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Review of the evidence for adolescent and young person specific, community-based health services for NHS managers

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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evidence from EMBASE, BNI, PSYCHinfo, MEDLINE and Google Scholar was systematically searched for published and unpublished research papers, systematic reviews and meta-analyses.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.

Table 1

9	*community care/ or health service/ or "organization and management"/ or health service provision.mp. or health care quality/ or health care delivery/*		
8	*teenage.mp. or adolescence/*		
7	*youth.mp. or juvenile/*		
6	*adolescent/*		
5	*"organization and management"/ or health services research/ or health care quality/ or United Kingdom/ or health service design.mp. or patient*		

	satisfaction/		
4	*adolescent health/ or adolescent healthcare.mp.*		
3	*health program/ or health service/ or health care utilization/ or young people health service model.mp. or child health care/ or health care access/*		
2	*exp depression/ or exp child health care/ or youth health service model.mp. or exp health care access/ or exp mental health service/*		
1	*exp health service/ or juvenile/ or youth service design.mp. or exp health care access/ or United States/*		

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.

Table 2 Inclusion/Exclusion Criteria

	Population	**Intervention**	**Outcome/Impact**
Inclusion	Adolescent or young people ages, covering at least 3 years in the 14-21 age range (to enable sexual health services serving those up to the age of 25 to	- Any service delivery model across all sectors identified in NHS Confederation (2009) - Information	Health improvement Health impact Health outcome measures Service user feedback

	be included)	relating to the development or design of adolescent specific services	
Exclusion	• Studies **only** targeting young people 18 or over • Studies **only** targeting children under 14 years of age	• Highly specific or specialist targeted interventions e.g. HIV services for the homeless, Child and Adolescent Mental Health Services as the **only** focus • Services focused on child and adolescent – not solely adolescent targeted	No measures of service delivery impact, feedback, evidence or improvement shown

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.

Table 3 Overview of literature included and quality grading

No.	Name, Year	Study Type	Population	Intervention Type	Outcome	Quality grading	Comments
0001	Denny et al 2012	Project evaluation: 2 stage cluster design with randomly selected schools Survey	N=9107 New Zealand 13-17 years	School based multi-disciplinary clinics aimed at sexual and reproductive health, health screening and health education	Increased access to healthcare professionals in schools reduced number of teenage pregnancies *p=0.03*	Very low	Reliant upon training and competence of professionals to work with adolescent people
0002	Brodie et al 2009	Project evaluation: Mixed methods	Adolescents 10-16 years	Adolescent multi agency support service Integrated wrap around care model for children in CAMHS	• Cost savings of £1.1m • Without the intervention 86% would have entered care, 26% actually did • Some of the children who entered care were continued to be supported by the project and resulted in more cost effective foster placements • The number of children 10-16 entering care fell by 36%	Very low	
0003	Jepson et al 1998	Project evaluation: case note analysis	N=265 16-18 years	School based appointment or walk in clinics Multidisciplinary, integrated approach with social care and education Mental health	• Reduced need for external referrals • Students are more likely to seek help in familiar settings • Parents do not need to take time off work to enable students to attend appointments • Reduces barriers in access to healthcare consultations particularly for those with low SES • Model was shown to be successful in engaging with and targeting vulnerable or minority populations	Low-moderate	
0004	McMinn et al, 2012	Model proposal resulting from Bamford Review	Northern Ireland 13-25 years	Stepped care model with 'matched services' Integrated MDT Mental Health and Learning disabilities 4-Tier model with care pathways; Universal, PMH Intervention, Specialist, Intermediate Patient and public involvement Integrated across health and social care	Model yet to be evaluated formally	Very low	

0005	Wilf-Miron et al, 2002	Service evaluation	Israel 12-18 years female N=547	Walk in adolescent health service in a medical centre Integrated across health and social care	• Improved diagnosis of further needs • Improved access to services • Referral source for those with unmet health needs • Improved engagement with health and social care	Low-moderate	
0006	Halevy et al, 1995	Service evaluation	Jerusalem 12-18 years N=134	Health centre specifically designed to service 11 secondary and high schools MDT health and social care School clinics	• Improved direct referral from school professionals, parents and students = easier access • Most of the attendees were middle and upper class even though the clinic was in a low SE area • High dropout rate	Low-moderate	
0007	Santelli et al, 1996	Survey	USA 12-19 years N=2722	School based health clinics MDT education and medical, mental health, nursing, unqualified staff	• 91% of students supported having a school based health centre compared to those who did not have access p<0.001 • Preventative services are less valued than treatment services by users • Students more willing to use school health centres • Increased engagement with minority groups • Parents are more likely to support services that offer counselling services • Students preferred services that dispensed contraceptives or treatments	low	
0008	Fothergill & Ballard, 1998	Survey of centres	USA 12-19 years n=21 centres 27,291 users	School linked health centres MDT/integrated	• Great potential to improve access to services • One central place for all health needs 'right care at right time' • Improved relationships with school staff and HCPs from two way referrals • Ability to reach beyond school populations e.g. homeless, dropouts, runaway youth, detention centres and shelters and social service programs • Help to reach those at risk of unwanted pregnancy, HIV, drug abuse and violence • Follow up is more difficult than school based clinics	Very low	Identifies need for further research
0009	Goicolea et al, 2012	Realist evaluation of services: interviews	Ecuador	Transformation of a mainstream service into a Adolescent Specific Service	• Increased service use amongst adolescents • Improved availability and accessibility for adolescents • Promoted gender equality	low	

					• Requires commitment from staff groups and many put in additional hours to engage in activities with adolescents • High turnover of staff which hindered progression and relationships • Requires integrated approach across community, government, healthcare		
0010	Oppong-Odiseng and Heycock, 1997	Descriptive survey Semi-structured questionnaire	UK 14/15 years N=253	Service user feedback on services	• 85% students believed that there should be adolescent specific services available • Want staff who understand them • Confidentiality is important • Want drop in centres as advice centres and teenage specific clinics	low	
0011	Chase et al, no date	Multi faceted service evaluation	UK 11-19 years	Teen talk project Health drop in clinic based in a school	• 47% of students had heard about the service – most was word of mouth through friends • Highlighted importance of marketing and advertising of services available • Feedback highlighted a need for links between education, connextions and all other services for a holistic approach • Those aged 12-15 were most likely to use the school based service • Whole school approach is valued • Males used service less than females • Immediate access to health advice valued	low	
0012	Herefordshire LINk, 2012	Survey	UK 14-25 years	Evaluation of young people's access to health and social care	• Staff should be specifically trained to work with adolescents • Services need to be more 'youth friendly' • GP surgeries and clinics should be accessible with opening times before and after school and work and weekends • Electronic booking of appointments via text or internet is needed • Sexual health services specifically for adolescents need to be more accessible and available • Advertising and marketing of services available is poor • PPI is essential – involvement in design of services and recruitment of staff • More advice and specific services for anxiety and mental health are needed	Low-moderate	

0013	Barkan et al, 2004	Service evaluation Survey Database Case studies	USA 12-19	School based health centres	• Improved student frequency in exercise • Increased the number of adults young people feel comfortable asking for help • Improved academic performance • Improved support for children who had been suspended or have poor attendance • Increased knowledge and access of services for mental health • Reduction in 'risk taking' behaviours • Reduction in absenteeism, dropouts and school performance • Reduced substance use, pregnancy • Improved relationships in the school setting	Low-moderate	
0014	Viner, 2006	Secondary analysis of survey data	UK 12-17 years	Adolescent specific inpatient units	• 12-14 year olds rated care in an adolescent ward significantly superior to that of a children's ward p<0.05 • 15-17 year olds were significantly more likely to rate their care as excellent on adolescent specific wards compared to adult wards p<0.0001 • Adolescent specific wards provide higher quality of care • Findings strongly support the development of adolescent specific facilities within current service provision	Low-moderate	Some of the respondents were on adolescent specific areas of children's wards Further research is required for 'stand-alone' adolescent units

0015	Austerberry et al, 2007	Service evaluation Surveys Review of projects	UK 11-19 years	Combination of 3 approaches: Approach 1 – Teenage specific, holistic health services (one stop shops etc) Approach 2 – health provision in other community settings Approach 3 – enhancing current NHS mainstream provision	• Requires a wide range of staff roles and collaboration across health and social care and education • Create dedicated staff time for mapping current provision and new data from all stakeholders • Realistic amount of time for ground work and for initial results • Devise a programme of work which is realistic but that includes all services planned for short and long term • Use and enhance existing services where possible • Services which extend from one central 'hub' will help to enhance mainstream and current provision • Specialists in adolescent health are required along with youth workers • PPI essential • Encourage self-referral and ease of access for vulnerable groups • Adopt a gradual change approach to current and mainstream services	moderate	
0016	McIntyre et al, 2002	WHO Review of practices in the EU	International 10-19 years	Services at health centres Services in other centres Services linked to schools Outreach services	• Technical competence of staff is crucial • See the person not the problem • Training and staff support for those working with adolescents • Services need to be physically accessible • Confidentiality and privacy is essential • Services need to be acceptable to the community - PPI • Use current services in health centres and adapt for adolescent care – link up related services and existing ones • Hold specialist clinics in other community based centres where young people may already attend • Urban and rural areas need outreach centres and also the internet to reach those who may 'slip through the net' • Schools provide a natural environment and entry point for young people to access services and opportunity for collaboration and health	Very low	

					promotion		
0017	Strunk, 2008	Systematic review	13-18 years	School based health clinics and teenage pregnancy/parenting outcomes	• School based clinics reduced absenteeism • Reduced developmental delay • Reduced low birth weight babies to teen mothers • Increased use of contraception	low	Limited database search 13 studies included 14 presented Unclear method
0018	Advocates for Youth, 2008	Review of projects and research Including RCTs, quasi experimental design and experimental	USA 13-19 years	Sex education and other programs relating to teenage pregnancy School based/linked Community based Clinic based	*School based* • Improved knowledge • Reduced risk taking behaviours • Reduced incidence of STIs • Improved self-responsibility for decisions • Improved parent-child communication • Increase in teenage pregnancy rate if some services withdrawn • Improved academic achievement and reduced school suspensions [school linked] • Reaching high risk/vulnerable groups *Community Based* • Reduced numbers of teenage births • Reduced risk taking behaviours • Increased incidence of skilled employment and higher education • Reduced truancy rates • Increased access to high quality healthcare • Increased resistance to peer pressure *Clinic Based* • Reduced risk taking behaviours • Reduced incidence of STIs • Increased compliance with treatment protocols • Reduced incidence of teenage pregnancy • Increased positive lifestyle changes • Increased coping mechanisms/actions • Reduced substance abuse	Moderate-high	
0019	Owen et al 2010	HTA Systematic review	UK 11-19 years	Sexual health and reproductive service models	• Broad based, holistic services with medical practitioner input along with an MDT work most effectively • Partnership working across health and social care and education is effective	Moderate-high	
0020	Tylee et al, 2007	Systematic review	International 10-24 years	Primary care services	*The contexts* 1. Combined hospital and drop in services along	moderate	

					with secondary, tertiary referrals and professional training 2. Community based health for all segments of the population in combination with stand-alone units 3. School based units 4. Community based health service in combination with other services 5. Pharmacies and shops 6. Outreach information and service provision; point of contact where young people congregate • Most studies addressed access to healthcare through pharmacies or modification of current services. Making current service more youth friendly was shown to be successful in improving access in all contexts, along with multifaceted approaches • The need for better training in adolescent health was highlighted • Nurse led general practice visits have limited effect on health risk behaviours		
0021	Lawrence et al, 2009	Review of evidence	USA 10-19 years	Wide range of research and practice evidence	• Primary care services should be supported by safety netting in health clinics, schools and community based settings • Primary and secondary provision should be linked and easily referred and include a wide range of settings such as schools, clinics, hospitals • Attention should be focused on particular vulnerable or at risk groups in meeting the **five characteristics** [see below] • There should be an integrated approach and model linking education, health and social care • Speciality training should be available for practitioners • Few studies have examined settings other than school based/linked • Speciality services such as mental, sexual, reproductive and oral health along with substance abuse treatment are not accessible enough for young people • Services are not co-ordinating with each other effectively enough to meet **accessibility,**	Moderate-high	

					appropriateness, effectiveness and equity for adolescent service provision • There is insufficient evidence to suggest that one model of delivery is better than another • Multi-faceted approaches are required that meet the gaps in particular geographic areas – mapping of gaps is good • Office based primary care services are do not meet the **five key requirements** • The narrow focus of many services means that they are ill equipped to provide disease prevention and health promotion for young people especially for reproductive, mental health, oral health and substance abuse		
0022	Baltag and Mathieson, 2010	WHO Review of services in the EU	EU	6 models presented with advantages and disadvantages discussed and summarised 1. Youth health drop ins: clinical provision within existing services 2. Youth health drop ins: prevention and education within existing health provision 3. Youth health drop ins: prevention and education linked to wider provision 4. Youth health outreach: universal 5. Youth health outreach: targeted 6. Development of mainstream health services	1,2,3 Wide range of services provided, health information in a variety of ways, young people develop trust with staff, easy to market as set time and location, clearly defined monitoring information, potential for youth engagement Provision for health information in a variety of ways, access to vulnerable groups, easy to market, clearly defined monitoring information, potential for youth engagement in services, strong partnership with other groups 4, 5, 6 wide reaching, limited stigma, access to vulnerable groups, link with existing structures, partnerships with other groups, use in conjunction with drop in models, partnership working	Moderate-high	

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).

Figure.1 Recommendations for Practice

In the absence of evidence indicating the costs and associated benefits of models of adolescent healthcare provision and considering the key points of focus in Monitor (2013), the following recommendations for health service managers may be worth consideration:

- The role and skill mix in community health services with use of healthcare professionals such as school nurses or highly skilled assistant practitioners trained and experienced in working with, and delivering adolescent targeted services, integrated within mainstream services
- Explore the potential role and involvement of private and voluntary sectors
- Improve specific training offered to healthcare staff working with adolescents
- A combination of outreach, school-linked or school-based clinics through appointment, walk in and 'one stop shop' design specific to adolescents to enhance mainstream provision. This will reduce the impact of cost on developing new and specific service provision but also enable a holistic, joined up approach
- Services should be multi-disciplinary and enable access to medical, nursing, social and mental health care to reduce the need for external referrals and improve access to holistically designed services, but also facilitate transition from child to adult services
- Internet and mobile technology based access to services and appointments with possible exploration of telemedicine
- A clear and targeted 'marketing' strategy for the adolescent specific provision
- Collaborative approaches which enable access to health, education and **social** care staff
- Preventative services developed in partnership with educational establishments
- Expect to wait for at least 6-12 months to evaluate the productivity and impact of the service

- Further research into the cost-benefits of integrated primary, core, specialist and multi-agency models of service delivery

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