobile unit targeted specific neighbourhoods some young people found that the lack of anonymity prevented them accessing the service without being identified by members of the community. In this instance, enhancement of mainstream health services was found to be more appropriate as a method of delivery.

Similar delivery of health services in non-NHS settings such as educational, social [e.g. youth offending centre] or community centres was found to enable access to those who traditionally do not access healthcare services, particularly young men. Furthermore, these models were found to be useful in targeting many people at one time and deemed to be an efficient use of resource. This model of provision has also been shown to improve communication and functions between professionals who work for health, social care and voluntary sectors, employing an inter-agency approach. It often takes time for young people to begin to access a service and requires them to gain confidence in its ability to provide

privacy and quality. Also, location of suitable premises and staff to support clinics was found to be challenging and required dedicated time and effective and inter-agency planning. Overall, drop-in services were found to be one of the key elements of high quality and successful service provision and fitted well with the *You're Welcome* quality criteria (Department of Health, 2011).

Advocates for Youth (2008) also reviewed several models of service design for community-based projects. These were experimental and quasi-experimental projects and the following benefits were summarised:

- Reduced risk-taking behaviours
- Improved knowledge of health behaviours
- Reduced teenage pregnancy rate
- Reduced incidence of truancy
- Increased contraception compliance.

Similar benefits were also highlighted for clinic-based services, which suggest limited differences between outreach and clinic-based models for the most part. Furthermore, a clear issue with any community or school-based model is that it requires private rooms and staff resource, delivered at the right time to meet the needs of targeted populations. However, there is no evidence which indicates the level of resource required nor the costs involved in achieving or enhancing current care.

*Combination & Integrated Services*

Two included publications examined models which enhanced mainstream service provision to include adolescent health (Austerberry *et al*., 2008; Goicolea *et al*., 2012). Both were focused on a collaborative, multi-disciplinary model with specialist staff leading work with adolescents and young people; working collaboratively with each other, with services such as school nursing, paediatrics and psychiatric teams. Specialist staff were considered 'specialist' in the context of adolescent health. They were highly experienced and trained to work specifically with young people and were found to be of great importance for enhancing mainstream services. This model was found to be reliable in providing long-term health services and continuity, but did require commitment to collaboration with partners in health and social care.

Brodie *et al*. (2009) outlined an adolescent-specific Multi-agency service model [AMASS] [based on ICON]. This involved NHS CAMHS, youth offending services and social care working closely with one another. Whilst building relationships and trust between partners

took time, this model showed significant potential cost reductions [£1.1m approximately]. The qualitative and quantitative data obtained within the evaluation showed that the service was deemed to be of high quality, and valued by parents and young people. The model reduced the use of care services; without the service 86% of AMASS children would have entered care along with requiring support from a wide range of other agencies. The service also enabled professionals to identify [at an early stage] young people who may have further problems, and to begin to resolve them from the outset.

*3.2 Other Literature*

Other literature obtained focused on the development of adolescent health services in general. Herefordshire LINk (2012), McIntyre *et al.* (2002), Oppong-Odiseng and Heycock (1997) Tylee *et al*. (2007) and Lawrence *et al*. (2009) all suggest that 1) young people want specific services 2) the services can be provided in a range of contexts but development should involve the population to be served to determine this 3) resources should be dedicated to developing these services 4) services should be designed around confidentiality and privacy, accessibility, appropriateness and equity.

Finally, Baltag & Mathieson (2010) outlined a range of recommendations regarding adolescent specific services from across Europe:

- Implementation of adolescent specific services is more effective if 'country-led'
- Youth-friendly services should adopt self-assessment practices and encourage young people to participate in these
- Integrated, multi-disciplinary, multi-agency models which are not purely biomedical
- Explore and utilise information technology to enhance service provision
- Primary, secondary and specialist care should be integrated and collaborative and equally accessible
- EuTEACH offers a mechanism for e-learning for professionals working with adolescents: training is of importance when working with young people and beneficial to the promotion of positive health related behaviours
- Training and education of professionals working with young people through e-learning or otherwise should be supported on a large scale
- Work with educational establishments to provide preventative, reproductive and sexual health promotion
- Real-time chat services are shown to be positive

- Young people should be involved in the design, implementation and evaluation of services
- Non-formal education and peer to peer learning is advocated especially within education settings
- Geographically accessible services are essential
- Anonymity, privacy and confidentiality is paramount
- Health and social care organisations should link with higher education research facilities to support and promote research into adolescent services and interventions

## 4.0 Discussion

The number of publications relating to school-based or school-linked services was significantly more than those for other models of delivery and many of these were focused on reproductive, sexual or preventative health. None of those found were of particularly high quality evidence and therefore, this limits the ability to make formal recommendations. However, service enhancement should consider: improving productivity within existing services, delivering the right care in the right setting, developing new ways of delivering care, allocating spending more rationally (Monitor, 2013).

### *4.1 Spending more rationally*

Evidence of cost effectiveness and associated health benefits of one model against another is limited. RCGP *et al* (2013) highlighted the potential cost savings associated with integrated provision across primary care, core and specialist services however there was little evidence available for adolescent specific models of provision. Brodie *et al*. (2009) did examine potential cost savings but this model was focused on highly specialised services and not those from the 'core' and 'services provided by other agencies' in the community care context provided by NHS Confederation (2009).

Given the current focus on cost savings in the NHS, decisions about services, provision and re-design are not likely to be undertaken without consideration of cost, quality of care and resource benefit. And certainly, much of current service re-design has cost improvement programmes (CIPs) as one of its primary drivers. Conversely, CIPs are unlikely to be met without changes to current provision. Further research into the potential cost savings and benefits across all levels of community care in the medium and long term is therefore recommended.

*4.2 Enhancing productivity in current services and delivering new ways of working*

There was no evidence which discussed enhancement and integration of current primary care services as a possible solution to enhancing accessibility; making these more integrated with community NHS Trust provision. Yet RCGP *et al* (2013) have specifically identified that these delivery models are likely to provide the quality, productivity and value for money as child and adolescent healthcare moves forward. Conversely, there was no evidence presented which considered social care and local authority services as part of the 'integrated' model of service provision. Furthermore, much of the evidence considers the MDT in the context of nursing, medical and specialist staff groups such as counsellors and CAMHS not that of non-professional or 'generalist' staff. The impact of current efficiency and cost effectiveness strategies, such as the introduction of non-professional, highly trained, assistant practitioner roles across NHS trusts may significantly contribute to the delivery of core and specialist services (Taché & Hill-Sakural, 2010; Skills for Health, 2011). Therefore, this needs to be considered when deciding upon models of adolescent service provision and how this may be delivered cost-effectively. Assistant Practitioners or 'generalists' may be trained specifically to deliver and support a range of adolescent services, which would negate the need for several costly specialist roles detailed in some of the models presented in this review. Assistant practitioners roles may well underpin 'core' services and refer into more 'specialist' services when required and as this a relatively new introduction to the health service, services utilising this type of skill mix are still evolving.

*4.3 The right place, at the right time*

Evidence on a range of delivery locations was explored. Community-based services can be seen as more inclusive and accessible, but can also be responsive to the community in which they sit. However, these services also require staffing and resource in addition to that already provided in healthcare services and the relative costs and benefits are not well evidenced. Conversely, 'One Stop Shops' or multi-agency or integrated drop in clinics require a range of general and specialist staff to be available, on site at the same time. Whilst this may be convenient for young people, it requires a great deal of resource to implement. Furthermore, services targeting adolescents only do not support or facilitate the transition from child to adult services (RCGP *et al*, 2013) and this is an apparent difficulty with school based or linked services. The majority of research evidence [although of low quality] is associated with school-based or school-linked services which do promote integration between health and local authority [education] services and may well prove to be useful in delivery of specific or sensitive health services such as sexual health. However, the design of more integrated 'core' and 'specialist' services in these locations would require

a high level of partnership, collaboration and stakeholder involvement in order to work effectively. In light of this, robust health needs assessments and stakeholder engagement is likely to inform the 'right service, right place and right time'. In addition, the right place and right time needs to consider the wider context of primary, community and secondary care needs such as the effective and supported transition from child to adult services.

## 5.0 Conclusion

Services which are commissioned are likely to reflect the local and geographic population. Changes to the way in which NHS Trusts are organised, healthcare services are commissioned and CIPs impact on the decisions about service [re-]design and are likely to vary across geographic locations. Improving productivity within existing services, delivering the right care in the right setting, developing new ways of delivering care and allocating spending more rationally are of focus for those involved with healthcare services (Monitor, 2013). Further high quality research evidence is required to evaluate the costs, benefits and effectiveness of the models of care presented in this paper, and for the context of the UK. More recently the contribution of telemedicine and its possible impact on service provision should not be ignored (DH, 2012; RCN, 2012); for which evidence was not considered here. However, some points to consider for the [re-]design of adolescent specific services can be concluded, also considering the key points of focus in Monitor (2013) (Figure.1).

*Insert figure.1*

**References**


Advocates for Youth (2008) 2nd Ed. *Science and Success; Sex education and other programs that work to prevent teen pregnancy, HIV and sexually transmitted infections*, Advocates for Youth, Washington

Austerberry, H., Sawtell, M., Ingold, A., Wiggins, M., Arai, L. & Strange, V. (2008) *Evaluation of the teenage Health Demonstration Site programme 1st Annual Report*, Social Science Research Unit, University of London

Baltag, V. & Mathieson, A. (2010) *Youth friendly health policies and services in the European Region*, WHO

Barkan, S., Pfohman, R. & Bolan, M. (2004) *Evaluation of school-based health center clinic and school nurse services in Seattle, Washington September 2000-December 2003*, Public Health Seattle and King Country, USA

Brodie, I., Lanyon, C. & Forrester, D. (2009) *Evaluation of Adolescent Multi-Agency Support Service (AMSS) Islington*, Child and Family Welfare Unit, University of Bedfordshire

Centre for Disease Control and Prevention (2013) *A teen-friendly Reproductive Health Visit*, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, USA http://www.cdc.gov/teenpregnancy/TeenFriendlyHealthVisit.html [accessed online 30JAN14]

Chase, E., Goodrick, R., Simon, A., Aggleton, P. & Holtermann, S. (2006) *Evaluating school-based health services to inform future practice: Lessons from Teen Talk at Kidbrooke School in Greenwich*, Institute of Education, University of London

Chief Medical Officer's Report (2007) *On the state of public health: Annual report from the Chief Medical Officer 2007*, DH, HMSO, London

Denny, S., Robinson, E., Lawler, C., Bagshaw, S., Farrant, B., Bell, F., Dawson, D., Nicholson, D., Hart, M., Fleming, T., Ameratunga, S., Clark, T., Kekus, M. & Utter, J. (2012) Association between availability and quality of health services in schools and reproductive health outcomes among students, *American Journal of Public Health*, 102[10], e14

Department of Health (2011) *Quality criteria for young people friendly health services – 2011 edition*, DH, HMSO, London

Department of Health (2012) *Digital strategy: Leading the culture Change in Health and Care*, DH, HMSO, London

Fothergill, K. & Ballard, E. (1998) The school-linked health center: a promising model of community-based care for adolescents, *Journal of Adolescent Health*, 23[1], 29-38

Goicolea, I., Britt Coe, A., Karin Hurtig, A. & San Sebastian, M.S. (2012) Mechanisms for achieving adolescent-friendly services in Ecuador: a realist evaluation approach, *Global Health Action*, 5

GRADE (Grading of Recommendations Assessment, Development and Evaluations) (2000) GRADE working group, http://www.gradeworkinggroup.org/ [accessed online 09SEPT2013]

Hagell, A. & Coleman, J. (2012) *Adolescent health in the UK today: where next?* Association for Young People's Health, ChiMat

Halevy, A., Hardoff, D., Knishkowy, B. & Palti, H. (1995) A school-linked health service for adolescents in Jerusalem, *Journal of School Health*, 65[10], 416-419

Herefordshire LINk (2012) *Young People's Access to Health and Social Care*, Herefordshire LINk Young People's working group, Herefordshire Council

Jepson, L., Juszczak, L. & Fisher, M. (1998) Mental health care in a high school based health service, *Adolescence*, 33[129], 1-15

Kennedy Review (2010) *Getting it right for children and young people, Overcoming cultural barriers in the NHS so as to meet their needs*, DH, HMSO, London

Kurtz, Z. & Thornes, R. (2000) *Health needs of school age children: The views of children, parents and teachers linked to local and national information*, Department of Health, Department for Education, HMSO, London

Lawrence, R.S., Gootman, J.A. &Sim, L.J. (2009) *Adolescent health services; missing opportunities*, National Research Council and Institute of Medicine, National Academy of Sciences

McIntyre, P., Williams, G. & Peattie, S. (2002) *Adolescent friendly health services*, WHO

Monitor (2013) *Closing the NHS funding gap: how to get better value health care for patients*, Monitor, London

NHS Confederation (2009). *Community Health Services: Making a difference to local communities* [online]. Available at: www.nhsconfed.org/Publications/Pages/Community-health-services.aspx (accessed on 25 February 2009).

National Institute for Health and Clinical Excellence (2005) *NICE: Guideline Development Methods, Appendix G*

http://www.nice.org.uk/niceMedia/pdf/GDM_Chapter7_0305.pdf

Oppong-Odiseng, A.C.K. & Haycock, E.G. (1997) Adolescent health services through their eyes, *Archives Disease in Childhood*, 77, 115-119

Owen, J., Carroll, C., Cooke, J., Formby, E., Hayter, M., Hirst, J., Lloyd Jones, M., Stapleton, H., Stevenson, M. & Sutton, A. (2010) *School-linked sexual health services for young people (SSHYP): a survey and systematic review concerning current models, effectiveness and cost-effectiveness and research opportunities*, Health Technology Assessment Report 10.3310/hta14300

Patton G.C, Viner.R (2007) Pubertal transitions in health, *Lancet*, 369(9567), 1130–9.

Royal College of Paediatrics and Child Health (2003) *Bridging the Gaps Healthcare for Adolescents*, RCPCH, London

Royal College of General Practitioners, Royal College of Paediatrics and Child Health, Royal College of Nursing (2013) *Commissioning a good child health service*, RCGP, RCPCH, RCN, London http://www.rcgp.org.uk/~/media/Files/CIRC/Child-and-Adolescent-Health/RCGP-Child-Health-Modelling-Task-Group-April-2013.ashx [accessed online 30DEC13]

Royal College of Nursing (2012) *Positioning nursing in a digital world: RCN eHealth survey 2012 report*, RCN, London

Santelli, J., Kouzis, A. & Newcomer, S. (1996) Student attitudes toward school-based health centers, *Journal of Adolescent Health*, 18, 349-356

Schools Health Education Unit (2010) *Young People into 2010,* Exeter: University of Exeter

Skills for Health (2011) *The role of Assistant Practitioners in the NHS: factors affecting the evolution and development of the role*, Skills for Health, Bristol

Strunk, J.A. (2009) The effect of school-based health clinics on teenage pregnancy and parenting outcomes: an integrated literature review, *Centre for Reviews and Dissemination*, NIHR

Taché, S. & Hill-Sakurai, L. (2010) Medical assistants: the invisible “glue” of primary health care practices in the United States? *Journal of Health Organization and Management,* Vol.24 No.3, pp.288-305

Tylee, A., Haller, D.M., Graham, T., Churchill, R. & Sanci, L.A. (2007) Youth friendly primary care services: how are we doing and what more needs to be done? *The Lancet* DOI: 10.1016/s0140-6736(07)60371-7

Viner, R.M. (2007) Do adolescent inpatient wards make a difference? Finding from a national young patients survey, *Pediatrics*, 120, 749

Wilf-Miron, R., Sikron, F., Glasser, S. & Barell, V. (2002) Community-based adolescent health services in Israel: from theory to practice, *International Journal of Adolescent Medical Health*, 14[2], 139-144

World Health Organisation (2012) *Making health services adolescent friendly*; *developing national quality standards for adolescent friendly health services*, WHO