8th Meeting on the WHO European Childhood Obesity Surveillance Initiative

Dubrovnik, Croatia, 18—20 May 2015
ABSTRACT

The WHO Regional Office for Europe has established a European-wide standardized childhood obesity surveillance initiative (COSI) in several countries in the European Region. The programme involves routine measurement of height and weight among primary school children aged 6–9 years, in order to generate data on prevalence and trends in overweight and obesity to enhance understanding of the progress of the epidemic in this population group and to permit inter-country comparisons within the European Region.

A first data collection took place during the school year 2007/2008, the second round during the school year 2009/2010, the third round during the school year 2012/2013 and the fourth round is planned for the school year 2015/2016. Twenty-eight Member States took part in the 8th COSI meeting, convened in Dubrovnik between 18 and 20 May 2015, to share findings from the third round of data collection, prepare for the next data collection round and, more generally, discuss the future organization, possible expansion and sustainability of the Initiative.

Keywords

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Background

The WHO Regional Office for Europe has established a European-wide standardized childhood obesity surveillance initiative (COSI) in several countries in the European Region. The programme involves routine measurement of height and weight among primary school children aged 6–9 years, in order to generate data on prevalence and trends in overweight and obesity to enhance understanding of the progress of the epidemic in this population group and to permit inter-country comparisons within the European Region.

A first data collection took place during the school year 2007/2008, the second round during the school year 2009/2010, the third round during the school year 2012/2013 and the fourth round is planned for the school year 2015/2016.

Thirteen countries participated in the first data collection round: Belgium (Flemish region), Bulgaria, Cyprus, Czech Republic, Ireland, Italy, Latvia, Lithuania, Malta, Norway, Portugal, Slovenia and Sweden. Four new countries, Greece, Hungary, Spain and the former Yugoslav Republic of Macedonia, participated in the second data collection round. Four countries (Albania, Republic of Moldova, Romania and Turkey) joined COSI with their participation in the third data collection round. In the fourth round at least five more countries will join, namely Serbia, Kazakhstan, Poland, Croatia and Austria.

The 8th COSI meeting was convened in Dubrovnik between 18 and 20 May 2015 with the following objectives:

- To prepare for the next data collection round (2015-16);
- To discuss the expansion and sustainability of COSI;
- To discuss the WHO support to data collection, analysis and reporting;
- To plan forthcoming reports and publications;
- To discuss interaction and collaboration with the Health Behaviour of School-aged Children (HBSC), the health promoting schools network (SHE) and others;
- To discuss the revision and validation of different templates/questionnaire and procedures;
- To discuss the country results/analysis from the third round.

Opening and welcome addresses

On behalf of the meeting host, the Croatian Institute of Public Health, Dr Sanja Music Milanovic issued a warm welcome to Croatia and conveyed Croatia’s appreciation of joining the COSI network. She highlighted Croatia’s historical contribution to public health and, in particular, the role of Dr Andrija Stampar, a Croatian doctor specializing in social medicine who was involved in the establishment of the World Health Organization. She also highlighted the high level of political support for Croatia’s involvement in COSI and its efforts to tackle childhood obesity.

The Croatian Minister of Health, Dr Sinisa Varga, addressed the conference by video link. He welcomed participants to Croatia and referred to Dubrovnik’s long heritage of public health and prevention, with the early introduction of quarantine facilities. The country is continuing its efforts to promote health, notably through its ongoing Healthy Living Programme. He stressed the government’s commitment to COSI and underlined that there is clear recognition that data is necessary to guide policy.

On behalf of WHO Regional Office for Europe, Dr João Breda welcomed all participants to the eighth COSI meeting. He particularly welcomed the high level of participation – 52 participants
took part and 28 Member States were represented – and underlined that this is indicative of COSI’s growing strength. He thanked the Croatian Ministry of Health and the Croatian Institute of Public Health for hosting the meeting and praised the close collaboration with WHO in preparing the meeting. He also welcomed the participation of the Minister of Science, Education and Sports and the Mayor of Dubrovnik in the meeting – illustrating the high level of political support for tackling this issue. Childhood obesity remains one of the greatest challenges facing the European Region and data collection is crucially important so that changes over time and differences between countries or sub-regions can be monitored. Currently there is uneven progress towards the global nutrition and noncommunicable disease (NCD) targets for 2025 across the European Region. That is why the WHO Regional Office will support Member States, as requested, through the current European Food and Nutrition Action Plan and the forthcoming European Physical Activity Strategy. The support of the European Commission for this regional Initiative, which is unique globally, is vital.

Professor Davor Stimac, President of the Croatian Society for Obesity and Director of University Hospital Rijeka, added his welcome to all participants. He described recent changes in the Croatian Society for Obesity, reflecting the increasingly multidisciplinary and participatory efforts to tackle overweight and obesity in this country where around one-third of school children are overweight or obese.

The Mayor of Dubrovnik, Dr Andro Vlahusic, welcomed all participants to Dubrovnik and thanked the hosts for organising the meeting. As a diabetologist by training and as a former Minister of Health, Dr Vlahusic is acutely aware of the problem of childhood obesity and has been involved in strengthening public health promotion efforts through multidisciplinary and multisectoral action.

The Minister for Science, Education and Sports, Dr Vedran Mornar, added a final word of welcome. Tackling obesity in schools is a key priority for the Ministry and it is important that the issue is tackled with scientific rigour and on the basis of actual data. Professionals working in the fields of science, legislation and policy must come together and collaborate on solutions. He conveyed his thanks to the Croatian Institute for Public Health for the cooperation on many joint projects relating to children, diet and physical activity. He also thanked WHO and all Member State representatives for their participation.

All participants introduced themselves and their involvement in COSI. A full list of participants is given in Annex 1.

Conclusions of the Latvian presidency High Level Conference on Healthy Lifestyles: Nutrition and Physical Activity for Children and Young People at Schools

Iveta Pudule, Centre for Disease, Prevention and Control, Latvia presented a summary of the conclusions from the High Level Conference on healthy lifestyles, focusing on nutrition and physical activity in schools, which took place in Riga on 23-24 February as part of the Latvian presidency of the EU.

The conference, organised by Latvia with the support of the European Commission, aimed to assess the progress of EU Member States in implementing nutrition and physical activity strategies and to discuss the future challenges in order to enhance implementation of policies to reduce childhood obesity and promote healthy lifestyles.

Nearly 300 participants discussed the issues over two days, and underlined the importance of policies in multiple sectors that are both collaborative and coherent in working towards the same
goals. Key obstacles to arriving at a coherent policy approach include the need for complex and difficult-to-implement solutions, the requirement to recognize that it can take a long time to achieve coherence (representing a very different timeline to political sectors) and the challenges of working in cross-sectoral collaboration.

The conference conclusion highlighted the enormous problem of childhood obesity and the pressing need to take action. The recommendations for action and best practice can be summarised as:

- Ensure that policies do not inadvertently increase health and social inequalities.
- Continue to implement school food policies that ensure healthy options are available at schools and kindergartens; Consider implementing free school meals.
- Design school food policies for success by encouraging quality and nutritious food with standards, including food and nutrient-based targets, especially to limit nutrients such as salt and sugar, and by using additional measures of quality.
- Implement policies (informed by best practices) that ensure a healthy environment at schools and which encourage healthy eating and physical activity.
- Incorporate health, nutrition and physical education into the school curriculum, and support the practical implementation of the curriculum by increasing the level of sports and physical activity inside and outside of schools.
- Consider using evidence-based modern technologies and innovative methods to educate and inform children, teachers and parents about healthy lifestyles; involve health care professionals in the development of new modern technologies and health apps; take into consideration whether using such technologies would result in increased sedentary behaviour.
- Implement policies to limit the marketing of foods high in salt, fats and sugar, bearing in mind that voluntary codes have not been sufficient in reducing exposure of children to advertising, and stronger government led actions are needed; the WHO Regional Office for Europe Nutrient Profile Model could be used as a tool to help develop policies.
- Strengthen and implement monitoring and evaluation for existing and future nutrition and physical activity policies, and wherever possible use measures that will allow for cross-comparison in all EU countries.
- Continue to promote reformulation of foods and beverages to reduce trans fats, added sugars and salt in processed foods; Couple with efforts to increase consumption of fruits and vegetables and water through other policies.
- Engage and empower local government in creating, implementing and monitoring policies for healthy lifestyles.
- Multi-stakeholder action is a key component of ensuring success, however this cannot replace coordinated action from government, which would include the implementation of a health-in-all-policies approach.
- Ensure that the funding for prevention policies is commensurate with the size of the problem.

Further information about the conference, including reports, presentations and videos are available online:
http://www.vm.gov.lv/en/what_is_new/presidency_events/43_high_level_conference_healthy_lifestyles_nutrition_and_physi/
Discussion

João Breda emphasised the importance of this event. Such High Level Conferences focusing on childhood food, nutrition and health are rare. The outcome statement is particularly welcome, with its powerful, action-oriented messages. The conference conclusions once again reinforce the tremendous importance of surveillance and initiatives such as COSI.


João Breda gave an overview of two key WHO Regional Office for Europe initiatives. Against a background of increasing NCDs and ongoing nutritional challenges, recent commitments – including the Rome Declaration on Nutrition, the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition, the UN General Assembly resolution on prevention and control of NCDs and the Global NCD Action Plan – clearly establish a mandate for WHO’s action on diet and physical activity.

Countries have adopted clear policy frameworks for nutrition and NCDs – both at global and European levels – and have agreed to work towards six global nutrition targets¹ and nine voluntary NCD targets² by 2025. The 2014 Global Status Report on Noncommunicable Diseases highlights that rapid progress will be required if the NCD targets are to be met. WHO estimates of overweight and obesity among adults (18 or over) across the European region show that the trend continues to go in the wrong direction (Figures 1 and 2) and all 30 countries with comparable data on insufficient physical activity among adolescents have prevalence rates over 70% (Figure 3).

Figure 1 Overweight among 18+ year-old adults

¹ 40% reduction in stunting in under-5s; reduce and maintain childhood wasting to less than 5%; 50% reduction of anaemia in women of reproductive age; 30% reduction in low birth weight; 0% increase in childhood overweight; increase rate of exclusive breastfeeding to at least 50%.

² 25% reduction in premature mortality for NCDs; 80% coverage of essential NCD medicines and technologies; 50% coverage drug therapy and counselling; 0% increase in diabetes and obesity; 25% reduction in raised blood pressure; 30% reduction in tobacco use; 30% reduction in salt/sodium intake; 10% reduction in physical inactivity; 10% reduction in harmful use of alcohol.
Recent WHO and UK Health Forum projections on overweight prevalence by 2030, probably representing a worst-case scenario, show a continuing tendency to increase.\(^3\) Data from COSI on the prevalence of obesity and overweight and school age children (Figure 4) and other data on under 5s (Figure 5) clearly show the scale of the problem across the region, as well as highlighting data gaps.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure4.png}
\caption{Prevalence of overweight among boys aged 7 years, COSI 2010, by country\(^4\)}
\end{figure}


\(^4\) Bulgarian data are from 2008.
Self-reported data on adolescents, from the Health Behaviour in School-aged Children (HBSC) survey show overweight (including obesity) clearly increasing between 2002 and 2010, and the increase has been sharper in the eastern part of the European region.

In addition to its relationship with obesity, diet is known to be a major risk factor in Europe, with 48 and 53 (of 53) countries exceeding recommended salt and saturated fat intakes respectively. Sugar intakes are also high – in 24 countries, 25% of 15-year-old boys consume sugary drinks on a daily basis. Although countries are implementing policy actions, much greater progress will be needed to meet the NCD targets (Figure 6).
It is against this backdrop that, in 2013, European Ministers issued the *Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020*. The Declaration issued a clear mandate to the Regional Office to develop a new food and nutrition action plan and a strategy for physical activity.

There are five priority areas in the *European Food and Nutrition Action Plan 2015-2020*:

1. Create healthy food and drink environments
2. Promote the gains of a healthy diet throughout life, especially for the most vulnerable groups
3. Reinforce health systems to promote healthy diets
4. Support surveillance, monitoring, evaluation and research
5. Strengthen governance, alliances and networks to ensure a health-in-all-policies approach.

It is clear that, as a surveillance initiative, COSI falls within the fourth priority area and the reference to the Initiative in the Action Plan underlined its importance.

The Regional Office has issued a number of practical tools to help Member States implement the Action Plan. These include a recently launched nutrient profile model, a report on price policies and guidance on eliminating *trans* fats. WHO headquarters has issued some important guidance on sodium and sugar intakes.

The Vienna Declaration also gave the Regional Office the mandate to develop a *European Physical Activity Strategy*. One of the voluntary global NCD targets is for a 10% reduction in

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physical activity and WHO has issued global recommendations on physical activity, recommending 150 minutes per week. The added value of a specific physical activity strategy is that the it will establish physical activity as a policy field in its own right, apply previous global WHO initiatives to the regional level and provide an impulse to policy-making in Member States.

The mission of the forthcoming *European Physical Activity Strategy* is, therefore, to inspire governments and stakeholders to:

- Promote physical activity and reduce physical inactivity/sedentary behaviour.
- Provide equal opportunities for physical activity for everyone.
- Remove barriers to physical activity and reduce sedentary environments.

The Strategy is guided by a series of guiding principles and is made up of five priority areas, each with a series of key objectives.

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Key Objectives</th>
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<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td>• Provide high-level leadership by health sector</td>
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<tr>
<td></td>
<td>• Establish coordination mechanisms, promote alliances</td>
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<tr>
<td><strong>Children/adolescents</strong></td>
<td>• Promote physical activity during pregnancy and early childhood</td>
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<tr>
<td></td>
<td>• Promote physical activity in preschools and schools</td>
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<td></td>
<td>• Promote physical activity beyond school based settings</td>
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<tr>
<td><strong>Adults</strong></td>
<td>• Reduce car traffic, increase walkability and bikeability</td>
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<td></td>
<td>• Provide opportunities and counselling at the workplace</td>
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<td></td>
<td>• Integrate physical activity into prevention, treatment and rehab</td>
</tr>
<tr>
<td></td>
<td>• Improve access to PA facilities and offers</td>
</tr>
<tr>
<td><strong>Older people</strong></td>
<td>• Improve the quality of advice by health professionals</td>
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<tr>
<td></td>
<td>• Provide infrastructures and appropriate environments</td>
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<td></td>
<td>• Involve healthy but inactive older people in social physical activity</td>
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<tr>
<td><strong>Monitoring, evaluation and research</strong></td>
<td>• Strengthen surveillance systems and evaluate policies</td>
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<tr>
<td></td>
<td>• Strengthen the evidence base for physical activity promotion</td>
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The Strategy is innovative in its structure (focusing on intersectoral action) and in the measures proposed (participatory approaches, use of technology, financial measures and extended health education about physical activity). Following a series of consultations, the Strategy will be presented for adoption at the Regional Committee meeting in Vilnius in September 2015.

**Discussion**

The global target for no increase in obesity was criticised as being unambitious and, therefore, conveying the message that the *status quo* is acceptable. This is a difficult issue, because, the global targets have to be agreed by all countries and the target has to be relevant to a wide range of situations including in many countries where data are poor or non-existent. Secondly, stopping the increase has to be the first step towards success – it is important to remember that current trends in obesity are much worse than the predictions from even a few years ago.

Further information was sought on the assumptions used in WHO’s latest predictions for overweight and obesity. As with all modelling work, there are many assumptions involved
(details can be obtained from the Regional Office or the UK Health Forum), and this is why it is also vital to have good quality, real data.

There was discussion of the importance of developing the skills of professionals across Europe who have to deal with obesity and ensuring that the right skills mix is available to help health systems cope with these problems.

**EU Action Plan on Childhood Obesity**

Mihaela Armanu, from DG SANTE at the European Commission, presented an update on the *EU Action Plan on Childhood Obesity 2014 – 2020*.

All EU Member States share the tremendous challenges posed by overweight, obesity and physical inactivity. The prevalence of obesity and physical inactivity in children is particularly worrisome and widening socioeconomic inequalities give cause for great concern. As well as the impact on quality and expectancy of life, there is a huge impact on lost productivity (an estimated 2.8 million premature deaths per year from causes associated with overweight and obesity) and growing pressure on health systems (7% of EU health budgets is estimated to be spent on diseases linked to obesity).

In response, EU Health Ministers agreed in 2013 on the need for an action plan as an initiative of the Irish Presidency. At the High Level Group meeting in Athens in February 2014, the Action Plan received the agreement of Member States. As a High Level Group initiative, rather than a Commission document, the Action Plan is voluntary for Member States. It will build on the *EU Strategy on Nutrition, Overweight and Obesity* with the overarching goal of contributing to halting the worrying rise in childhood obesity by 2020. There will be a midway review of progress in 2017, to ensure that the actions are relevant to that overarching goal.

The two overarching actions in the Action Plan:

- Supporting Member States in developing their policies to tackle childhood obesity. These are expected to vary across countries in order to best address local needs.
- Member States can share good practices and develop tools to monitor their national policies on childhood overweight and obesity through a Joint Action.

These overarching actions are accompanied by eight areas of action, each with a main priority and an operational objective (See Table).

<table>
<thead>
<tr>
<th>Area of action</th>
<th>Main priority</th>
<th>Operational objectives</th>
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| Support a healthy start in life | To ensure an effective approach at an early stage as possible | Increase the prevalence of children that are breastfed.  
Promote timely introduction of complementary foods.  
Encourage healthier food habits and physical activity in pregnant women, infants, toddlers and preschool children; include vulnerable groups and respect ethnic minority background.  
Further improve the effective response of the health care sector. |
| Promote healthier   | To establish children's health options                                      | Provide the healthy option and increase daily consumption of healthy options |

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12 With reserve by the Netherlands.
<table>
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<tr>
<th>Environments, especially at schools and pre-schools</th>
<th>Health as a priority at schools</th>
<th>Fresh fruit and vegetables, healthy food and water intake in schools (with a targeted focus on schools in underprivileged districts). Improve the education on healthier food choices and physical activity at schools. Develop and manage initiatives to care for overweight children and prevent them making the transition to obesity. Improve a physical activity friendly kindergarten and school environment.</th>
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</thead>
<tbody>
<tr>
<td>Make the healthy option, the easier option</td>
<td>To ensure a wide availability of healthy food choices to children</td>
<td>Make the healthy choice the easy choice. Increase food reformulation actions. Promoting drinking water. Continue to address portion size.</td>
</tr>
<tr>
<td>Restrict marketing and advertising to children</td>
<td>To limit the exposure of children to advertisement of food/drinks high in fats, sugars and salt</td>
<td>Ensure that schools are free from marketing of less healthy food and drink options. Define nutrition criteria to use in a framework for marketing of foods to children. Set recommendations for marketing foods via TV, internet, sport events etc. Encourage media service providers to set up stricter codes of conduct on audiovisual commercial communications to children regarding foods which are less healthy food options.</td>
</tr>
<tr>
<td>Inform and empower families</td>
<td>To inform and educate parents with children on their daily food and health choices</td>
<td>Educate and support families to make healthy changes to their diets and promote physical activity including related issues with specific focus on lower socio economic groups. Promote the importance of spending time together either in a family or as friends. Make the healthy choice the easy choice for families. Increase the intake of healthy foods (especially fruits and vegetables, milk and water) in parents and children in local communities, with a special focus on disadvantaged regions and communities. Support disadvantaged communities to help reduce food poverty. Encourage professional health bodies to develop guidelines to strengthen their training on NUPA. Encourage/support families, professionals and day-care centres to integrate physical activity in the children’s daily routine.</td>
</tr>
<tr>
<td>Encourage physical activity</td>
<td>To increase the regular participation of children in sports or other physical activity</td>
<td>Strengthened promotion of physical activity policies. Supportive role of urban design and planning in order to reduce afterschool sedentary behaviour. Increase the awareness of and participation in the European Week of Sport (starts in 2015)</td>
</tr>
<tr>
<td>Monitor and evaluate</td>
<td>Better monitoring and evaluation of children's nutritional status and behaviours</td>
<td>Improve the reporting on the availability, nutritional status, food quality, food consumption habits, and levels of physical activity in different age and socioeconomic groups. Sharing of good ideas and practices regarding the monitoring of policy initiatives.</td>
</tr>
</tbody>
</table>
Monitoring in order to strengthen obesity prevention.
Develop a database on childhood obesity.
Establish harmonised monitoring of school nutrition in EU (in primary and secondary schools).
Establish annual monitoring of the physical activity of the students as a part of regular sports curricula in primary and secondary schools.

<table>
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<tr>
<th>Increase research</th>
<th>Up-to-date and comparable information and data</th>
<th>Increase the financial support by national and EU research programmes. Ensure quality and conformity of research projects to existing EU policy objectives and approaches.</th>
</tr>
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</table>

The Council Conclusions on nutrition and physical activity were adopted in the same year, inviting Member States to use the Action Plan on Childhood Obesity as guidance and to promote good practices. The Commission was asked to report on progress to the Council in 2017 and again in 2020.

In order to track whether progress is being made a monitoring mechanism was established by WHO, the Commission and Member States. A total of 66 monitoring indicators have been defined, including six overarching indicators and indicators for each area of action. Of the indicators, 18 are highly available and will be for immediate collection, 26 are available in some countries and will be collected in a second phase, and 22 further indicators will require further work from WHO and Member States that will for the final phase of data collection.

Data for the 18 first-phase indicators -- which have been sent to Member States for validation – will provide a snapshot of the current situation and will enable assessment of whether progress is achieved.

Further information is available on the Commission website.  

**Discussion**

There was some discussion on what the figure of 3 to 7% of Western health budgets spent on diseases linked to overweight and obesity relates to. Further information is required on what is included in or excluded from this figure.

Research appears as an area for action, but it was pointed out that there are very few calls for research relating to children in Horizon 2020. There will be a budget line for food and nutrition in Horizon 2020 and this will be relevant.

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13 % overweight and obesity among children aged <5 years; % overweight and obesity among children aged 6-9; % overweight and obesity among children aged 11, 13 and 15; % infants exclusively breastfed for first six months of life; % population <18 years consuming sugar-sweetened beverages on a daily basis; % who report daily moderate-to-vigorous physical activity among 11- and 15-year olds.


15 See the table on page 29 of WHO Europe report *The challenge of obesity in the WHO European Region and the strategies for response* [http://www.euro.who.int/__data/assets/pdf_file/0010/74746/E90711.pdf](http://www.euro.who.int/__data/assets/pdf_file/0010/74746/E90711.pdf)
There was discussion of the current state of data collection in EU candidate countries and their need for support to improve data collection.

It was emphasized that COSI will play a vital role in guiding policy actions. Although we currently have enough data to know that action is needed, the data provided by COSI is an essential part of the picture and will help build evidence on what policies are interventions are effective.

Dr Breda gratefully acknowledged the Commission’s support for COSI. By working together, WHO and the Commission have been able to improve support to Member States.

**WHO Commission on Ending Childhood Obesity**

On behalf of the Secretariat for the Commission, João Breda presented an overview on the progress of WHO’s Commission on Ending Childhood Obesity. This high-level Commission, reporting directly to WHO Director General, was announced at the 67th World Health Assembly. It is tasked with producing a consensus report specifying approaches and combinations of interventions likely to be most effective in different contexts around the world. The members of the Commission are very high-profile individuals and the Commission’s work is supported by two *ad hoc* working groups consisting of experts from a broad range of relevant disciplines.

An *ad hoc* working group on science and evidence aims to provide advice to the WHO Director General on epidemiology, health and economic impacts, interventions, monitoring and surveillance. A second working group is charged with providing advice on an implementation and accountability framework, mechanisms to monitor recommended policy options and the feasibility of monitoring, while ensuring that the reporting burden on countries is minimized. Each working group was asked to produce a report and a draft set of recommendations.

The conceptual framework guiding the Commission’s work recognises the importance of three areas: preconception and pregnancy; infant and young child; older child and adolescent.

An interim report has been published, containing a number of policy options:

- **Tackle the obesogenic environment** – Reduce the intake of unhealthy foods and promote the intake of healthy foods and non-alcoholic beverages by children and adolescents; Reduce sedentary behaviours and promote healthy living through physical activity in children and adolescents.

- **Address critical elements in the life-course** – Integrate and strengthen current guidance for preconception and antenatal care with guidance for NCD prevention; Integrate actions related to healthy eating and feeding practices, physical activity and sleep behaviours with current guidance on child-care during the first five years of life; Strengthen the infrastructure for implementing comprehensive school programmes that promote healthy eating, physical activity and reduce sedentary behaviours.

- **Treat children already affected by obesity** – Health care system should provide family-based/care-environment-based multi-component lifestyle weight management services to children and young people affected by obesity.

The interim report has been issued for consultation comments can be submitted at [http://www.who.int/end-childhood-obesity/en/](http://www.who.int/end-childhood-obesity/en/) or sent by email to echo@who.int until 5 June. Regional consultations are planned and the European Region will hold a consultation event in
Malta in October. There will be a further on-line consultation on the draft final recommendations between July and October 2015.

**Discussion**

João Breda encouraged participants to read the report and to respond to the consultation. It is important to ensure that the European perspective is well represented in the final report.

The importance of inclusion of nutrition in the education of health professionals was raised, as well as training for other relevant professionals (e.g., teachers). It was suggested that inclusion in the Commission’s report would be helpful to push forward action on this issue.

**The GloboDiet initiative to support dietary surveillance and research on diet-related health, safety and societal challenges**

On behalf of the GloboDiet Consortium, Dr Nadia Slimani, from International Agency for Research on Cancer (IARC), France, presented the IARC-WHO GloboDiet initiative.

In order to respond to the global health challenges of a largely diet-driven NCD burden and a major detrimental nutrition transition, against a backdrop of ageing populations and globalization, common means and frameworks are needed for more concerted actions. One prerequisite to be able to establish more concerted action is more comparable dietary data.

The GloboDiet initiative, thus, aims to:

- pilot the implementation of the IARC/DEX standardized dietary methodology in national nutrition surveillance systems in selected pilot countries in Europe and elsewhere;
- provide standardized dietary resources of multiple interests and with no equivalent worldwide;
- provide a double UN-WHO Research (IARC) and policy-makers umbrella (WHO).

An inventory of the main European or international nutrition and/or health surveillance systems identified several relevant systems and GloboDiet is intended to complement those other systems, in order to provide a strong evidence base for policy decisions.

GloboDiet is a software programme that was initially developed in 1995, for the EPIC study on cancer across EU countries, as a highly standardized 24-hour dietary recall method. The methodology is based on a proven standardized concept and a flexible structure. The process is largely automatic, guided by the software.

The preparation phase of implementing this methodology is quite complex. Country-specific versions require about 70 databases and 10-15 person months to build. It is important to recognize that, if the methodology is to be scaled up in different countries, this time investment is required. A clear process has been developed, following a proven stepwise approach, of a preparatory phase followed by training the trainers, validation, implementation and then extension.

There are seven European countries (Austria, Belgium, France, Germany, Switzerland, Netherlands and Malta) where the GloboDiet methodology is used in national monitoring surveys and other countries are involved as observers (Ireland, Norway, Greece, FYR
Macedonia, Portugal, Slovenia, Spain). There is clearly great potential for expansion, with the potential to be useful in addressing important policy issues.

The potential of GloboDiet methodology can be illustrated using the EPIC study example. Using GloboDiet it was possible to provide figures on the percentage of energy derived from different types of fatty acids and to provide the first comparable data on fruit and vegetable groups (e.g., leafy vegetables, root vegetables, cabbages and other cruciferous, etc.) across countries. These findings were important for steering research priorities.

GloboDiet can play a role in developing the research infrastructure that is necessary to take forward food and health issues in Europe. Dr Slimani thanked all the partners involved.

In discussion, Dr Slimani clarified that there is no charge for the software but that IARC charges real costs to countries for the person months required (estimated at between 25,000 and 50,000 euros).

**WHO Childhood Obesity Surveillance Initiative (COSI)**

Dr Joop van Raaij, National Institute for Public Health and Environment (RIVM), Netherlands, gave a brief overview of COSI and highlighted some of the Initiative’s achievements.

The data collected through COSI can be split into main data (height, bodyweight, age, body mass index (BMI), Z-scores and prevalence rates) and additional data (school data and family data).

In relation to the main data there have been, to date, two important publications.\(^{16,17}\) The additional data has also resulted in an important paper on the school nutrition environment\(^{18}\) and on family data.\(^{19}\) Individual countries have also initiated papers using international COSI data\(^{20,21}\) in addition to country publications.

The protocol for data collection has been clearly set out, and while there is room for small deviations from the protocol, it is important to bear in mind the potential implications for data comparability. The report of the implementation of the first two rounds\(^{22}\) is essential reading for new or potential COSI participating countries.

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\(^{21}\) Lissner L, Wijnhoven TMA, et al. Socioeconomic inequalities in childhood overweight: heterogeneity across five countries in the WHO European Childhood Obesity Surveillance Initiative (COSI) [Submitted].

Country presentations

COSI investigators presented their national experiences, including preliminary results of third round collection and a summary of challenges encountered as well as pointers to new potential countries. The website will also have all open access international and national papers on it. In line with WHO policy, participants are urged to publish papers in open access journals.

Bulgaria

Professor Vesselka Duleva, National Centre of Public Health and Analyses, gave an overview of COSI in Bulgaria. Having participated in the first round in 2008 (2,511 seven year olds), Bulgaria participated in the third round in 2013 (3,353 seven year olds), and in both rounds the team collected the main data and the additional questionnaires on schools and families.

Data from the school questionnaires, carried out in 2008 and 2013, showed clear changes in the school environment. A major policy initiative had taken place in the country during that period. There was a significant increase in the inclusion of nutrition in the school curriculum, provision of free vegetables and provision of free fruit. The national ordinance for healthy nutrition at school was developed and applied in all Bulgarian schools. There were also marked differences in the kinds of foods or beverages that pupils could obtain on school premises (e.g., increase in fruit and vegetables, decrease in sugary drinks and in sweet and savoury snacks).

The preliminary 2013 data suggest that prevalence is stable in girls (no statistically significant increase) and that there had been a small increase in overweight and obesity among boys.

The lessons learned from implementing two rounds of data collection included the importance of good national coordination and cooperation between participating bodies, the usefulness of passive informed parental consent, and the need to standardize data collection and management (including by careful training of fieldworkers) and to translate and disseminate the protocol and manual. Important factors to ensure the quality of data collected include exact measurements and carefully filled forms (keeping paper records in case), careful data entry, checking and cleaning, along with periodic monitoring and supervision.

Among the difficulties encountered were the short timeframe for data collection, sudden and/or major changes in governmental policy and priorities (which can lead on to changes in available human resources), the time-consuming nature of double data entry and the availability of financial resources.

In discussion, the issue of the financial costs for participating in a COSI data collection round was raised. Professor Duleva commented that it is not easy to compare costs between countries, because of the different approaches used. Bulgaria used existing resources for the data collection so the financial costs were associated with logistics, equipment, data entry and some Ministry of Health costs.

Croatia

Croatia has not yet participated in COSI data collection, but Dr Sanja Music Milanovic, Croatian Institute of Public Health, and Mr Vitomir Spasovic, kinesiologist, presented some innovative developments to promote physical activity.
Dr Milanovic presented the polygons for physical activity in schoolchildren (lower grades). This was developed by the Croatian Institute of Public Health to tackle the problem of insufficient physical activity in schools, and specifically the lack of facilities. This didactic set of 25 elements was designed to be used in a 30 m² room, but can also be left set up so that 10 minute programmes can be carried out every day. In addition to providing 50 minutes of physical activity per week, it also helps establish the habit of doing some physical activity every single day. The Ministry of Health has purchased 120 sets and the Ministry of Education organised training for teachers, to introduce the sets in schools with no gym facilities. This has proved very successful.

Mr Spasovic introduced the Choose Sport project with 7- to 10-year-old children. In order to improve children’s participation and enjoyment in sport, and recognizing that often the choice of sport to take up is quite randomly based on friends or parents’ choices, the Choose Sport project helps children to make a selection and uses new methods to promote their enjoyment and motivation.

The three elements of the project include training of primary school teachers, fun demonstrations of different sports (often by peers), and educational materials that feature a group of characters known as the Kid Athletes. In an evaluation children rated the project highly and confirmed participation in an enjoyable sport, and teachers confirmed these findings.

Another initiative disseminated true stories about successful Olympians to children through the medium of bedtime stories, with the aim of developing interest in sport participation and fundamental human and social values in pupils.

Czech Republic

Professor Marie Kunešová, Institute of Endocrinology and Charles University, Prague, described the Czech experience with COSI. Data were collected for all three rounds, by paediatricians, during the compulsory preventive check-up for seven year olds. As well as main data collection, the school and family questionnaires were administered. The paediatricians follow the COSI protocols and, as well as routine weight and height measurements, they also take children’s waist and hip measurements, for which training was provided.

The preliminary data for the third round suggest a slight decrease in prevalence of overweight and levelling off in prevalence of obesity among boys and a decrease in prevalence of overweight in girls but an increase in obesity. Data from the national survey, conducted since 1951, show the trend – the highest prevalence was seen in 2001, since then there has been some stabilization.

A key lesson from the Czech experience is the importance of the support of a good international team and good cooperation within a broad multidisciplinary national team (including the Obesity Management Centre at the Institute of Endocrinology, Kutná Hora paediatric clinic and the faculty of science at Charles University and paediatric clinics across the country). The Czech results have been published in the national medical journal and the results have also been

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23 2,489 children in 2013.
discussed in some books and masters’ theses and in the report for the Czech Ministry of Health about the Czech COSI results.

In discussion, the slightly different methodology for data collection – through the use of paediatricians – was highlighted. The data have been very influential and work is now ongoing on national plans on nutrition, physical activity and obesity.

There was some discussion of the observed levelling off in prevalence, and whether there are practical lessons to be learned. It does appear that awareness of the issues has greatly improved and there has been action to improve nutrition in schools, but more detailed analysis is necessary to evaluate its contribution. Whenever any levelling off is observed it is vital to look beyond the headline figures and to look at different socioeconomic groups – in many cases inequalities are widening.20

There was also discussion of the potential impact of surveillance itself on prevalence. It is clear that those participating in data collection can become more aware and changing perceptions may lead to other changes. Data measurement can, in this sense, be seen as an intervention.

**Estonia**

Kristina Köhler, Ministry of Social Affairs, described the current arrangements for monitoring childhood obesity in Estonia.

The current data sources are the HBSC self-reported surveys for 11-, 13- and 15-year-old children, aggregated data on measurements by school nurses on children in 3rd, 7th and 9th grade for the National Health Insurance Fund (NHIF), and personalized data collected in the E-health system (collected by school nurses or family doctors on 0-19 year olds).

Recent data from the NHIF show that prevalence of overweight has been increasing – with ~60% increase in prevalence rates between 2004 and 2014.

There are a number of challenges with the E-health system. The data sent to NHIF has much higher coverage than the data sent to E-health system. Upon investigation it was discovered that school nurses are much more aware of their obligations to send aggregated children’s measurements to NHIF (contract with NHIF) than they know their legal obligations to send the collected individual level data to the E-health system. With E-health data there are also some issues with the data quality (data entry errors), there are no data about child’s class or school and the use of the data is complicated (an IT specialist needs to write script in order to use the data).

The proposed solutions to these challenges are:

- to train the school nurses, provide them with a manual and do school field trips (autumn 2015);
- to develop the e-health database in a way that the use of data is convenient and to apply automatic data quality checks at an approximate cost of €43,000 (early 2016);
- to pull data from the education registry to E-health or to manually link it with data from the education registry (negotiations with National Institute for Health Development in autumn 2015).
In discussion, the question of differences between current data collection and the COSI protocol was raised. One key difference is the timeframe for data collection – currently data is collected all year round.

There was some discussion about the importance of training whoever is doing the measurement. Some professionals may challenge the idea that they need training, so it can be useful to frame it in the context of quality control. In Estonia the school nurses had previously asked for training in measurement.

**Greece**

Dr Maria Hassapidou, ATEI-Thessaloniki, presented the preliminary results of the COSI 2013 data collection in Greece. Before presenting the results she underlined the vital importance of a good country coordination team.

The 2013 data was collected by 65 dietitians who were trained at ATEI Thessaloniki and worked in pairs, with double entry of all data. The study was carried out under the auspices of the Ministry of Health and the Ministry of Education but was financed by the Hellenic Society for the Study of Obesity and the Department of Nutrition and Dietetics at ATEI Thessaloniki. The total costs were approximately €20,000 for equipment and other €20,000 in university costs.

A greater number of schools (186) were selected in 2013 than 2010 (150) in order to increase the sample size. Finally, 9,741 children, aged 7-8 and 9-10 were measured (cf. 5,701 in 2010).

The previous COSI round had highlighted Greece as having the highest prevalence of overweight (including obesity) and of obesity in 7 year olds and 9 year olds. The preliminary 2013 data appear to a decrease in mean BMI, a small increase in height and a decrease in the prevalence of both obesity and overweight. These changes may reflect a plateauing in the prevalence levels (possibly in 2010). During this period there have also been five new intervention programmes in schools.

The main message to potential new COSI members is that the data generated are tremendously valuable – in fact, the Greek Minister of Health had been very interested to hear these data a few days previously.

The discussion highlighted the different systems used to collect data in different countries. In Greece it was dietitians, while other countries used school nurses or paediatricians. It is important to look at the different possibilities for implementing COSI within existing systems as far as possible.

Dr Hassapidou clarified that the number of children measured was increased to ensure that an acceptable sample size was reached. With this, as with any other changes, it is important to consider the implications for comparability between data sets over time.

**Ireland**

Dr Mirjam Heinen, University College Dublin, presented the findings from COSI data collection in 2008, 2010 and 2012. Over 12,000 measurements have been done in 7-year-old children by graduate nutritionists.
The results over the three rounds suggest that the prevalence of overweight and obesity in Irish children aged 9 years seems to have stabilized and that prevalence of overweight and obesity in Irish 7 year olds seems to have fallen over time. When the results are stratified into disadvantaged and other schools, however, no decrease is seen in disadvantaged schools. It is important to communicate this point to policymakers.

When data on waist circumference were analysed, similar trends were observed. Because measurements were conducted on the same children some longitudinal data were also available, showing a small shift of decreasing levels of overweight and obesity.

The barriers and challenges experienced in the third round of data collection included the fact that the number of small schools had to be reduced, the need to train new nutritionists for every round, the requirement to reduce the numbers in each age category because new age categories were added to the survey, and funding challenges. Some positive lessons could be drawn from the highly competent fieldworkers, the motivated schools and well organised data collection.

A validation exercise is currently underway on the school and family questionnaires, testing different methods, and using a small sub-sample of 27 schools in the Dublin area.

Dr Heinen thanked all the project partners for their contribution.

There was some discussion of the emergence of longitudinal data from these Irish studies. Although it was not created intentionally, by measuring the same children in 2010 and 2012 the study has created a cohort of children and some of these children will continue to be measured. These longitudinal data should be very useful for hypothesis testing.

A number of different possible explanations for the decrease in prevalence in 7 year olds were discussed. While it is imperative to explore what factors are behind the apparent improvement, it is also vitally important to stress that there is no improvement in disadvantaged schools.

In relation to motivating schools, the approach had been to ensure that schools are thanked and that data are fed back to them. All schools are sent a card along with a summary, in accessible language, immediately after the measurements are finished. In addition, the final report of the last round was sent immediately after the launch of the report.

Italy

Dr Angela Spinelli, National Institute for Health, presented an overview of the Italian data collection for COSI (known as OKkio alla Salute in Italy).

The third round of data collection in 2012 involved 46,492 children (aged between 8 and 9 years). The large sample enabled representative samples to be measured in each region. Prevalence of overweight (according to IOTF cut-offs) was 22.2% and 10.6% were obese. There were sizable variations between regions (ranging from 15.9% to 48.7%).

Results from 2014 data collection round suggest a decrease is being observed, with 20.9% overweight and 9.8% obesity (cf. 23.2% and 12% respectively in 2008/9). In general, improvements in eating habits (according to the questionnaires) are being observed over time, and unhealthy patterns in relation to physical activity and sedentariness appear to be falling.
Great efforts are made to disseminate the results to motivate further participation and also to encourage changes in policy and practice. Three different types of report are produced for each data collection round by region – for schools, for health workers and for family. Short briefings (one four-pages and one two-pages) are also published for policymakers.

In response to a question, Dr Spinelli clarified that such a large sample was studied by using around 800 health workers from the regional and local offices. This group was very easy to train and already consider this to be part of their work. There was considerable expense in buying 500 scales and stadiometers, but the Ministry of Health financed this, recognising that it is an important investment.

**Latvia**

Dr Iveta Pudule, Centre for Disease Prevention and Control, gave an overview of three rounds of COSI data collection in Latvia.

In the absence of any suitable existing structures, the approach in Latvia was to buy equipment and to employ a company to do the field work and to train the interviewers. The target group was 7-year-old children, with 3,251 7 year olds from 190 schools in 2008, 2,838 (169 schools) in 2010 and 3,481 (140 schools) in 2012. An important issue to highlight is the impact that the timing of the measurements has on the number of children within the target age group, depending on how the school year is defined. In Latvia, if the measurements were conducted in the early autumn (as they were in 2012), 15.6% of children were still aged six. In contrast when surveys were conducted in spring there was high prevalence of children aged eight in 2008 – 25%, in 2010 – 30%.

The preliminary prevalence data show some signs of stabilization. In boys, the prevalence of overweight including obesity was 24.1% in 2012 compared to 24.9% in 2010 and 23.9% in 2009. In girls, prevalence in 2012 was 20.9%, compared to 21.2% in 2010 and 18.3% in 2009. When data are disaggregated by area, however, it can be seen that prevalence is continuing to grow in rural areas. Unlike much of Europe, in Latvia, currently, lower socioeconomic groups continue to have slimmer children than higher socioeconomic groups.

In the third round of data collection the school questionnaire found higher prevalence of obesogenic foods in the school environment, despite the existence of a regulation. This may be due to the fact that in earlier rounds the school questionnaire was completed by head teachers only, and they had relatively poor awareness of the reality in schools. In the last round, the questionnaire was filled in by head teacher together with a field-worker. Data on advertising in the school environment suggests, in contrast with 2010, fewer school environments are free of unhealthy food advertising in rural areas than in cities or towns. Data on routes to school being safe for children to walk or bicycle to school suggest improvements between 2010 and 2012 in all areas.

In discussion, the persistent presence of obesogenic foods in school environments was discussed. In some countries, attempts to eliminate sugar-sweetened beverages from schools had been thwarted by contractual agreements between the schools and the beverage suppliers. Latvia has an excise duty on sugar-sweetened beverages (introduction of which was helped by the support of the Minister of Finance) and is one of the only countries where consumption of these drinks is falling and the sale of sugar-sweetened drinks is prohibited in schools. Yet, still some sugary
drinks are sold. In relation to vending machines, specifically, there is also the option to change the products they contain – using the opportunity to promote consumption of healthier foods.

There was some discussion of the approach adopted, namely using a company to do the field work. This was financed through the state budget and the company was appointed using a public tendering process, so it may be a different company for the next round. The approach was found to be very cost-effective and reliable, and may cost even less than doing the field work directly or employing students.

**Lithuania**

Professor Aušra Petrauskienė, Lithuanian University of Health Sciences, gave an overview of prevalence and determinants of overweight and obesity in 7-8-year-old children in Lithuania.

Lithuania has participated in all three rounds of COSI data collection, using a cross-sectional study of a nationally representative sample of first-formers in randomly selected schools in all 10 districts. A total of 3,779 children, aged between 6 and 9 years, were measured and the IOTF cut-offs were used. Public health students help perform the survey during their practical placements, following specific training.

Between 2008 and 2013 the preliminary data suggest a statistically significant increase in the proportion of normal weight children. In boys, there was a decrease in normal weight and an increase in underweight, and non-statistically significant increases in overweight and obesity. In girls, there were no statistically significant changes. In general, the levels of overweight and obesity are not high and there remains a sizeable proportion of children who are underweight.

**FYR Macedonia**

Dr Igor Spiroski, Institute of Public Health, described the country’s experience with the third round of COSI data collection. In fact, Macedonia had also participated in the second round, having decided that, since the country had been collecting this data since 1990, it was time to generate comparable data.

The data collection targeted 6-year-old children and, using a sentinel approach on first grade children, measured 3,177 children in 237 classes in 109 schools (with rural/urban stratification) between March and June 2013. The examiners were recruited from the network of regional Centres of public health (separate from but connected to the Institute of Public Health) and the work was financed by the National Programme of Public Health (Ministry of Health). A passive consent approach was adopted. Data collection was facilitated by the fact that those involved in measurements were local people, and there was a real push on communication with schools and their management. The data management procedures were improved between rounds 2 and 3, due to better training and improved communication and awareness of the requirements (although the examiners do these measurements annually, they do not do COSI data collection annually).

In terms of the results it is important to point out that the third round targeted 7 year olds while the previous round had measured 6 year olds, with implications for comparability. With that caveat, the preliminary results suggest a decrease in overweight and obesity between the first graders in 2010 (34.7% overweight, 16.4% obese) and second grade children in 2013 (31.3% overweight, 13.7% obese).

26 From now on, the measurements will be on 7 year olds.
COSI data collection in FYR Macedonia has been a successful tool for promoting policy change. The Minister of Health has recognized the value of the data, and the introduction to national food based dietary guidelines refers to COSI data. A new rule book for nutrition standards in primary schools and kindergartens was introduced in 2014.

Malta

Dr Victoria Farrugia Sant’Angelo, Floriana Health Centre, described Malta’s participation in the third round of COSI data collection. Malta, which has been participating since the beginning of COSI, has three types of school in its primary school system (state, church run and fee-paying independent). Data was collected on 3,489 7-8-year-old children, from all the schools in the country and on the basis of passive consent, between April and May 2013.

For the data collection, standard equipment was used for all three rounds, with daily calibration of scales. Measurements were carried out by the school health service team and, thus, the only additional expense was payment for data input clerks.

The preliminary results suggest that overweight (including obesity) is higher in boys (38.4%) than in girls (36.7%). Over time the results suggest that, after a sharp increase between 2008 and 2010, there was a levelling off in overweight (including obesity) and in overweight alone by 2013. Obesity rates, however, have continued to increase (22.7% in boys, 22.2% in girls in 2013).

There have been various initiatives between 2008 and 2013 so the population has become much more aware of the issues. This year, a school nutrition policy has been introduced and the development of family-centred services for obese children is planned.

In discussion, the advantage that Malta has in being able to include all schools, thereby eliminating any chance of sampling error, was highlighted. In relation to socioeconomic status, further analysis is required but previous rounds found that prevalence was lower in children of parents with higher levels of education. Analysis by the three different types of schools for 2008 and 2010 found that fee-paying independent schools do not have a problem with overweight or obesity and the picture was worst in church schools. In the independent schools there is a longer school day and pupils are expected to do physical activity during breaks.

Norway

Jørgen Meisfjord, Norwegian Institute of Public Health, summarised the Norwegian Child Growth Study.

Through participation in three rounds of COSI data collection, around 10,000 8-9-year-old children have been measured by trained nurses. A sentinel approach has been adopted, using the same 125 schools each time. In 2012, 3,522 children were included.

The preliminary third round results suggest that overweight and obesity increased significantly between 2008 and 2010, but have since reduced between 2010 and 2012.\textsuperscript{27} Waist circumference was also measured and using waist-to-height ratio calculations the same trend was observed. The lowest prevalence of overweight was observed in the south and in more urban areas, compared to

\textsuperscript{27} Using IOTF cut-offs.
the north and rural areas. Again, waist circumference data confirmed the same pattern. In small towns overweight was more prevalent than in cities, even when corrected for parental education. Yet again, the waist circumference data show the same pattern. Analysis by parental marital status suggests that prevalence of overweight is higher in children of divorced parents than in those of married or never married parents.

The second part of the Norwegian Child Growth Study has examined growth patterns in early childhood among a retrospective cohort of 3,185 third graders. Using data from child health records, these children’s growth throughout the first eight years of their lives can be plotted. The resultant graph suggests that the BMI differences go right back to infancy (3-6 months) and birth weight seems to predict overweight at the age of eight years. This suggests that birth weight and early infancy is the first critical period for the onset of overweight at the age of eight or older.

One of the problems faced with COSI implementation was the difficulty associated with training school nurses to calibrate school scales and stadiometers (because many different types of instrument were being used). Other important factors to highlight are that waist circumference proves to be a good indicator that is also useful for quality control. The high level of participation in the study (>90% children) may be due to the use of school nurses who have the necessary credibility. Finally, it is worth pointing out that, because the sentinel approach uses the same schools each time, there is no reporting back to schools, so as to minimise the impact of the study on the representativeness of the schools.

There was discussion about whether the sentinel approach may mean that the schools are no longer representative of schools across Norway. It is important to bear this in mind and, at the very least, the school environment questionnaires should be examined to see if these particular schools are implementing various different interventions to prevent overweight and/or obesity.

**Portugal**

Professor Ana Rito, National Institute for Health, gave an overview of the 2013 COSI data collection in Portugal.

Portugal has been involved in COSI since the outset, and participation has been very important for the country because prior to that there was no surveillance. The initiative involves a number of different institutions at the national and regional levels, with a total of between 387 and 400 people involved each time.

It is important to realise that a lot of preparation is required before the field collection period. Each country has to have the procedural manual adapted and translated to fit their own context. Portugal has published the manual so that (a) any other researchers can use it as a guide if they want to and (b) to ensure transparency. The examiners are provided with a three-day training (170 trained in three locations) and are then provided with a certificate. Data was collected in two forms (paper and electronically using optical character recognition software), the online platform for data entry is password sensitive for each examiner, thereby enabling data quality control.

In the third round, data from 5,935 children from 423 schools were included in the analysis. Portugal has used a sentinel approach, based on a nationally representative sample of schools (189). Data has been collected in these schools for all three rounds. For the forthcoming fourth data collection, however, a new approach will be introduced because of concerns about the
impact of a sentinel approach for the representativeness of the data. In general, there is oversampling to ensure that there will be enough 7 year olds in the sample (for national purposes all children measured are included, for COSI only 7 year olds are included).

Preliminary third round data suggest a slight decrease in prevalence since 2010 (24.8% of overweight including obesity using IOTF cut-offs in 2013 compared to 26.3% and 28.1% in 2010 and 2008 respectively). Data calculated using WHO cut-offs show the same trend (34.4% in 2013, compared to 35.7% and 37.9% in 2010 and 2008). The sample is not stratified by socioeconomic status so some caution is needed on how to use these data and Portugal remains, among the countries with the highest prevalence rates.

**Romania**

Dr Rodica Nicolescu, National Institute of Public Health, presented an overview of COSI in Romania.

Romania joined COSI for the third round of data collection, and a representative sample of 8-9 year olds (4,348) from 205 schools. The sampling frame was urban-rural stratified because of the large differences (e.g., socioeconomic) between rural and urban areas in Romania. Regionally-based public health workers were used as examiners, working in pairs. They proved to be fresh to the subject and closely respected the procedures set out in the training. School doctors and nurses were extremely helpful in facilitating the process. Data collection was carried out for the mandatory form only (anthropometric data).

Preliminary results suggest that most children are normal weight, regardless of their gender or their residence. Prevalence of underweight is higher in girls than in boys and in rural than urban areas. More than a quarter (26.8%) of children studied are overweight or obese (obesity alone is 11.6%). Prevalence of overweight including obesity is slightly higher in boys (29.8%) than girls (23.7%). The same is true for obesity prevalence (15% in boys, 8% in girls). Prevalence is significantly higher in urban areas than in rural areas – overweight and obesity is 31.6% in urban, 25% in semi-urban and 21.6% in rural areas, with a similar pattern for prevalence of obesity alone.  

**San Marino**

Anne-Claire De Faveri, Health Authority, described COSI in San Marino. Since 2010 the health authority has collaborated with the Italian Ministry of Health to integrate San Marino into their COSI system. The entire target population of 8-9 year olds in 14 schools was surveyed. The examiners were healthcare workers (school nurses and dietitians).

Results from 2014 suggest a prevalence of overweight including obesity of 31%. There appears to be some stabilization among 8-9 year olds (overweight was at 20.8% in 2010, 22.3% in 2012 and 22.5% in 2014; Corresponding figures for obesity were 8.4%, 9.3% and 8.5%).

COSI participation has contributed to the establishment, in 2013, of a multisectoral working group on health education and health promotion in schools, bringing the health and education sectors together. Being a small country can be very challenging, but also presents opportunities.

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The Small Countries Initiative, for those countries with less than one million inhabitants, will facilitate participation in the final report. Collaboration with bigger countries, however, remains essential because of the lack of resources in smaller countries. COSI has been an important source of data and has been included into the 2015-2017 national public health plan (to be published soon), as a starting point for tackling childhood obesity.

For the future, it will be important to further improve the multisectoral approach the collaboration with schools through the working group on health education. WHO’s support will be sought to help resolve the most common problems faced by small countries. Finally, creation of a stronger network between WHO, small countries and neighbouring bigger countries to share know-how and experience will be important.

**Slovenia**

Dr Gregor Starc, University of Ljubljana Faculty of Sport, gave an overview of the third round of data gathering in Slovenia.

Slovenia has participated in COSI since the outset, and this is part of a much larger data collection exercise, namely the SLOfit database which was implemented in 1987. Under this system almost every child is measured every April by physical education teachers, and the database now contains more than six million measurements.

The COSI sample is sampled from the SLOfit database, with 12,217 boys and 11,687 girls aged between 6 and 9 years included in the 2013 sample, drawn from 51.6% of schools. Very few parents refused to give consent – boosted by legislation that provides for mandatory measurement by teachers in the physical education curriculum.

The COSI prevalence data were compared with the data from the national SLOfit survey and no significant differences were found. Prevalence of overweight in boys in 2013 was 11.6% for 6 year olds, 12.4% for 7 year olds, 16.5% for 8 year olds and 18% for 9 year olds. For obesity, the respective figures were 6.4%, 6.8%, 7.7% and 8%. For girls the figures for overweight were as follows: 12.9%, 15%, 17.8% and 17.3% for the different year groups. For obesity, they were 5.8%, 6.1%, 7% and 7.1%.

Analysis of Slovenian data looked at the relationship between BMI and physical fitness and found that there is small window where children can have a high BMI but still be in the healthy physical fitness zone, and can still be physically effective.

Examination of the obesity trends in Slovenia suggest that prevalence in boys started to decline in 2010. At the current rate of decline, however, it would take many years to reach 1988 levels. It is also important to consider inequalities.

Using PE teachers to take the measurements is effective, since they learn to do this at university. There are some issues with variations in equipment. Data is collected in three different forms (paper, excel and using an internet interface). Key advice to new members to COSI would be to first examine what systems exist before building anything from scratch.

**Spain**

Dr Napoleon Perez-Farinos, Ministry of Health, Social Services and Equality, presented the results of the third round of data collection in Spain. Having joined COSI for the second round of
data collection, Spain conducted the third round with no significant methodological changes. A nationally representative sample included 3,426 boys and girls aged 7 and 8 years from public and private schools, who were measured between September and December 2013.

The preliminary third round results show a high prevalence of overweight (24.6%) and obesity (18.4%), but show some signs of stabilization with a small decrease between 2011 (26.2% and 19.1% respectively) and 2013. The results of the (self-reported) national health survey are coherent with these COSI results. Prevalence of obesity and of overweight and obesity combined is statistically significantly higher in boys than girls (obesity: 21.4% in boys, 15.5% in girls; overweight and obesity: 45.6% in boys, 40.4% in girls). There are also age differences, with prevalence higher in eight year olds than seven year olds.

COSI has been renamed, as ALADINO in Spain. The 2013 study results have been published in a report, which is available on the website29 (currently in Spanish only). For the next round of COSI data collection, the intention is to study four year groups – from 6 to 9 years.

**Sweden**

Professor Agneta Yngve, Örebro University, gave an overview of the Swedish role in COSI. Sweden participated in the 2008 data collection round, involving two institutions (Karolinska Institutet and Sahlgrenska Academy) and adopting a sentinel approach involving passive consent from parents. A ‘travelling circus’ of teams of mostly students trained in anthropometry toured the country taking their equipment with them. For this round research funding was provided.

For the 2010 data collection the regional ethics committee demanded active consent in advance of measuring the children, and this led to a massive drop-out. This, and the lack of additional funding, meant that it was only possible to collect data in parts of the country.

A way of avoiding any such problems with ethics or consent would be for all data to be collected within a national monitoring system and by education system employees. This would mean training for school nurses and a national reporting system would be needed, along with good equipment.

Discussions are underway with the new government about the possibility of piloting a new system in sentinel schools. It is important to note that preschools are under the aegis of the health system, and they have excellent electronic records. The school system, however, is different. There will be discussions with the National Food Administration and the Ministry of Health about potential funding for future data collection.

**Turkey**

Dr Sibel Gogen, Ministry of Health, Public Health Institution gave an overview of Turkey’s participation in the third round of COSI in 2013. Data collection was conducted under the coordination of the Ministry of Health together with the Ministry of Education and Hacettepe University.

5,600 students aged between 7 and 8 years old, from 216 primary schools in rural and urban areas across 67 provinces, were targeted. Parents were asked to give active consent. The measurements were mainly carried out by dietitians and nurses who were the employees of

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Provincial Public Health Directorates. For the family questionnaire, there were some encoding errors or interpretation difficulties and some questions (28,29 and 31) had to be excluded from analysis.

The preliminary prevalence of overweight and obesity combined was 22.5% nationally (obesity 8.3% and overweight 14.2%) with some differences between NUTS regions. The regions with highest levels of obesity are Eastern Black Sea (18.3%; and 41.3% including overweight), Istanbul (12.4%; and 28.3% including overweight), Aegean (10.8%; and 26.3% including overweight) and Mediterranean (8.9% overweight; and 25% including overweight).

The national prevalence for stunting was 2.3%, but remains high in some regions (up to 4.8% in East Anatolia). Prevalence of overweight (including obesity) is higher in boys (23.3%) than girls (21.6%) and in urban (24.2%) than rural (14.2%) areas. Stunting, in contrast, is more prevalent in rural areas.

Findings from the school questionnaire suggest that provision of free fresh fruit and vegetables to students is relatively low (9.7% and 8.3% respectively) and free milk is provided in less than two-thirds (61%) of schools. There is no restriction on sales and advertising of foods and beverages in 22.7% of the schools. Although provision of healthier beverages (free of charge or paid for) was most common, drinks whose consumption is not recommended were still offered in a sizeable proportion of urban schools.

In relation to the challenges and lessons associated with this first implementation of COSI data collection, the support of WHO was greatly appreciated at every step. Efforts were made to share the results with stakeholders, through a press release and publication of reports. More analysis of the results is needed to disaggregate the data and compare different sub-groups. Some of the questions in the family questionnaire need to be revised, cleared and described in detail.

One barrier is illiteracy among mothers (10%) which may be leading to low response rates. A further challenge is sustainability and ongoing funding – the Ministry of Health has established a budget for the fourth round of COSI data collection 2015-2016.

The lessons learned include the finding that schools need more support in terms of relevant facilities, sources and practices relevant to nutrition and physical activity. Following the COSI results, a policy was developed to restrict the sales of sugar-sweetened beverages in schools. Furthermore, policies to restrict foods high in fat, sugar or salt in schools and to restrict marketing and advertising in schools are in development.

**Revision and validation of different templates and questionnaires**

Drawing on the experience of various countries, the meeting considered whether and how the different instruments used in COSI should be amended and whether new topics should be included.

**Oral Health**

Dr Paula Vassallo, Consultant in Dental Public Health from Malta and Chair of the Platform for Better Oral Health Europe, gave a presentation on oral health.
Oral diseases are highly prevalent and have an impact on quality of life. The cost of dental care is excessive, with dental diseases being the fourth most expensive disease to treat\textsuperscript{30} varying from 5\% to 16\% of health expenditure in OECD countries (equivalent to 79 billion euros in the EU).\textsuperscript{31}

There is a significant relationship between obesity and dental caries in children from industrialized countries.\textsuperscript{32} The main dietary risk factor for caries is sugar and a significant relationship between sugars and caries persists despite the regular wide scale use of fluoride toothpaste and fluoridated water. The much greater adult burden of dental caries highlights the need for very low sugar intakes whether or not fluoride intake is optimum. The new WHO Guideline on sugar – which recommends reducing the intake of free sugars to less than 10\% of total energy and further suggests a reduction to below 5\% of total energy – is, therefore, very welcome.

Malta is conducting a national oral health survey, involving oral examination and questionnaires in different age cohorts, between 2014 and 2016. It also involves anthropometric measurements (height, weight, BMI, nail cleanliness).

Under the Health 2020 framework there is an opportunity to tackle these different issues in an integrated way. Options include: adding oral health question(s) to the COSI questionnaire; integrating COSI with Dental Health Survey; integrating Globodiet (IARC) with Dental Health survey; integrating Globodiet (IARC) with COSI.

Possible additional questions to be added to COSI could include:

- Recall of suffering from oral health problems and/or difficulties with eating, smiling or relaxing/sleeping.
- Frequency of consumption of particular sugary snacks and drinks (to the food and drink frequency questionnaire).
- Use of dental services.

In Malta, oral health questions and dental examination will be included in the 2016 round of data collection. There will also be integration of Globodiet with COSI in order to collect comparable high quality data on the dietary habits of children and adults residing in Malta including amounts and frequency of food consumption. The integrated study also aims to collect standardised anthropometric measurements, standardised oral health data (including quality of life) and reliable data on physical activity, with a view to exploring the relationship between anthropometric measurements, dietary habits, socioeconomic background and oral health. The study results will be used to develop national dietary guidelines and in planning and evaluation of health policies.

Determinants of diet and physical activity (DEDIPAC): Knowledge hub to integrate and develop infrastructure for research across Europe

Dr Wolfgang Ahrens, Leibniz Institute for Prevention Research and Epidemiology (BIPS), Germany, gave an overview of the DEDIPAC knowledge hub on determinants of diet and physical activity.

\textsuperscript{32} Hayden et al 2013 (get reference)
DEDIPAC is a part of the EU’s Joint Programming Initiative on a Healthy Diet for a Healthy Life. This means it is a joint project of Member States, rather than a Commission programme, and it also involves some non-EU countries as observers.

The aims of the knowledge hub are to:

1) Develop a network and infrastructure of researchers from different disciplines;
2) Develop an online toolbox of best-practice and state-of-the-art methodologies for better harmonization and comparability;
3) Pilot test and optimize these methodologies across the participating countries;
4) Establish a critical mass in this research area.

One of its thematic areas concerns assessment and harmonization of methods for future research, surveillance and monitoring and evaluation of interventions and policies. This is where a link with COSI could be valuable, as part of efforts to bring research groups together. One of the project work packages aims to develop a roadmap towards a standardized pan-European surveillance system to monitor regional differences and temporal trends in dietary, physical activity and sedentary behaviours and their key determinants.

An initial step in preparing this road map was, in cooperation with IARC, compilation of an inventory of existing national and pan-European surveillance systems in order to be able to identify current gaps and future needs. The main conclusions of this inventory were:

- There are numerous ongoing activities, but these are mainly only national.
- They mostly concern adults, there is a lack of surveillance in infants and children.
- The most commonly assessed domains are food intake and physical activity;
- Sedentary and dietary behaviours are often lacking in monitoring surveys.
- The methodologies lack standardization – better international harmonization is needed to facilitate comparisons over time and between countries.

The next step was a feasibility involving development and testing of questionnaires for the assessment of sedentary behaviour (using accelerometers) and its key determinants in children and adolescents in three institutes.

The DEDIPAC vision is, therefore, to develop a pan-European surveillance system (for now focusing on youth) looking at multilevel determinants of diet, physical activity and sedentary behaviours. Further information is available from www.dedipac.eu.

**Discussion**

The issue of accelerometer devices attached to the skin was raised, because in Slovenia, for example, lots of people dropped out of studies because they developed a rash from devices. This highlighted an importance issue – the need to choose devices that are appropriate for the target group (easy to wear, don’t interfere with activities, acceptable appearance, etc.).

The focus of DEDIPAC on individual-level surveillance was discussed, and its relevance for policy surveillance. The DEDIPAC approach enables reasons for observed effects to be assessed and should, ultimately, enable comparison of different policy approaches between countries.
Exploring synergies with the Schools for Health in Europe Network (SHE), Health Behaviour in School-aged Children (HBSC) and other ongoing initiatives/research projects

Mr Goof Buijs, SHE Network CBO and TNO, Netherlands, introduced the SHE Network and explored how collaboration between SHE and COSI could potentially create synergies between data and school practice.

The SHE Network was founded in 1992 and is currently comprised of 45 member countries and some regions (e.g., in Germany). It receives support from WHO Regional Office for Europe, the Council of Europe and the European Commission. The focus of the network is to make health promoting schools an integral part of policy development in education and health sector.

The basic dilemma is the lack of clarity about which sector – health or education – is responsible for health in schools. Schools usually see their roles as furnishing students with knowledge and skills, while people from the health sector tend to come along with a great sense of urgency and make ‘urgent’ demands of overworked school teams. A crucial role of the SHE network, therefore, is to facilitate intersectoral working and to demonstrate to schools that their participation is in their own interests, because there is a relationship between good health, educational achievement and school completion.

One of the core concepts underlying the network’s approach is the whole school approach, which links policies, the physical and social environment, skills and competencies, community links and health services. A number of factors – such as the way the school is managed, students experience in taking responsibility, how teachers relate to students and how the school engages with its local community – help to build health protective factors and to reduce risk-taking behaviour.

In 2013, there were 34,000 health-promoting schools in the European region, with coverage ranging from 0% to 100% of schools depending on the country. Healthy eating and sports/physical activity are common topics for programmes in schools. A set of 56 school level indicators has been described to help monitor and evaluate. An important principle is that there should always be considerable feedback to schools about any results.

Schools are guided through a five-phase process to become a health promoting school by the SHE Online School Manual and two companion documents (the school action planner and the rapid assessment tool). These tools help schools to understand that it takes a long time to prepare this process. In fact, there many varied tools in this area have been developed in the past but these are not always being used in practice due to a lack of awareness. The EU-funded Hepcom project aims to help communities – including schools – find out about these tools and to promote their use.

It appears that SHE could be considered as the long lost daughter of the growing COSI family. It is clear that COSI provides excellent data that can support policies and a greater focus on inequalities would be welcome. COSI has the potential to demonstrate the impact of national and school policies, but it is not always possible to see the link between prevalence changes and policies.
COSI investigators are recommended to make active contact with their national SHE coordinators, who could help disseminate COSI results. It would also be useful to include the whole school approach in the school environment questions on the school questionnaire.

In conclusion, COSI data are a gold mine but are hardly known to the education sector. The SHE network would be happy to disseminate results and to raise awareness.

**Discussion**

There was clarification that membership is currently restricted to countries and regions, and does not extend to individual schools. However, anyone who is interested in getting involved, at any level, is encouraged to get in touch – it is possible to disseminate a great deal of useful information and tools.

There was some discussion about feedback to participating schools, and the extent to which this varies within participating COSI countries. Those countries where they have adopted a sentinel approach are more cautious about giving detailed feedback to schools in order to avoid the study becoming an intervention. In many respects, however, COSI could be considered an intervention. Different potential solutions to this problem were discussed, including feeding non-ranked data or nationally representative data back to schools (rather than school-level results).

Dr Iveta Pudule (on behalf of Dr Colette Kelly, National University of Ireland, Galway, Ireland) gave a presentation exploring possible synergies between HBSC and COSI.

The Health Behaviour of School-aged Children study is a cross-national research study which aims to gain new insight into, and increase understanding of young people’s health and wellbeing, health behaviours and their social context. It collects data every four years from children aged 11, 13 and 15 years.

The HBSC international network involves people from a variety of disciplines with a wide range of expertise. The variety of topics include, among many others, obesity, body image, weight reduction and behaviour, eating behaviours and school environment. The research protocol, developed by the network, includes mandatory questions and optional packages. Clustered systematic-random sampling is used and the tools are self-administered questionnaires. The study is evolving in various different ways, such as including younger children (9 year olds), use of an online questionnaire, use of geographic information systems, expanding participation of young people, strengthening the focus on vulnerable groups and even possible extension beyond Europe and North America.

It is clear that both HBSC and COSI are growing and evolving. Both involve a common protocol with core and optional items. Through both studies together there is a vast amount of data, and the potential for collaboration is therefore great. This could be through the sharing of items/questions or of expertise and skills. Alternatively, it could be through training opportunities, better use of resources or for a strategic collaboration with policy impact and greater opportunities for dissemination. Such collaboration could be possible within and between countries.

The challenges to be overcome in any collaboration include the fact that different teams are involved at country level, as well as different study designs and time points. The differences in
approach – measured vs self-report – also have to be considered. There may also be issues to do with conflict of interest, time and funding.

Possible next steps to take the collaboration further include networking and further discussion and debate. There needs to be open communication and COSI investigators should liaise with HBSC country teams if interested, and plan events to share data and discuss possibilities. There are clearly some potential synergies. Through collaboration and working together there can be a concerted effort towards a common goal, and data can be collected from age six to 15 years. Any initial collaboration could be small scale to start with, but this would be a beginning of a potentially fruitful collaboration.

**WHO support on data collection, analysis, reporting, expansion and sustainability of COSI: Changes ahead?**

João Breda summarised some of the challenges facing COSI at this stage and made a number of proposals for the way forward. Professor Harry Rutter launched the discussion on these proposals and other considerations on the way forward. Issues to consider include:

- how to get the most out of the annual meetings;
- how new members can best be supported;
- what improvements are needed to the systems for collecting, storing, retrieving, analysing and publishing data;
- how data from COSI can be integrated into other actions;
- what the future direction for COSI should be.

**COSI expansion**

The expansion of the number of countries involved in COSI – so far 31 Member States are involved in third round data collection – is clearly very welcome. This will enable more health Ministers are equipped with the key data to be able to pursue effective policy action. It is hoped that there will be even further expansion in the next year.

**Degree of flexibility**

With that expansion it will be important to consider whether all the tools and methodology are appropriate. In the early days of COSI there has been a strong focus on very tight consistency and adherence to strict standards. As the Initiative expands there may be a need to be a little more flexible in allowing Member States to adapt to their national context, while still ensuring excellent data quality.

For prevalence data to be able to discern trends it will be important to stick to the protocol and, therefore, to respect the recommendations on sample size. There may be a possibility to use other quality data which do not fit the sample size in discussion and methodology.

**Support from WHO**

To date, WHO has provided a lot of support, through in-house staff at the Regional Office, for data collection, data cleaning and analysis. In order to deal with the expanding number of countries participating, some changes to the support provided by WHO are proposed. The proposal is that the Regional Office remains the coordinating centre, but that the time-consuming process cleaning and analysis of third round data could be outsourced, through an open tender process, to an external institution.
Electronic data management

With the involvement of increasing countries and numbers of children, and in order to improve the efficiency of data collection and analysis, to reduce paper use and the volume of paper records, WHO is proposing creation of an electronic system for data collection and storage. This strategic solution would also facilitate access to the data. COSI now features on the WHO website and, ultimately, an electronic data system could improve transparency by allowing all the data to be accessible from the COSI website.

There are some existing electronic systems that could serve as an inspiration or example of the type of system. Examples include:

- ASSO – a web-based surveillance system for adolescents in Italy, complete with a toolkit to facilitate easy data collection;
- Lime Survey – an open source web-based application that is available in most languages and can be integrated into other systems;
- OpenClinica – a multilingual database for data collection and management that is easy to use, accessible from any browser, includes tools for cleaning, management and monitoring and enables custom-defined data sets to be obtained in real time.

Some countries enthusiastically welcomed the proposal to switch to paperless data collection (and some are already doing it to a degree), while others expressed some reservations. The Regional Office is recommending a ‘precautionary approach’ to these changes that allows some MS to continue using the existing approach while they take their time to prepare for such a shift while enabling others (e.g., new COSI members) to move very soon to web-based data collection.

Discussion of this new approach identified a number of issues that need to be considered:

- data protection (and implications for sharing data across borders);
- ethics committee approval (linked to concerns about data protection/ tracking children over time);
- cost implications if new hardware/software are required;
- need for extreme care on electronic data storage so data is never lost;
- particular challenges of collecting school and family questionnaires in this way (particularly with families).

A stepwise approach to implementation should have the advantage that key lessons can be learned from the first implementers, and passed on to those who implement later.

Frequency of data collection

At the previous COSI meeting it had been agreed that data collection should be extended to once every three years.

Timeframe for cleaning data

There were some concerns about whether the changes to the support would slow down the data cleaning process. This already takes a long time and can delay publication. This is a shared responsibility – both Member States and WHO (or the external institution) need to be quicker in data processing and cleaning in order to have the final data set sooner.
Revision and validation of the different templates and questionnaires

Dr Angela Spinelli presented some comments on revision and validation of the different templates and questionnaires.

Her observations on the COSI mandatory items from the examiner and school form were:

<table>
<thead>
<tr>
<th>Question</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3 What is your name?</td>
<td>Is it necessary to have the first and second names if the child’s code is recorded?</td>
</tr>
<tr>
<td>Q7(b) Child’s postal code</td>
<td>Is this question necessary?</td>
</tr>
<tr>
<td>Q14 food/beverages pupils can obtain on the school premises</td>
<td>Is the current level of detail necessary (breakdown of foods/beverages)?</td>
</tr>
<tr>
<td>Q10 How does your child usually get to and from school?</td>
<td>Is it necessary to separate going to school and coming from school?</td>
</tr>
<tr>
<td>Q15 What is your child’s usual amount of sleep each day?</td>
<td>In Italy, the question is asked as follows: On school days what time does your child usually go to bed and what time does he/she wake up?</td>
</tr>
<tr>
<td>Q16 In his/her free time, about how many hours per day does your child usually play outside, at home or somewhere else?</td>
<td>Is it necessary to separate weekdays and weekend?</td>
</tr>
<tr>
<td></td>
<td>We suggest asking ‘how many days..’?</td>
</tr>
<tr>
<td>Q17 In his/her free time, about how many hours per day does your child usually spend doing homework or reading a book at home or somewhere else?</td>
<td>Is it necessary to separate weekdays and weekend?</td>
</tr>
<tr>
<td></td>
<td>What can we do?</td>
</tr>
<tr>
<td>Over a typical or usual week, how often does your child eat or drink the following kinds of foods or beverages?</td>
<td>Do we need such detail on foods or beverages?</td>
</tr>
<tr>
<td>In his/her first year of life, for how long was your child breastfed?</td>
<td>Can the mothers remember?</td>
</tr>
<tr>
<td></td>
<td>Would it be better ‘how old was your child when you stopped breastfeeding’?</td>
</tr>
</tbody>
</table>

Other suggestions from the Italian group are to collect information on mother’s perception about their child’s nutritional status, food consumption and physical activity:

- In your opinion, is your child: underweight, normal weight, a little overweight, extremely overweight?
- In your opinion, does your child eat: little, the right quantity, too much?
- In your opinion, is the time your child spends doing physical activity (sports, games, etc.): little, enough, a lot?

The first of these questions above is especially important because, in the fourth round of the Italian COSI data collection, 48.6% of mothers whose children were overweight did not recognise that their children were overweight.

In addition, the Italian team also collects data on oral health, and may collect data on other aspects of child health in the future, according to the Ministry of Health and the Regions.

Discussion

It is time to revisit some of the tools developed in the early days of COSI. When the Initiative was first established, a group of experts had reviewed and discussed the questionnaires and agreed that those introduced were the best possible solution at the time. It was agreed that the questionnaires need to be revised and validated.
Constitution of smaller working groups was proposed – to work on strengthening the questionnaire. As part of that process it will be important to bear in mind comparability over time, and to find an acceptable balance between making improvements and ensuring that the questions remain sufficiently comparable to identify longitudinal trends. It will also be vital to take into consideration that ethics committees may have already given approval to the existing questionnaires for the next data collection. This should be a careful process, and there will need to be careful review of new suggestions taking into account countries now extensive experience with implementing the questionnaires.

There was some reaction to the suggestion that the questionnaire does not need to capture information on children’s activity at the weekend. It was argued that it is important to examine what children are doing at weekends, because this reflects parents’ role. In the large Italian sample, however, no real differences between weekdays and weekends were found.

There are also differences after summer vacation, so ideally data should be collected some time after the start of the autumn term (after September) or in springtime. It was also noted that children are likely to be more appropriately dressed (in lighter clothing) in May and June, and that this is important in schools where there are no heating systems.

There was discussion of the inclusion of information about other health issues, such as oral health. There were some concerns that this could open the door to lots of other issues that it might be difficult to contain. It may, however, be strategic to include other health issues – such as oral health. Such areas are critically important and better data is needed, and it would be helpful to be able to supply policymakers with the information they need. A question was also raised about the question about teeth brushing specifically after dinner – this seems to be in conflict with typical advice to brush teeth morning and night. It was also noted that this question links to behaviour not actual oral health. It was agreed to ask WHO colleagues on oral health to advise on the best questions to include.

Another suggestion of a question to include relates to overweight and obesity in parents, since there appears to be a correlation between NCDs in parents and overweight in children. In relation to physical activity, it would be good to include physical activity questions in the questionnaire to parents.

Further suggestions for subjects to include were mental health (two questions to assess depressive symptoms) and wellbeing (possibly from the HBSC questionnaire).

Another issue that was raised was the timing of the measurement phase in the school year, which has implications for the final sample size. Measurements taken in the autumn, for example, might increase the numbers in the final sample size because more of the children targeted will be the required age. The next data collection round is due to take place in the 2015/6 school year. There was a question as to whether this data collection could be postponed until the autumn of the following school year for this reason. This was an issue where further discussion would be required. Ideally, data collection should really take place in the specified period (between autumn 2015 and summer 2016), especially to enable inclusion in joint publications.
Recommendations and next steps

**Questionnaire revision**

As mentioned above, it was agreed that a small working group would examine options for validation and improvement of the questionnaires and other COSI documents, with the aim of simplifying and refining the instruments by the end of September 2015. IARC should be included as an observer to this group, and it would be useful to involve the Health Promoting Schools and Health Behaviour in School-aged Children networks.

**Scientific publications**

It was also agreed to do more work to generate scientific publications and to expand this to different thematic areas. This is important to increase the motivation, reputation and reliability of COSI.

While WHO will continue to take the lead on the core papers, participants were asked to indicate any subject areas where they would be prepared to take a lead on coordinating and drafting thematic papers for publication. It is important to stress that, in line with WHO policy, all papers must be open access. A number of countries put themselves forward:

- Slovenia: Urban-rural gradient (coordination)
- Czech Republic: Waist circumference and height (coordination)
- Portugal: North-south gradient (coordination)
- Croatia: Socio-economic status and prevalence (keen to get involved and maybe to take the lead in the future)
- Lithuania: Associated nutrition factors, early post-natal factors and family health

WHO is also keen to support Member States in publishing their national data. The Regional Office is happy to provide help with English, layout etc. and facilitate synergies with other papers and/or countries. As a starting point it was agreed that the Regional Office would contact Member States and ask them to outline their plans for publication of national data and other relevant publications (including all conference presentations) along with what their support needs are for these publications. This inventory would then help the Regional Office to support Member States in disseminating the data as widely as possible.

**Policy responses**

It was suggested that some sessions during COSI meetings should be dedicated to discussing how countries are responding to the data at policy level and that it is also important to consider how COSI can monitor Member State responses to the data. This meeting heard about cases where policymakers responded to COSI data (such as the policy to increase drinking water in schools in Hungary) and it would be good to capture more of this type of example.

It is important to strengthen the dialogue with policymakers, particularly as it is increasingly crucial to look beyond the headline figure and examine socio-economic and geographic differences.

The Regional Office offered to prepare a short policy brief, incorporating national case studies of examples where COSI data have made a difference.
**Enhancing mutual support**

A number of valuable suggestions to enhance mutual support as COSI moves forward were made:

- Mentoring/buddying of new members by experienced members;
- Creation of a series of working groups:
  - Policy and strategic issues
  - Technological issues (electronic data collection, storage, etc.)
  - Methodology (instruments and processes)
  - Analysis and publication
  - Research, innovation and development
- Europe-wide procurement of measurement equipment by WHO Regional Office to ensure consistency and save costs;
- Establishing small advice ‘clinics’ during the COSI meetings;
- Regular webinars with expert contributors, open to anyone involved in COSI network;
- Sharing of a list of PhD students who are working on COSI across the member countries, establishment of specific webinars, meetings for these doctorate students;
- Publishing all COSI publications and documents (and in due course, the data themselves) on COSI website.

**Equipment**

The protocol specifies some recommended standardized equipment and, as far as is possible, these should be used. The WHO Regional Office is prepared to consider procuring, or provide support to the procurement process, the necessary equipment at the European level in order to support Member States, if such support is requested.

**Financing opportunities and human resources for implementation COSI on national level**

Some of opportunities that were mentioned as potential financial support for COSI: European Commission, European projects (sustainability) and collaboration between countries.

Several professions could be involved in the preparation and implementation: students (fields of medicine, nutrition, kinesiology, pedagogues, nurses etc.), PhD students, ERASMUS exchange students, etc.

**Promotion of that project at national and international levels**

Ideas that were brought up as good promotion elements included development of a COSI mascot, involvement of celebrities and use of the mHealth application.

**Consideration of equity issues**

There was a strong message that COSI really needs to address issues of inequalities and to ensure that the data is able to look behind headline figures and illuminate differences between groups. This greater emphasis on inequity is vital to ensure continued policy engagement and counteract complacency (e.g., from countries where prevalence may be levelling out or who have one of the lower prevalence rates in the region).
**Conclusions**

On behalf of WHO, João Breda thanked all participants and issued some concluding remarks.

The number of participants at the meeting is clear proof that COSI is growing and evolving. The degree of participation has surpassed all initial expectations. It is important to acknowledge the role of Member States and the WHO Regional Office and the important support of the WHO Regional Director and the European Commission. This is an excellent example of effective WHO-EU collaboration.

Over three fascinating days countries shared their experiences of being part of COSI – acknowledging challenges and identifying lessons to be learned, as well as describing some real successes where COSI has had an impact on policy.

Discussion on the way forward for COSI had identified a number of key next steps and some proposals for change that would allow the initiative to adapt to the welcome expansion in participating countries.

He concluded by issuing particular thanks to Croatia for hosting a very successful meeting in a stunning setting with such warm hospitality. The host team had provided invaluable support on organisational issues and secured the presence and participation of high-level policy-makers. WHO is grateful to the Minister of Health, the Minister of Science, Education and Sports and the Mayor of Dubrovnik for their participation and commitment to tackling this important issue. Finally, he thanked the WHO Regional Office team and in the WHO Croatia country office for organising all the logistics.

On behalf of the European Union, Mihaela Armanu congratulated everyone involved on the work and the results achieved. The European Commission is happy to have supported COSI in its implementation and expansion by funding, for example, the third round of data collection. Potential future collaboration is under discussion.

On behalf of the meeting hosts, the Croatian National Institute of Public Health, Sanja Music Milanovic thanked everyone for their participation and particularly thanked WHO for the opportunity to host this meeting in Croatia.
Annex 1

ANNEX 1: LIST OF PARTICIPANTS

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