



# Adolescent Asthma Action

Jordan University of Science and  
Technology

# Triple A (Adolescent Asthma Action) Programme in High Schools<sup>1</sup>

Region	Global/MENA
Country	Australia, United States, Jordan, New Zealand and Germany. This write-up will describe the Jordan programme.
Organization	Australia, Detroit (United States), Jordan (Middle East), Hamburg (Germany). This write-up will describe the Jordan programme.
Name	Triple A (Adolescent Asthma Action) program in high schools
Category	Health
Start date	2006
End date	Ongoing
Partners	Primary Health Care Education and Research Unit, Western Sydney Local Health District, The University of Sydney, Menzies School of Health Research, The University of Tasmania, Australia.
UN involvement	Non-UN
Contact	Dr. Nihaya Al Sheyab, Assistant Professor at Jordan University of Science and Technology Dr. Smita Shah, Associate Professor, The University of Sydney smita.shah@health.nsw.gov.au / +61298456505

## 1. Background and description

Tobacco use kills more than 6 million people globally each year and is the leading cause of preventable mortality.<sup>2</sup> In its 2008 report on global tobacco epidemic, the World Health Organization (WHO) approximated that there are more than 1 billion smokers worldwide and that more than 80 per cent of them live in low- and middle-income countries.<sup>3</sup> Adolescence is a period of growth and development that is also characterized by vulnerability to health-related risks and behaviours, one of which is smoking. Adolescents are particularly vulnerable to addiction as nicotine dependence may begin with exposure to low levels of nicotine in early adolescence. The estimated prevalence of Jordanian youth who have ever smoked ranged from 18 per cent in 1999 to about 13 per cent in 2004 and 16 per cent in 2007, and the prevalence was substantially greater among boys than girls.<sup>4</sup> The current prevalence rate of smoking among university students is 35 per cent (56.9 per cent for males and 11.4 per cent for females), with about 80 per cent being cigarettes smokers.<sup>5,6</sup> Another recent study found that the overall prevalence of males in grades 7 and 8 who had ever smoked cigarettes was 35.6 per cent, 86.2 per cent of this group were current (within the last month) cigarette smokers and almost half reported using a water pipe, a significant predictor of

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1 Desk Review ( May-September 2014); Inquiry Form (9 August 2014); Interview (30 September 2014); Write up (8 December 2014); Internal Validation(8-17 December 2014); Implementer Validation(2 January 2015); Final validation (October 2015).

2 'WHO Report on the Global Tobacco Epidemic: 2013 Enforcing bans on tobacco advertising, promotion and sponsorship', Geneva, 2013. ([http://apps.who.int/iris/bitstream/10665/85381/1/WHO\\_NMH\\_PND\\_13.2\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/85381/1/WHO_NMH_PND_13.2_eng.pdf?ua=1))

3 Research for International Tobacco Control, WHO report on the global tobacco epidemic: the MPOWER package. 2008: World Health Organization.

4 Belbeisi, A., et al., 'A surveillance summary of smoking and review of tobacco control in Jordan, Global Health. 2009; 5: 18.

5 Khader, Y. and A. Alsadi, 'Smoking habits among university students in Jordan: prevalence and associated factors', Eastern Mediterranean Health Journal, 2008; 14(4): 897-904. PMID:19166173.

6 Journal of Nursing Education and Practice, 2013, Vol. 3, No.9, www.sciedu.ca/jnep .



male cigarette smoking. The most common age at which Jordanian male adolescents started cigarette smoking behaviour was 11–12 years (49.1 per cent).

Many adolescents suffer from asthma but their symptoms often go undetected because health professionals are reluctant to diagnose asthma because it was historically perceived as a severe condition.<sup>9</sup> Smoking is reported to double the risk of death among adolescents with asthma.

Poor management of asthma has been an issue, especially in schools, and needs to be tackled, particularly in Jordan, where asthma rates are relatively common in adolescence compared to some developed countries.<sup>10,11</sup>

The combination of smoking and asthma in adolescents further exacerbates health concerns. Smoking and asthma are potent contributing factors to chronic lung disease and the combination of the two can significantly hinder lung function. The burden of asthma is high,<sup>12</sup> especially among young people. In the 12-15-year age group, the prevalence of near-fatal episodes of asthma and those who need hospitalization, intubation and cardiopulmonary resuscitation is higher than for younger children.<sup>13</sup> Because smoking and asthma are interrelated, any smoking prevention programme should also address asthma-related issues.<sup>14</sup>

Peer influence has proven to be an important factor in the development of adolescent smoking behaviour and has been associated with higher smoking rates and lower self-efficacy to stop smoking in adolescents with asthma.<sup>15</sup> Following this logic, peers also have the ability to positively influence adolescent smokers to quit this behaviour<sup>16</sup> and increase awareness about the adverse health-related outcomes of smoking. Well-designed, school-based, peer-led education

programmes thus can potentially have a positive impact on asthma self-management in adolescents, and student peer leaders can be useful and responsible partners in health promotion programmes.<sup>17</sup>

## Organization profile

### *Jordan University of Science and Technology*

The mission of the Jordan University of Science and Technology (JUST) is to provide undergraduate and graduate students with a broad, stimulating and rigorous education as well as professional skills, basic and applied research and knowledge that meets the needs of the labour market and enable graduates to compete nationally, regionally and internationally. The university promotes and fosters a multicultural university community to attract more Arab and international students. It is committed to academic excellence and community partnerships through curricula, teaching methods, scholarships and services designed to achieve sustained national comprehensive progress.<sup>18</sup>

### *World Health Organization*

The WHO is a specialized agency of the United Nations that concentrates exclusively on health by providing technical cooperation, carrying out programmes to control and eradicate disease and striving to improve the quality of human life. WHO has 191 Member States that meet annually at the World Health Assembly in Geneva. The WHO mission statement includes the following objectives:<sup>19</sup>

- To act as the directing and coordinating authority on international health work;
- To promote technical cooperation;
- To assist Governments, upon request, to strengthen health services;

9 Abuekteish F, Alwash R, Hassan M, Daoud AS. 'Prevalence of asthma and wheeze in primary school children in northern Jordan', *Ann Trop Paediatr* 1996;16(3):227-31.

10 Interview with Nihaya Al Sheyab on 30 September 2014. 11 Abu-Ekteish F, Ootom S, Shehawi L, 'Prevalence of asthma in Jordan: comparison between Bedouins and urban school-children using the International Study of Asthma and Allergies in Childhood phase III protocol', *Allergy and Asthma Proceedings*, 2009, 30:181–185.

12 Al-Akour N, Khader YS, 'Quality of life in Jordanian children with asthma', *International Journal of Nursing Practice*, 2008, 14:418–426. 13 Braman, 2006. 14 Elizer et al., 2007.

15 *Journal of Nursing Education and Practice*, 2013, Vol. 3, No.9, [www.sciedu.ca/jnep](http://www.sciedu.ca/jnep). Van De Ven, M.O.M., et al., 'Bidirectionality in the relationship between asthma and smoking in adolescents: a population-based cohort study', *Journal of Adolescent Health*, 2007, 41(5): 444-454. PMID:17950164 16 Patten, C.A., et al., 'Reported willingness among adolescent non-smokers to help parents, peers, and others to stop smoking', *Preventive medicine*, 2004; 39(6): 1099-1106. PMID:15539043 <http://dx.doi.org/10.1016/j.ypmed.2004.04.020>.

17 *Pediatrics*, official journal of the American Academy of pediatrics, 24 August 2013. 18 JUST website, <http://www.just.edu.jo/Pages/Default.aspx>. 19 WHO website, <http://www.who.int/trade/glossary/story096/en/>.



- To provide technical assistance and, in emergencies, aid;
- To stimulate and advance work on the prevention and control of endemic diseases;
- To promote, in cooperation with other agencies, the improvement of nutrition, housing, sanitation, recreation, economic or working conditions and environmental hygiene;
- To promote and coordinate biomedical and health services research;
- To promote improved standards of teaching and training in health, to establish and stimulate the establishment of international standards for biological, pharmaceutical and similar products, and to standardize diagnostic procedures;
- To foster activities in the field of mental health and the harmony of human relations.

### *The Triple A programme*

Triple A (Adolescent Asthma Action) is a peer-led, evidence-based and school-based intervention programme that is directed at improving asthma self-management and reducing the uptake of smoking among adolescents.<sup>20</sup> The Triple A programme originally developed in Australia<sup>21</sup> was adapted to suit non-English-speaking cultures in the Middle East. The programme has also been tested in Jordan, where it is known as Triple A in Jordan (TAJ) and has resulted in significant improvement in self-efficacy to resist smoking.<sup>22</sup>

Peer education occurs within the school setting and involves senior students delivering a health education programme to younger students (grades 7 and 8). The programme consists of four structured lessons about asthma, asthma management, avoidance of triggers, and how to resist peer pressure related to tobacco smoking, using

Bandura's self-efficacy of social cognitive theory through a series of activities. These include the class 'smoke-free' pledge, which utilizes peer pressure in a positive way to motivate students to voluntarily sign a pledge to be smoke-free for a period of time. The programme is delivered through interactive teaching and learning activities, including role play, games, videos, group discussion and a quiz show, all of which are more effective than traditional didactic education for adolescents.<sup>23,24</sup> The programme also helps students to develop their communication, leadership and teamwork skills.

### *Pilot phase/test of the intervention<sup>26</sup>*

The pilot phase consisted of:

1. A focus group to understand the needs and experiences of students with asthma;
2. A mini run of the three steps of the Triple A programme to examine its acceptability and feasibility in Jordan;
3. Another focus group to determine the modifications needed to adapt Triple A to the Arab culture and school context.



20 Shah S., Peat JK, Marzurski EJ, Wan H, Sindhusake D, Bruce C, Henry RL, Gibson PG. Peer-led asthma education improves quality of life and asthma morbidity in adolescents: a randomised controlled trial. *BMJ* 2001; 322:583-5.

21 Shah, S., Mamoon HA, Gibson PG. Peer-led asthma education for adolescents: Development and formative evaluation. *Health Promotion Journal of Australia*, 1998 8(3) 177-181.

22 Al-sheyab, N., et al., 'Peer-led Education for Adolescents With Asthma in Jordan: A Cluster-Randomized Controlled Trial',

23 Ochieng BMN, 'Adolescent health promotion: the value of being a peer leader in a health education/promotion peer education programme', *Health Education Journal*, 2003, 62:61-72.

24 Feasibility of a peer-led, school-based asthma education programme for adolescents in Jordan', *Eastern Mediterranean Health Journal La Revue de Sante de la Mediterranee orientale*, Vol. 18, No.5, 2012.

26 Ibid.

## 2. Goal and objectives <sup>27</sup>

### 2.1. Goal

Triple A works to promote the health and well-being of students with asthma and create a supportive school environment.

### 2.2. Objectives

The intervention aims to empower 11-13-year-olds by encouraging them to interact with their peers and offer to help in case of an asthma emergency.

#### **The long-term objectives are to:**

- Improve self-management of asthma among adolescents;
- Decrease the uptake of smoking;
- Decrease smoking among vulnerable groups including females and pregnant women and their partners. This objective is not of direct relevance relevant to students in school, but can be achieved through the ripple effect of the programme, when students take the message home to their parents and relatives;
- Reduce environmental tobacco (second hand) smoke exposure and encourage a smoke-free environment in schools and at home.

#### **The short-term objectives for educators, i.e., university students, are to:**

- Consolidate knowledge about asthma and its management;
- Build confidence and skills in educating adolescents about asthma;
- Enhance communication and leadership skills.

#### **The short-term objectives for high school students are to:**

- Increase knowledge of asthma and its management (for all students and teachers);
- Promote avoidance of at-risk behaviour (for all students);
- Improve recognition of asthma in students (for all students and teachers);
- Take appropriate action in an asthma emergency (for all students and teachers);
- Use asthma medications correctly when required (for students with asthma);
- Take action to avoid exercise-related asthma (for students with asthma);
- Visit a doctor regularly for their asthma (for students with asthma).

### 3. Target group<sup>28</sup>

#### 3.1. Age group

The target age group for the Triple A programme is the 11-17-year age group, including peer leaders (senior students), recipients of the asthma and smoking messages (younger peers) and the wider school community.

It is important to note that the ages/grades of students in each step are flexible and can be negotiated with the school.

#### 3.2. Gender considerations

Four schools were selected randomly, two from all the eligible high schools for girls and two from all the eligible high schools for boys. Schools were stratified according to gender to ensure a balanced sample. The sample in Jordan included more males (53 per cent) than females (43 per cent).

#### 3.3. Ethnic / disability considerations

The programme does not discriminate against students with a disability or based on ethnic background. All school students are eligible to participate in the programme if their parents consent.

#### 3.4. Targeting the most marginalized / most at risk

The intervention focused on enhancing equity or decreasing inequities between groups by allowing all classes and groups of the community present in class to take the session together. Of the randomly selected schools, 90 per cent were public schools with low to middle socioeconomic status.

#### 3.5. Human rights programming

The intervention employed a human rights-based approach. Youth had an active voice in suggesting how to be taught about asthma and smoking, and they can

choose the type of activities to deliver the necessary knowledge and skills. Young people were empowered by learning how to make informed choices.<sup>29</sup>

#### 3.6. Youth involvement

The Triple A programme was developed by Dr Smita Shah in Australia in consultation with students, staff and parents to complement the health curricula of the participating schools. Students were also consulted in the development of the programme resources and videos 'Breath Easy' and 'Running Short', which are used in the programme. These videos are used in Jordan and have been translated into Arabic with funds provided by WHO.

In Jordan, youth were actively involved in setting the objectives and the design of the intervention during the feasibility study, in which they were asked what they would like to add to the programme in terms of activities and learning/teaching methods. The young people learn about asthma and the issues related to smoking by educating their young peers

## 4. Strategy and Implementation

#### 4.1. Strategies / theoretical approaches / methodologies

Triple A is grounded in universally applicable theoretical concepts including peer leadership, self-efficacy<sup>30</sup> and empowerment,<sup>31</sup> suggesting its potential for use in different cultural contexts.<sup>32</sup>

The programme was based on the framework of empowerment education (Freire empowerment model), social cognitive theory, Precede-Proceed model and health locus of control. Triple A uses a peer-led approach, which has been proven to be effective

28 The information in this section was also provided during the interview with Nihaya Al Sheyab on 30 September 2014.

29 Interview with Nihaya Al Sheyab, 30 September 2014.

30 Bandura A., 'Recycling misconceptions of perceived self-efficacy', *Cognitive Therapy and Research*, 1984, 8:231-255.

31 Freire P., 'Pedagogy of the oppressed', New York, Continuum Books, 1970. Freire P, Reynolds R., 'Pedagogy of the city', New York, Continuum Books, 1993.

32 Shah S, Mamoon HA, Gibson PG. Peer-led asthma education for adolescents: Development and formative evaluation. *Health Promotion Journal of Australia*, 1998, 8(3), 177-181.

especially with adolescents,<sup>33</sup> as shown in figure 1.<sup>34</sup>

provide the initial training of the peer leaders and facilitate the steps of the programme.

The Triple A programme uses a three-step cascade process from senior to junior students to deliver asthma education (figure 2) and has well-developed resources, including standardized training manuals, educational videos, asthma-related models and devices and first aid kits (<http://triplea.asthma.org.au>). Trained health workers

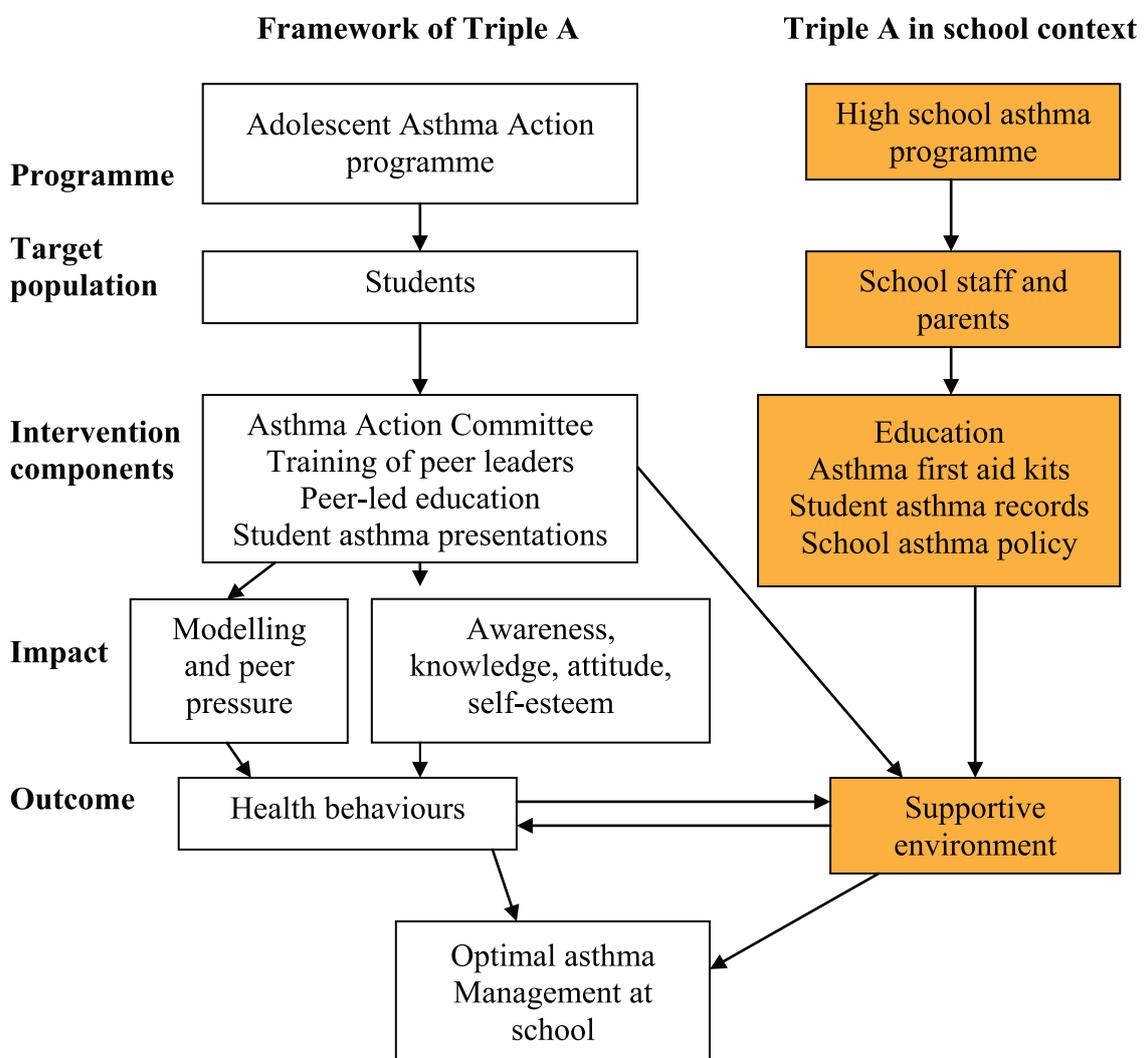


Figure 1. Framework for the Triple A model (Shah 1994)

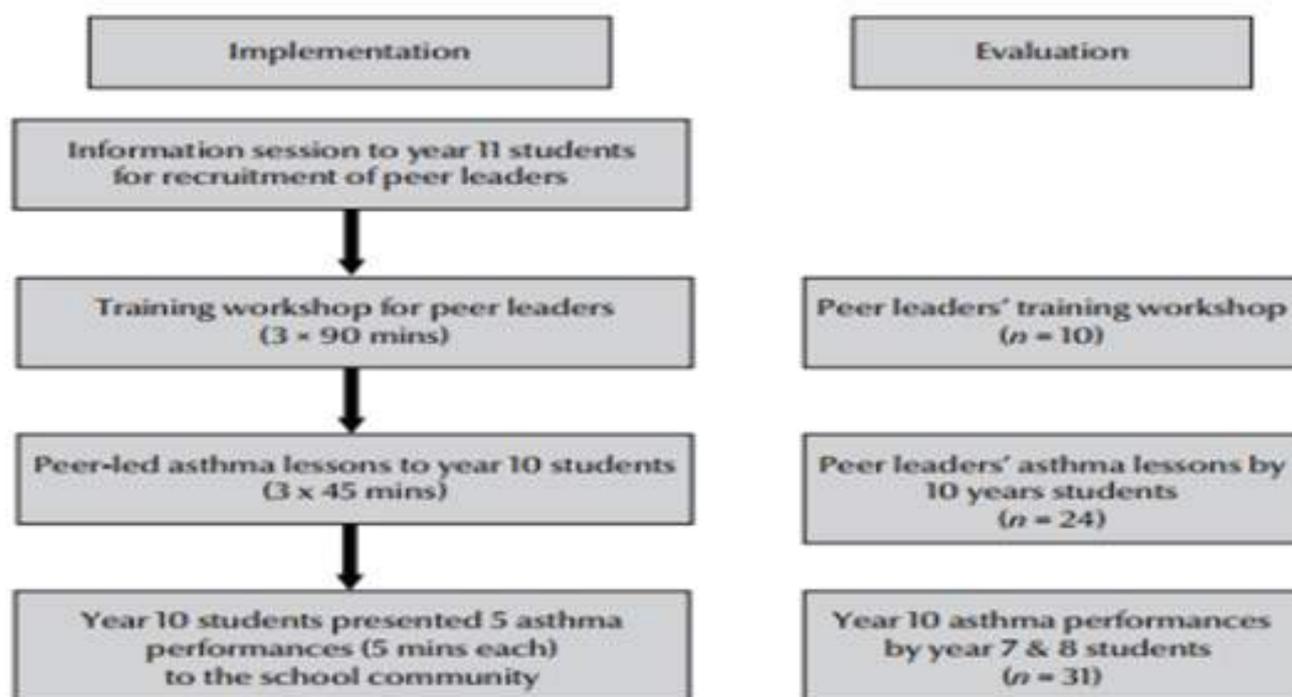
33 Interview with Nihaya Al Sheyab, 30 September 2014.

34 Green, J. (2001). Peer Education. IUHPE - Promotion & Education, 8(2), 65;

(The Jordan programme was operated according to this flow chart.)

## 4.2. Activities

The Triple A programme uses a series of structured lessons to educate younger peers about asthma, asthma management and resisting peer pressure related to tobacco smoking. The university students are recruited and trained by Dr. Nihaya Al Sheyab from the JUST Faculty of Nursing.



**Figure 2. Implementation, student participation and evaluation of the Triple A programme<sup>36</sup>**

The Triple A lessons are designed for trained peer leaders from grades 10 or 11 to deliver to younger peers in grades 7 and 8. The activities are implemented through the following three steps:

**Step 1.** Triple A educators, i.e., trained university students, coach volunteer year 10 or 11 students to be Triple A peer leaders for the programme during a one-day workshop. Peer leaders learn about asthma and its management and how to resist the uptake of tobacco smoking, and develop skills in group facilitation and leadership.

**Step 2.** Peer leaders deliver the Triple A lessons to target students in year 7, using the Peer Leader Manual as a guide. In three lessons, students learn about asthma and how to resist tobacco smoking through videos, games and activities. The students to critically analyse the challenges faced by adolescents with asthma and to propose strategies to address these challenges. (Sometimes Triple A could be extended to four lessons depending on the school timetable and

35 Feasibility of a peer-led, school-based asthma education programme for adolescents in Jordan', Eastern Mediterranean health Journal, La Revue de Santé de la Méditerranée Orientale, Vol.18, No.5. 2012.

36 Ibid.

37 Triple A Program Peer Leader Manual 3rd Edition, 2013.

arrangement with school teachers).

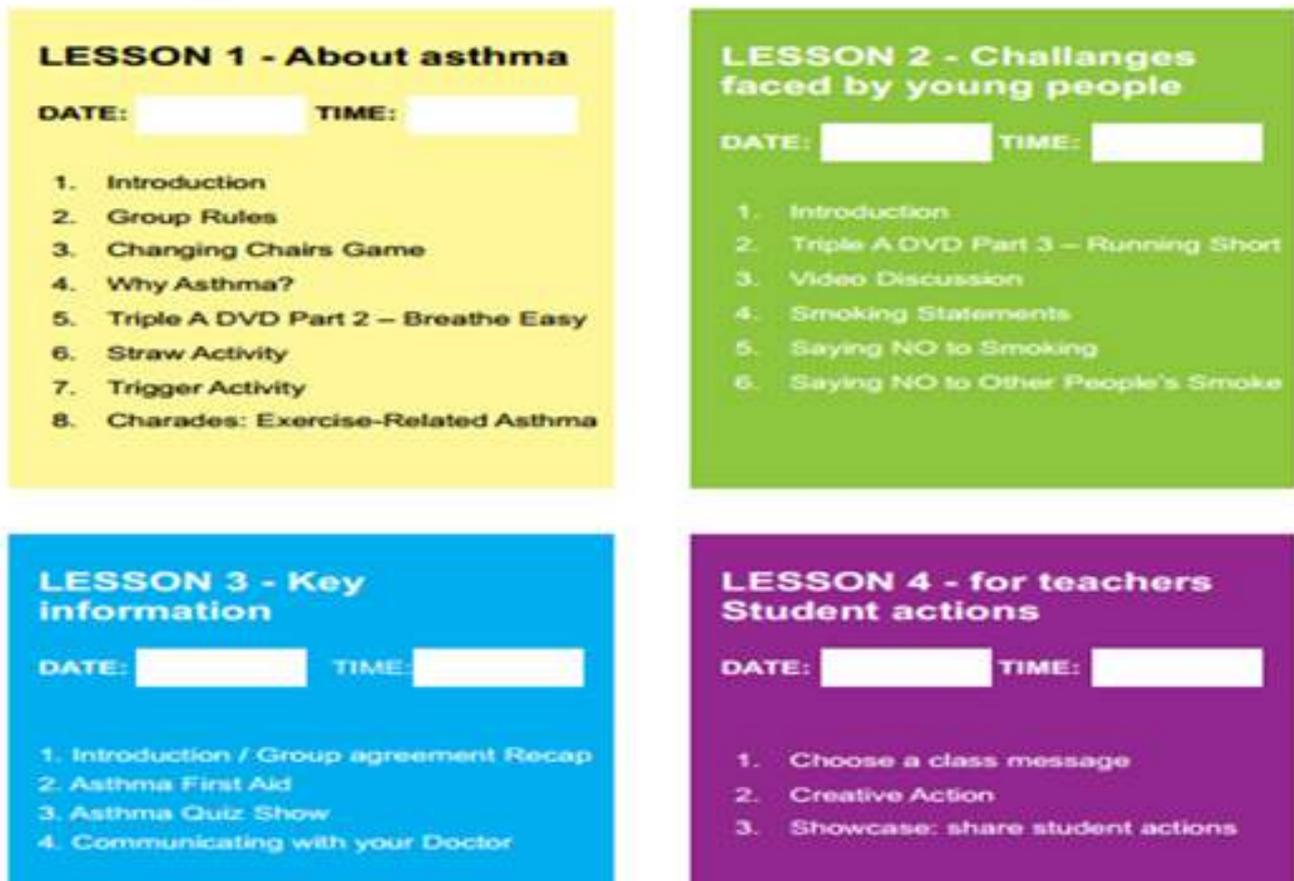


Figure 3. Triple A lesson plans <sup>37</sup>

Step 3. Wider dissemination of asthma and smoking prevention information occurs when target students relay what they have learned to other students and members of the school community through creative actions including songs, rap, drama, acting and poems containing key asthma and smoking messages.

Figure 4 below, from the Triple A Program Peer Leader Manual, illustrates these steps.

#### 4.3. Innovativeness

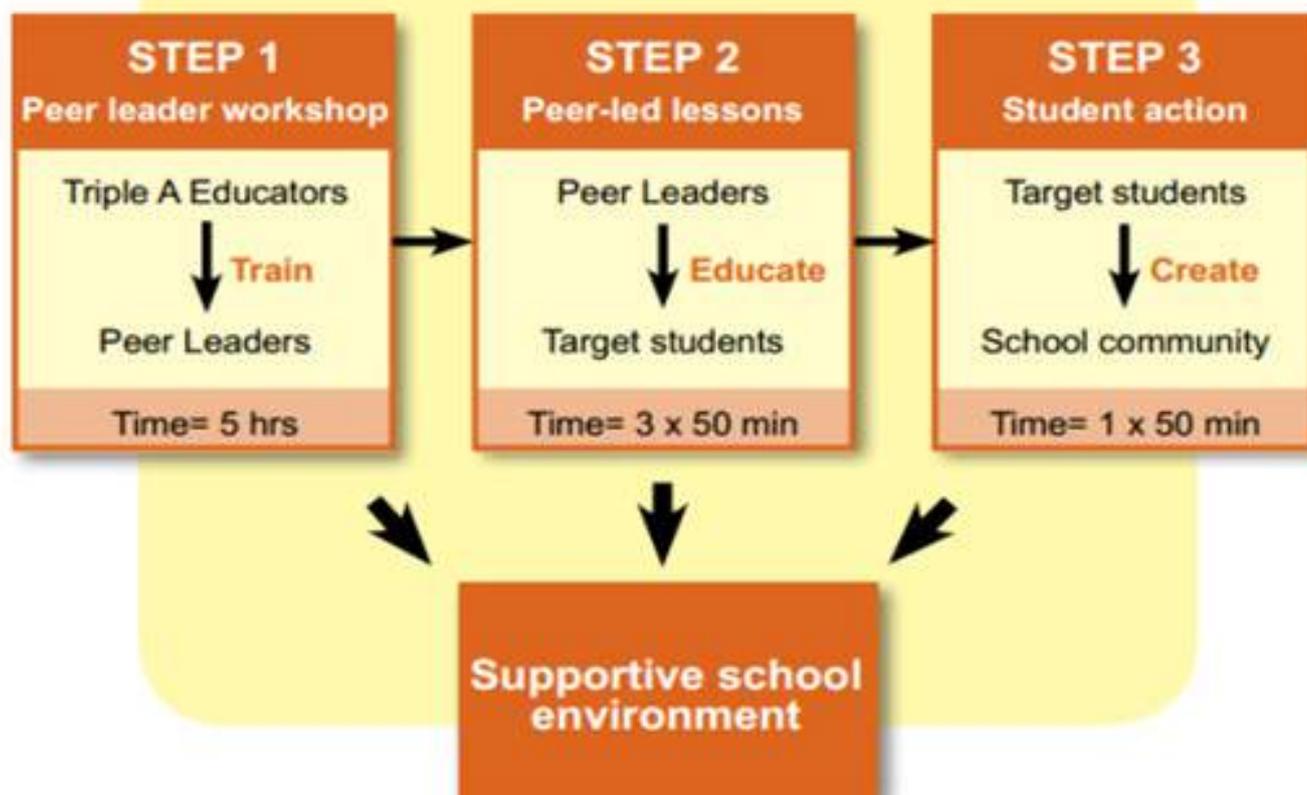
Triple A is the first peer-led asthma education programme in high schools and was the first globally to use a peer-led approach to educate youth about asthma self-management skills and smoking. The

fact that trained university students in turn train school students creates a chain effect and gives the programme an advantage over other programmes, as shown in figure 5. This advantage occurs through the programme's ripple effect.

#### 4.4. Cost and funding

In Jordan, WHO funded the programme. The total cost was approximately \$8,000 for translation of the documents and implementation in four schools.

In Australia a cost evaluation was



**Figure 4. The Triple A steps**

interventions: assessing the cost of the adolescent asthma action program in Australia, Australian Journal of Primary Health, 2014).

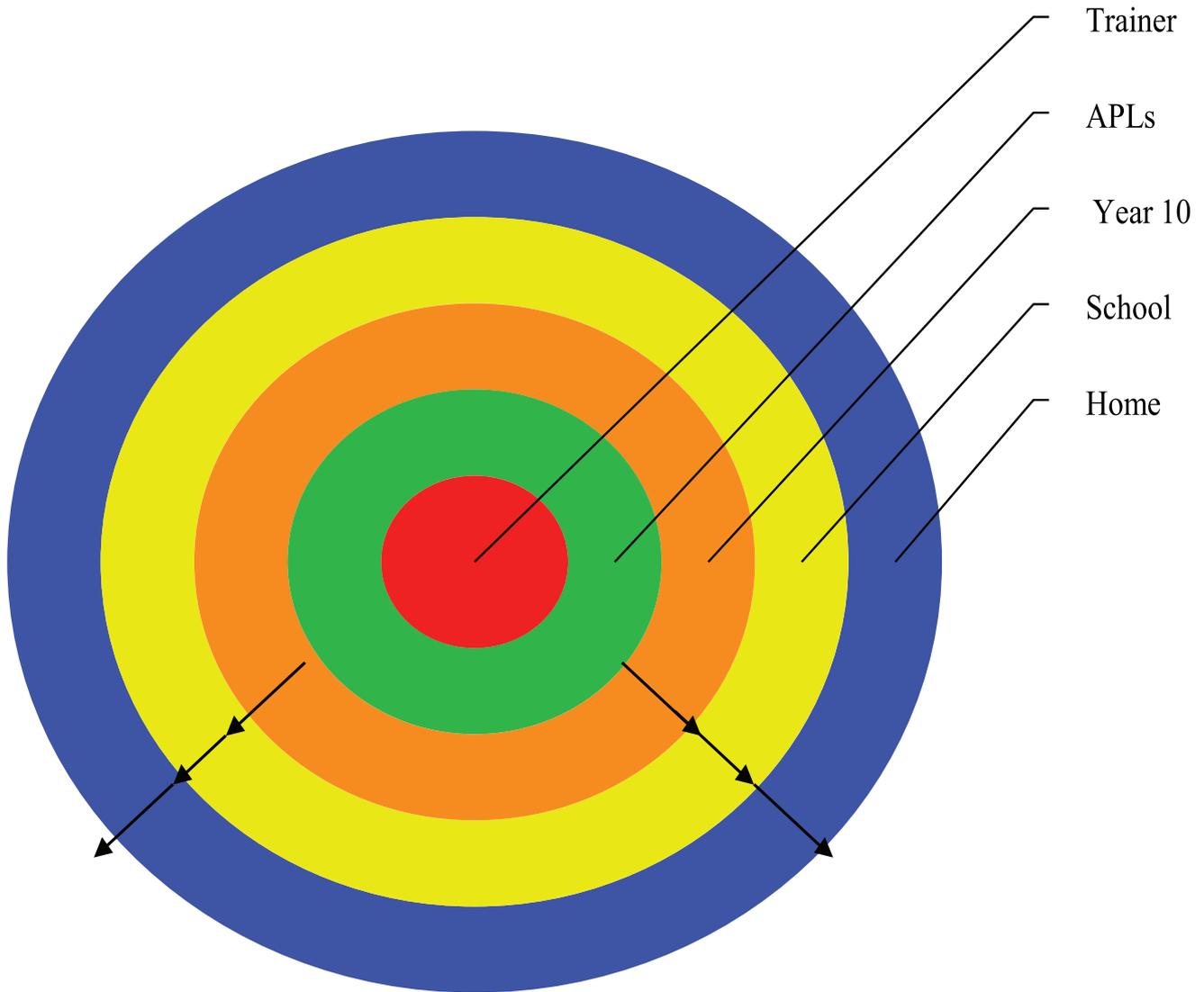
#### 4.5. Sustainability

To ensure sustainability, schools need to adopt the programme and integrate it into their curricula and universities should offer it as an elective to students to engage with community, so that there will be a group of volunteer students to go to the schools each year.

The programme is deemed sustainable due to the following features:

1. The programme materials, which include a Peer Leader Manual, three DVDs ('Breath of Life', 'Breathe Easy' and Running Short') and an Educator Guide are available on the website. 2. The lessons are designed to be practical and fun and can be easily integrated into a school's curriculum.
3. WHO has funded the translation of all programme materials and resources into Arabic, so it can be replicated elsewhere in Jordan and possibly in other Arab countries if they are interested.

4. In Australia, the program has been running for over two decades and is currently targeting schools with high numbers of indigenous students in Australia and New Zealand.



**Figure 5. Theoretical ripple effect of Triple A**

#### **4.6. Replicability**

Since 2006, Triple A has been implemented in 16 schools in Jordan. It takes an average of one month to implement the three steps completely.

In Australia, over 25,000 secondary school students in Australia have completed the programme; 1,000 university students (medicine, pharmacy, nursing, public health and education) and 50 health and education professionals have participated in the training as Triple A Educators, and in turn have coached more than 2,500 senior students as Asthma Peer Leaders. This peer-led asthma education programme developed in Australia was feasible and acceptable in the Jordanian cultural and linguistic contexts.

The results of a relevant unpublished study; 'Cluster RCT: Effect of Implementing a School-Based, Peer-Led, Asthma and Smoking Prevention Program on Breath Carbon Monoxide Levels Among Early Adolescents in Jordan' are currently being analysed and will be published



soon. The objective of this study was to test the effectiveness of TAJ and of 'TAJ-Plus', which included the additional 'class smoke-free' pledge strategy, on breath carbon monoxide (CO) levels in male high school students in Jordan four months post-intervention. In this cluster-randomized controlled trial, four public male high schools in Irbid, Jordan were randomly assigned to receive the TAJ-Plus (n=215) or the TAJ alone (n=218). TAJ educators were third-year male undergraduate nursing students (n=9) who received training in a one-day workshop. These educators then trained senior students from the four schools to be Peer Leaders (n=53), who then taught peers in grades 7 and 8 (n=433). The Peer Leaders in the TAJ-Plus schools implemented the smoke-free pledge within the students in grades 7 and 8, who all voluntarily signed the pledge for four months. Data were collected from students in grades 7 and 8 using self-administered questionnaires and a smokerlyzer (a device that measures breath CO levels) at baseline and four months post-intervention. Students from the TAJ-Plus group reported significant reduction in breath CO levels ( $p<0.000$ ) as compared to the TAJ group. Improvement in asthma control was greater ( $p=0.03$ ) in non-smokers as compared to smokers. The group commitment to a 'class smoke-free' pledge is feasible, beneficial and an incentive to motivate adolescents to abstain from smoking. Using social influences approaches in schools can be useful in countering the aggressive tobacco marketing campaigns.

## 5. Evaluation of effectiveness

An evaluation plan was developed prior to initiation of the intervention. It included the

quality of life, knowledge and awareness of asthma and resistance to smoking. The evaluation data were disaggregated by sex, age, ethnicity, geographic region and socioeconomic status.

A process evaluation of the Triple A materials is conducted annually, with the peer leader groups from each school using semi-structured questionnaires, to ensure that the programme continues to be relevant. The programme's resources have been updated accordingly over the years in Australia, with advice from students, school staff and Triple A Educators.

A secondary analysis of the cluster-randomized controlled trial of students with asthma (n = 259) in the four randomly selected high schools revealed the impact of this intervention. The evaluation was stratified for gender in Northern Jordan and used a closed-envelope technique.

Students with asthma (n = 261) in grades 8, 9 and 10 were surveyed at baseline in December 2006 and three months post-intervention on the main outcomes, which were asthma-related quality of life, knowledge of asthma management and self-efficacy to resist smoking.

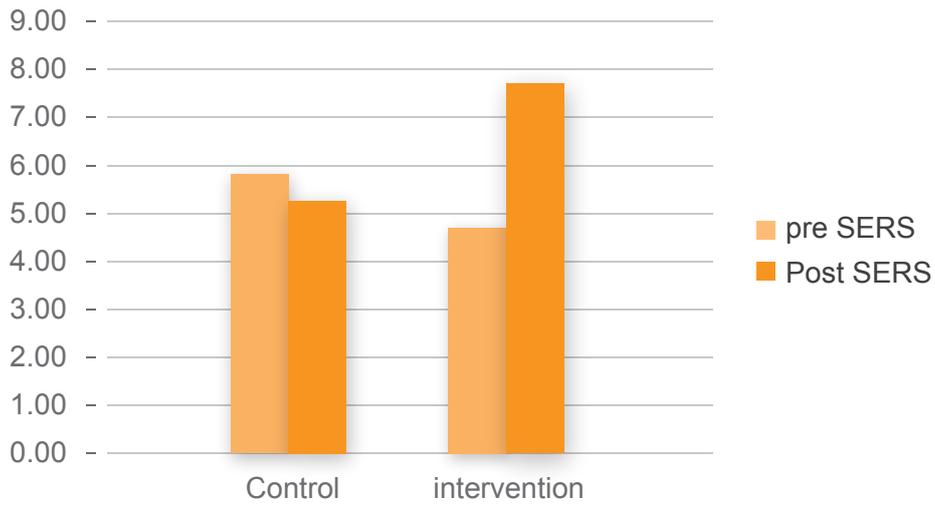
The prevalence of smoking among students with asthma was 29 per cent. Male students (44 per cent) were more likely to smoke than females (6 per cent) ( $p<0.001$ ). Compared to the control group, the peer-led intervention improved self-efficacy to resist smoking and understand asthma and asthma-related quality of life. Smokers within the intervention schools improved self-efficacy to resist smoking by 83 per cent ( $p=0.001$ ), asthma



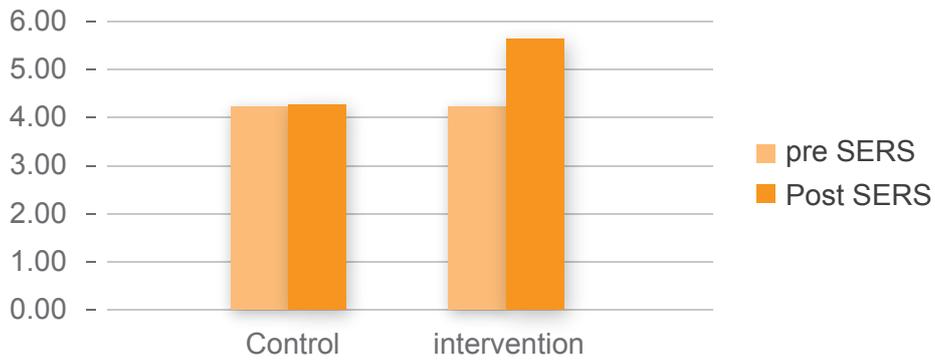
<b>No. wheezing attacks</b>			
1-3 / year	49 (26)	142 (74)	0.18
4-12 / year	11 (31)	24 (69)	
>12 / year	5 (29)	12 (71)	
<b>Asthma diagnosed by physician</b>			
Yes	48 (26)	135 (74)	0.46
No	23 (31)	52 (69)	
<b>Family members smoke</b>			
Yes	59 (32)	123 (68)	0.009
No	12 (16)	62 (84)	
<b>Frequency of family smoking</b>			
Lightly	5 (17)	25 (83)	0.07
Heavily	58 (33)	117 (67)	

**\*T-test or chi-squared test used according to the level of the variable.**

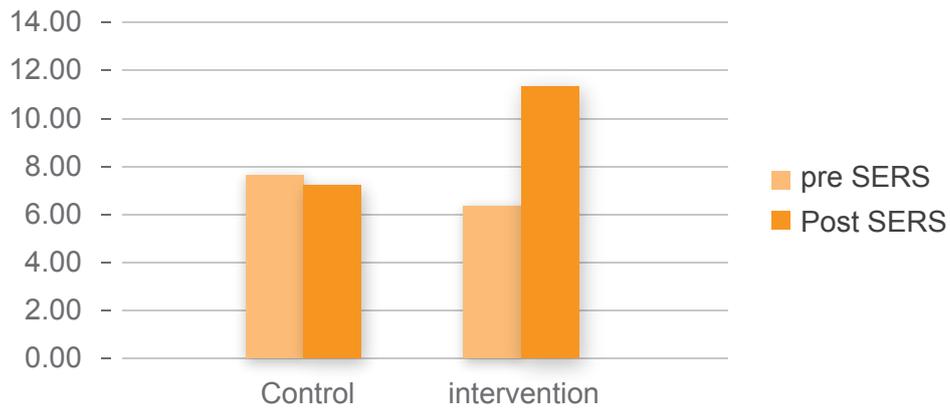
The figures below illustrate the impact of Triple A:



**Impact of Triple A on smokers' knowledge (n=72)**



**Impact of Triple A on smokers' quality of life (n=72)**



**Impact of Triple A on self-efficacy to resist smoking**

## 6. Strengths and opportunities

The programme blends social influence with active learning methods that are relevant to young people, particularly in disadvantaged communities. The Triple A programme was developed specifically for high school students from communities with low socioeconomic status and thus aims to bridge the gap in educational and health inequities between rich and poor. The Triple A programme has the potential to greatly benefit the health of young people, who in turn can influence the health of their families and wider communities.

## 7. Challenges

A number of challenges were faced in the implementation and evaluation of the programme.

- Implementing the programme during school exam periods was a difficult task.
- In Jordan specifically, the school curriculum is very condensed, which meant there was not enough time for the programme to be implemented fully.
- During the evaluation, the implementers noted that some of the students were absent during the evaluation, which included only 72 students from the four schools.
- Some parents did not want their children to be present during the lessons, especially parents who smoke and are reluctant to quit or at least participate in any smoking cessation intervention.
- Transferring students from one school to another was a challenge in following up with students to evaluate the effectiveness of the programme.

## 8. Next steps and the way forward

In order for this practice to move forward and go beyond its original context, more motivation is needed to involve university students in the programme and go back to schools to train peer leaders. One way to motivate university students is through counting their involvement as an accredited assignment in one of their university subjects. In addition, more support is required from the Ministry of Education and school principals.

### *Modification to Triple A to focus more on smoking cessation/prevention*

Systematic approaches are needed to reduce tobacco use in Middle Eastern countries such as Jordan so as to reduce smoking and the associated health burden among adolescents, particularly in relation to asthma. There is an urgent need to develop health education programmes and school-based anti-tobacco smoking interventions that target children in their early years in high school to prevent the uptake of tobacco use among this vulnerable age group, especially students with asthma. The class 'smoke-free' pledge was added to the TAJ programme to help high school students with and without asthma to be smoke-free through a group commitment in schools. The class smoke-free pledge is based on the concept of the 'No Smoking Class' competitions, which were developed in Finland in 1989. Grade 8 students aged 14 years volunteer to sign a 'commitment form' to be a non-smoking class for six months. Classes monitor their adherence by filling in weekly follow-up forms, and those that adhere are entered into a lottery. In the Finland study, there are four main and 10 secondary prizes of \$2,000 and \$200 respectively. This intervention is led by



teachers and health education on smoking is provided. A meta-analysis undertaken by Isensee and Hanewinkel (2012) on the 'Smoke Free Competition' in European countries, which is an adaptation of the 'No Smoking Class' competition, showed a significant pooled risk ratio of 0.86 (95 per cent CI 0.79–0.94;  $z = 3.44$ ,  $p = 0.001$ ) on current smoking at follow-up.

## 9. Components to consider for scale-up in MENA

- The training manuals;
- Peer-to-peer approach;
- Partnership between academic institution and schools.

## 10. Resources

The Triple A lessons in the manual are designed for trained Triple A peer leaders from years 10 or 11 to deliver to younger peers, for example year 7 students.

- Triple A Program Peer Leader Manual 3rd Edition 2013
- The Triple A Kit includes the following resources:
  - o Triple A Train-the-Trainer Guide for health professionals
  - o Triple A Peer Leader's Manual
  - o Triple A DVD (including three videos and programme resources)

Copies of the resources could be obtained by contacting Dr Smita Shah, Director of Primary Health Care Education and Research Unit, Australia. Information about the program is on the The University

of Sydney website: <http://sydney.edu.au/medicine/public-health/salsa-triple-a/>  
<http://www.facebook.com/TripleAProgram>

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- <http://www.asthma.org.au/Programs/TripleAProgram.aspx>
- <http://www.who.int/trade/glossary/story096/en/>

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