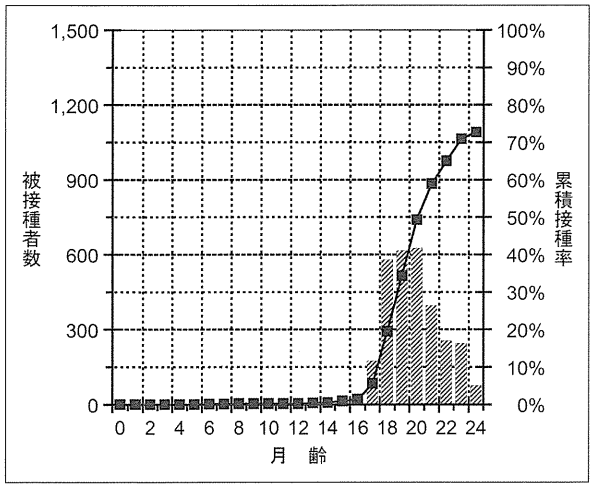

図6　DPT３種混合ワクチン４回目接種の月齢別被接種者数と累積接種率

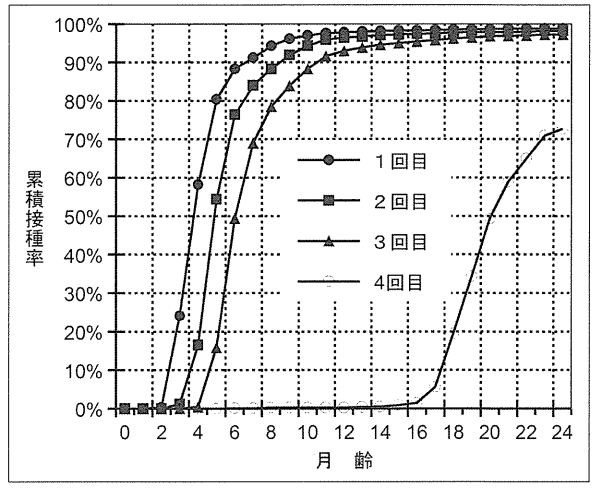

図7　DPT３種混合ワクチン１、２、３、４回目の累積接種率の比較

（95%CI：71.3%～74.1%）であった（**図6**）。

DPT３種混合ワクチン１～４回目の累積接種率を比較すると、１～３回目は、回を追って累積接種率の伸びが多少鈍くなっているものの、累積接種率曲線は、１ヵ月間隔でほぼ同様の経過をたどり、生後24ヵ月には95%を超えていた。一方、４回目は、生後17ヵ月から累積接種率曲線が立ち上がり、徐々に上昇してはいたが、生後24ヵ月でも約73%（2011年は約68%）に留まっていた（**図7**）。

7．麻疹・風疹混合（MR）ワクチン１期の累積接種率

MRワクチン１期に関する記載が不完全なもの（記入なしまたは非協力と記載されたもの）が110件あり、ワクチン接種日不明が115件あったので、これらを除外し、MR１期接種済の4,119件と未接種の157件の記録を集計した。集計対象とした記録だけの回収率は85.5%であった。

MRワクチン１期の接種件数は生後12ヵ月が最多の1,537件で、生後13ヵ月が753件、生後14ヵ月が406件と続いていた。全接種件数に占める割合は、生後12ヵ月が約36%、13ヵ月が18%、14ヵ月が14%であった。

累積接種率は、生後19ヵ月で90.1%（95%信頼区間：89.2%～91.0%）に達し、生後24ヵ月では96.3%（95%信頼区間：95.7%～96.9%）であった。ワクチン接種件数は生後12ヵ月以降漸減し、2010年のように第２のピークを形成することはなかった（**図8**）。

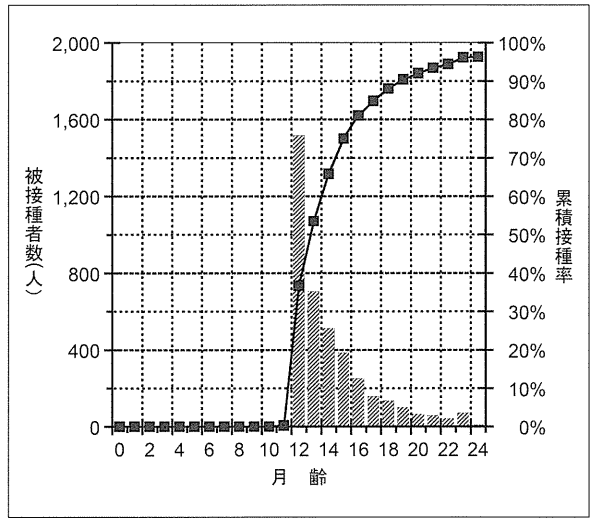

図8　全国MRワクチン１期の累積接種率

D. 考察

2004年度に結核予防法及び同法施行令、同法施行規則が改正され、2005年度からBCGワクチンの接種年齢が、改正前の「生後４歳に達するまで」から「生下時から生後６ヵ月に達するまで」に引き下げられた。法改正がなされた直後はBCGワクチン接種率の低下が危惧されたが、新制度下のBCGワクチン接種を受けた満１歳児を対象に2006年に実施した調査では、BCGワクチンの累積接種率は生後６ヵ月に達するまでに97%を超えており、きわめて良好であった。2007年以降も同様の調査を継続していたが、2009年調査からは、調査対象を１歳児から２歳児に変更したが、2006～2008年と同様に良好な累積接種率であった。

DPT１～４回目の全国累積接種率調査は、１

歳児を対象とした１回目だけの調査を除いて、2009年から２歳児を調査対象として実施を始めた。2009年の調査結果と同様に、DPTの累積接種率曲線は、１回ずれがある点を除き、ほぼ同様の形を示していた。最終の累積接種率は１回目よりは２回目、２回目よりは３回目が若干低い値になっていたが、いずれも95％以上と良好な累積接種率であった。DPT４回目の生後24ヵ月での累積接種率は、2011年より約５％高くなっていたが、約73％に留まっていた。これは生後24ヵ月以降に４回目接種を受ける小児が多いためと考えられる。

また、BCGワクチンとDPTの累積接種率曲線から、多くの小児がBCGワクチン接種を最初に受け、その後３回のDPT接種を受けていることが推測された。

麻疹ワクチンと風疹ワクチンは2006年４月から２回接種法式が導入され、MRワクチンが定期接種に用いられ始めた。2008年に３歳児を対象にして実施した麻疹ワクチン及び風疹ワクチン累積接種率調査では、すでに大部分の小児がMRワクチンの接種を受け、麻疹ワクチン、風疹ワクチンを個別に受けている小児はごく一部であったため、2009年からの２歳児を対象とした調査ではMRワクチン１期の累積接種率を調査した。調査対象年齢と累積接種率算定法の変更があったため、累積接種率調査結果を2008年までの結果と直接比較できないが、2008年の調査結果を2009年の算定方で計算し直すと、最終累積接種率が約96％となるため、2009～2012年の調査結果は2008年の結果とほぼ同等と考えられる。また、2010年の調査では、接種件数分布において生後16ヵ月で第２の低いピークがみられたが、2011、2012年調査では第２のピークは認められず、MRワクチン接種が順調に進んだことが推測された。

すでに任意接種として接種が開始されているヒブワクチン、結合型肺炎球菌ワクチン、新たに市販されたロタウイルスワクチの接種時期と競合しているので、これらの新しく導入されたワクチンがBCGワクチン、DPT、さらにはMRワクチンの累積接種率に、影響を与えるか否か、与えるとすればどの程度のものかを継続的に調査する必要がある。

H. 知的財産権の出願・登録状況

なし

厚生労働科学研究費補助金（新型インフルエンザ等新興・再興感染症研究事業）
分担研究報告書

WHO西太平洋地域における予防接種およびワクチンで予防可能疾患に関するTAG会議およびWHOワクチンに関するSAGE会議への出席

研究分担者：岡部 信彦（川崎市衛生研究所・所長）

研究要旨 第21回WHO西太平洋地域事務局（WPRO）におけるTechinically Advisory Group（TAG）on Immunization and Vaccine Preventable Diseases および WHO Strategic Advisory Group of Experts（SAGE）on Immunization 両会議にオブザーバーとして出席し、情報収集を行い、討議に参加した。その結果は、研究班会議および厚労省厚生科学審議会予防接種部会および関連ワーキンググループ、厚労省麻疹対策会議、厚労省ポリオ対策会議およびその他の予防接種関連会議にて報告あるいは会議における討議に反映させた。

A. 研究目的

第21回WHO西太平洋地域事務局（WPRO）におけるTechinically Advisory Group（TAG）on Immunization and Vaccine Preventable Diseases および WHO Strategic Advisory Group of Experts（SAGE）on Immunization 両会議にオブザーバーとして出席し、情報収集を行い、国内において関連研究者等と情報の共有を行いまた厚労省厚生科学審議会予防接種部会および関連ワーキンググループ、厚労省麻疹対策会議、厚労省ポリオ対策会議等での討議の参考資料とすることを目的とした。

B. 研究方法

WPROにおけるTAG会議は、2012.8.21-23フィリピン・マニラ市のWPROにおいて開催された。日本からは、吉倉元感染研所長が副議長として、倉根感染研副所長がTAG Memberとして出席。本研究班分担研究者岡部は、これまでにTAG Member 等として参加していたが、今回はオブザーバーとして参加した。

WHO SAGE会議は、2012.11.6-8.スイス・ジュネーブWHO本部で開催された。本研究班分担研究者岡部は、これまでも国内研究機関（国立感染研）からの参加者としてオブザーバー参加をしていたが少なくともこの17年間、日本はメンバーになっておらず、また日本からの参加者はまれで、ほとんどに場合は報告者（岡部）が唯一の日本からの参加者であり、今回も同様であった。

（倫理面への配慮）

とくになし

C. 研究結果

TAG会議では麻疹排除計画の進捗状況および今後の課題の検討が大きな議題の一つであり、ことに2012年はWPROにおける麻疹排除（elimination）も目標年であり、討議時間もTAG全体の大きな時間を占めた。WPRO全体としてはこれまでの最小の発生状況となってきており、これには中国・日本の対策が大きく進展したことによるが、フィリピン・ラオス・カンボジア・パプアニューギニアなどでのコントロールはまだ不十分であり、マレーシア、ニュージーランドでは再び増加が見られている。日本およびオーストラリアでは国内発症者の分離ウイルスの遺伝子検索から、其のほとんどが海外からの輸入例であることが確認された。Eliminationに関しては、加盟国は更なるワクチンカバー率の増加およびサーベイランスの強化をはかり、ゴールを目指すこととされた。またそのindicator等を見直し、各国の状

況を評価することとされた。

風疹対策も強化することが確認された。

ポリオに関しては、20111年中国においてパキスタンから輸入された野生株ポリオの流行は、収束を見たことが報告されたが、最終確認は11月におけるRCC会議（報告者は同会議副議長）で検討されることとされた。

ワクチンに防腐剤として含有されるチメロサールについては、ワクチンの安全性に関して問題のないことが再確認された。

同会議のAgenda, Conclusion and Recommendationおよび研究班会議における発表内容は、資料として添付した。（**資料1，2**）

SAGE 会議は2012.11.6-8 スイス・ジュネーブ市のWHO本部において開催された。

ポリオの状況については、中国（2011）・タジキスタン（2010）における野生株ポリオはコントロールされ、またインドも1年間以上野生ポリオの発生がなくなり、現在に流行国はアフガニスタン・パキスタン・ナイジェリアとなった。今回はことに2型によるワクチン関連麻痺（VAPP）および伝播型ワクチンポリオウイルス（cVDPV）による麻痺例の問題が討議され、生ポリオワクチン（OPV）から2型をのぞき2価OPVとし、3価不活化ポリオワクチン（IPV）を1回投与する方法を導入することが検討された。

麻疹に関しては、世界的にもワクチンカバー率の上昇とともに報告数の減少が見られているが、アメリカ地域、アフリカ地域、ヨーロッパ地域での再流行が課題となっていることが示された。その中でWPROにおいては減少が明らかであり、中国と日本の現象によることが大きいことが述べられ、また日本の定期接種による予防接種率の改善（3期、4期の導入）を図り、良好な状況となっていることも紹介された。

風疹についてもTAG同様、ワクチン導入可能な国では積極的に導入し、先天性風疹症候群eliminationを目指すことが薦められた。

同会議のAgenda, Conclusion and Recommendation および研究班会議における発表内容は、資料として添付した。（**資料3，4，5**）

D. 考察およびE. 結論

日本の状況はかつてに比べて、その対策が功を奏しているが、さらにワクチンカバー率の増加、サーベイランスの強化・維持を行う必要があり、また麻疹については積極的に今度は海外の支援を行っていくことも必要であると思われた。

F. 健康危険情報

特になし

G. 研究発表

特になし

H. 知的財産権の出願・登録状況

特になし

TWENTY-FIRST MEETING OF THE TECHNICAL ADVISORY GROUP ON IMMUNIZATION AND VACCINE-PREVENTABLE DISEASES IN THE WESTERN PACIFIC REGION
Manila, 21–23 August 2012

17 August 2012
English only

TENTATIVE TIMETABLE

Time	Tuesday, 21 August 2012	Time	Wednesday, 22 August 2012	Time	Thursday, 23 August 2012
08:00–08:30	**REGISTRATION**		**4. Hepatitis B control**		**9. National Regulatory Authorities (NRA), vaccine safety, management and security**
08:30–09:00	**1. Opening** • Opening speech • Self–introduction • Election of officers: Chairperson, Vice–Chairperson and Rapporteur • Administrative announcements • Group photo	08:00–08:30	**4.1 Regional update** • Presentation on status of 2012 control milestone • Discussion	08:30–08:50	**9.1 Regional priorities in NRA systems and vaccine safety**
		08:30–09:00	**4.2 Cambodia** • Presentation on successful strategies and targeted activities • Discussion	08:50–09:05	**9.2 Vaccine stock management and importance of monitoring vaccine stock–outs in countries**
				09:05–09:20	**9.3 Update on thiomersal controls and impact on vaccines**
09:00–09:20	**2. Introduction and objectives of the 2012 Technical Advisory Group (TAG) Meeting**	09:00–09:30	**4.3 The Philippines** • Presentation on opportunities to increase facility–based birth dose coverage • Discussion	09:20–09:40	Discussion
	3. Measles elimination and rubella control				**10. New vaccines**
09:20–09:50	**3.1 Measles elimination status** • Progress report: Achievements and Challenges • Discussion	09:30–10:00	**4.4 Lao People's Democratic Republic** • Presentation on responding to significant challenges • Discussion	09:40–10:05	**10.1 Regional update: progress in new vaccine introduction, key challenges, tools and resources for support**
				10:05–10:15	Discussion
09:50–10:10	*COFFEE BREAK*	10:00–10:30	*COFFEE BREAK*	10:15–10:45	*COFFEE BREAK*
10:10–12:00	**3.2 Interrupting measles virus transmission** • Country presentations and highlights o China o Philippines o Malaysia o New Zealand o Singapore • Discussion	10:30–11:00	**4.5 Hepatitis B Expert Resource Panel** • Presentation on setting target year for 1% goal • Discussion	10:45–11:00	**10.2 Country experiences** • Papua New Guinea – Strengthening surveillance: Use of Binax to increase detection of pneumococcal meningitis
			5. Maintaining poliomyelitis–free status	11:00–11:15	• Viet Nam – Evidence for vaccine introduction: Cost–effectiveness analysis for rubella and rotavirus vaccines
		11:00–11:30	**5.1 Status of global of poliomyelitis eradication — key aspects** • Presentation • Discussion	11:15–11:30	• Discussion
				11:30–11:45	• Malaysia – Vaccination for all ages: Solving the challenges of human papillomavirus (HPV) vaccine introduction
		11:30–12:00	**5.2 China: 2011 poliomyelitis outbreak** • Presentation • Discussion	11:45–12:00	• Philippines – Planning for financing and sustainability of new vaccines: Perspective from a middle–income country
				12:00–12:30	• Discussion
12:00–13:00	*LUNCH BREAK*	12:00–13:00	*LUNCH BREAK*	12:30–13:30	*LUNCH BREAK*

13:00–15:00	**3.3 Key steps towards achieving, sustaining and verifying measles elimination** • Global development on measles elimination • Close immunity gap: Reaching Every Community • Gap analysis: surveillance performance • Performance of the WHO Measles and Rubella Laboratory Network • Highlights of Measles Elimination Field Guide • Discussion	13:00–13:30 13:30–13:45 13:45–14:00 14:00–14:30 14:30–15:00	**5.3 Viet Nam: Vaccine derived poliovirus (VDPV) emergence** • Presentation • Discussion **5.4 Regional Certification Commission: main conclusions and recommendations (November 2011)** • Regional aspects of surveillance, immunization and outbreak preparedness • China poliomyelitis outbreak response • Discussion **5.5 Regional poliomyelitis laboratory network** • Key developments to improve quality and timeliness of poliovirus detection • Discussion **5.6 Maintaining poliomyelitis-free status** • Understanding the threat, assessing the vulnerability and mitigating the risks • Discussion **6. Maternal and neonatal tetanus elimination (MNTE) update: main regional and global aspects**	13:30–15:00	**11. Partnership – Interagency Coordinating Committee (ICC) Meeting** **12. Drafting conclusions and recommendations**
15:00–15:20	*COFFEE BREAK*	15:00–15:30	*COFFEE BREAK*	15:00–15:30	*COFFEE BREAK*
15:20–16:00 16:00–16:45 16:45–17:00	• Verification of measles elimination in the Western Pacific Region • Discussion **3.4 Beyond measles elimination** • Synergy of measles elimination and rubella control • Measles and equity in immunization • Discussion **3.5 Regional actions on measles elimination**	15:30–16:00 16:00–16:30 16:30–17:00	**7. Introduction to Global Vaccine Action Plan** **8. Strengthening national immunization programmes regional update and current priorities** • Discussion on both agenda items	15:30–16:30 16:30–17:00	**13. Review draft conclusions and recommendations** **14. Closing**
18:00	**REGIONAL DIRECTOR'S RECEPTION**				

3. CONCLUSIONS

The main conclusions of the meeting were as follows:

3.1 General

The Western Pacific Region entered the second decade of the 21st century with continued regional progress towards achieving immunization goals, including strengthening immunization systems, achieving measles elimination and the hepB control milestone by 2012, completing MNTE, maintaining poliomyelitis-free status and accelerating introduction of new and underutilized vaccines.

Major global immunization goals and targets can be accomplished successfully. There is great utility in establishing and monitoring such regional goals to focus attention on major immunization priorities, the technical and programmatic requirements to address these priorities and the human and financial resource mobilization required. However, achievement of current regional goals and targets is facing critical challenges in several countries.

The TAG meeting was an opportunity to review regional and country progress. Countries can learn from each other's experiences and challenges. The TAG works out and can share advice with countries and the Western Pacific Regional Office on recommended actions to improve programme performance and enhance progress towards achieving regional goals and targets. The ultimate goal of this process is to protect more children and adults against VPD, disability and death.

3.2 Measles elimination

The Region is making good progress towards measles elimination and achieving the goal in all countries is feasible provided political and financial commitments support the activities that must be undertaken. Only 16 550 measles cases (18.3 per million population (annualized) were reported in the Region from January to June 2011, a considerable reduction from the 48 48 cases (27.0 per million population) in 2010, 61 297 in 2009 (34.0 per million) and 145 949 (81.6 per million) in 2008.

The TAG appreciates the intensive and successful efforts of the many countries conducting SIAs in the latter half of 2010 and 2011 that have contributed to this decrease, including those in Papua New Guinea (from June 2010 to July 2011), China (September 2010), Viet Nam (from September to November 2010), Cambodia (from February to April 2011) and the Philippines (from April to June 2011). The Lao People's Democratic Republic was to conduct an SIA targeting people nine months old to 19 years old from November to December 2011.

Routine immunization coverage has also improved. WHO estimates of regional MCV1

coverage were 97% in 2010 compared with 96% and 95% in 2009 and 2008, respectively. MCV2 was included in the routine immunization schedule of 32 countries and areas, with regional coverage reported at 91%. Surveillance performance improved from January to June 2011 compared with prior years.

The discarded measles case rate was 3.0 per 100 000 population (target ≥2.0, and up from 2.6 in 2010), and blood specimens were collected from 71% of suspected measles cases (target ≥80%, and up from 68% in 2010). Virus detection and molecular analysis are occurring in more countries and areas and the number of cases with genotype data is increasing in several countries, including Japan, Malaysia, New Zealand and the Republic of Korea.

Nevertheless, no country should become complacent. High levels of two-dose measles vaccination coverage through routine and/or supplementary immunization are necessary to limit or interrupt transmission of measles virus until the virus is eradicated globally.

Further progress will require recognition of and action to mitigate immunization gaps. Geographic and social disparities in immunization programme access and utilization exist in several countries. Strategies to reach every community and child (rather than every district) include specific community- and child-focused strategies that are being conducted in Cambodia, the Lao People's Democratic Republic, Papua New Guinea and the Philippines.

Despite the high reported coverage from SIAs, residual chains of measles virus transmission may be identified afterwards in remote geographic areas, as occurred in Viet Nam, or in age groups not targeted by the SIA, as in Cambodia. The TAG is concerned that remaining immunity gaps among older age groups in Cambodia threaten measles elimination efforts in that country.

Current administrative coverage data may not be accurate and actual coverage may be lower than reported coverage. Coverage monitoring tools such as rapid coverage or convenience assessments have been used extensively during the recent SIAs in Cambodia, Papua New Guinea and the Philippines to identify missed children at the community level and also may be used to monitor routine EPI coverage.

Epidemiologic data from an increasing number of countries, such as China, Malaysia, the Republic of Korea (in 2007) and Singapore, suggest that infants less than 9 months old represent a substantial proportion of reported measles cases. This could be an indication of increasing vulnerability to measles infection at younger ages that paradoxically would result from health system improvements.

Well-functioning immunization programmes result in fewer mothers with natural immunity to measles that confer low levels or no maternal antibody to their newborn infants. Improved health care access results in increased risk of nosocomial transmission after infected cases of any age are brought to health facilities during the prodrome or shortly after rash onset

and infect susceptible infants and children.

In addition, some countries that administer MCV2 at six or seven years old (e.g. Malaysia, Singapore) have reported a high proportion of cases among children 1-5 years old. The WHO position paper on measles vaccine (WER 2009; 84:349-360) notes that in countries with low measles transmission (that is, those that are near elimination) and where MCV1 is administered at age 12 months, the optimal age for delivering routine MCV2 is based on programmatic considerations that achieve the highest coverage of MCV2 and, hence, the highest population immunity.

Administration of MCV2 at age 15–18 months ensures early protection of the individual, slows accumulation of susceptible young children and may correspond with other routine immunizations (for example, a DTP booster).

Further progress towards measles elimination also will require addressing surveillance gaps at the subnational level. Only 34% of second-level administrative units have reported at least one discarded measles case per 100 000 population. Regionally, the method of measles confirmation in the first half of 2011 was by clinical criteria for 51% of confirmed cases and only 1% are confirmed by epidemiologic linkage.

As countries approach measles elimination, case classification becomes more complex as a greater percentage of immunoglobuline M (IgM) positive cases may be falsely positive. In addition to standard clinical and laboratory criteria, additional criteria such as the duration and nature of rash, magnitude of fever, clinical course of disease, etc., may be used as additional evidence to confirm or discard measles. Expert review committees, such as those used for poliomyelitis, may be needed.

Moreover, collection of specimens for virus detection and molecular analysis (e.g. throat swabs) are becoming critically important to track the migration of viruses and help assess whether new cases are imported, import-related or vaccine-associated.

At the 61st Regional Committee Meeting in October 2010, Resolution WPR/RC61.R7 urged the Member States "to establish an independent national verification process for measles elimination following the establishment by the WHO Regional Office for the Western Pacific of standardized regional verification mechanisms" and requested the Regional Director "to establish regional verification mechanisms for measles elimination."

Separately, a regional Technical Consultation on the Verification of Measles Elimination in the Western Pacific Region was held in June 2010 in which partners and representatives from eight Member States participated. The outcome of the consultation included guiding principles, structure, function, components and proposed indicators of verification for the Western Pacific Region. The participants of the consultation recommended considering various types of evidence to verify measles elimination in different countries.

Recommendations

(1) The general recommendations from TAG 19 remain valid. In regard to establishing a regional verification mechanism, the TAG urges the Regional Director to form an independent RVC as soon as possible in accordance with the 2010 Regional Committee Resolution WPR/RC61.R7. Once formed, the RVC may want to carefully review the proceedings, conclusions and recommendations of the June 2010 Technical Consultation for the Verification of Measles Elimination in the Western Pacific Region and, in consultation with countries and areas of the Region, develop processes for verification of measles elimination, including the RVC's terms of reference, verification guidelines, and working criteria for verification.

As variation exists in measles elimination status across the Region, the RVC may want to include assessments of progress towards measles elimination in its terms of reference. In view of the 2010 Regional Committee resolution and 2010 Regional Consultation recommendations, the TAG recommends that the RVC consider various types of evidence in verifying measles elimination in different countries (e.g. a province-by-province approach in very large countries). Such evidence would include both quantitative data and a qualitative, historic review of epidemiologic and virologic trends as well as programmatic performance. During this process, the RVC will continue to draw upon the experiences and lessons learnt from the Pan American Health Organization in addition to the plans and approaches being implemented by the RVCs of the Eastern Mediterranean Region and the European Region.

(2) As described in "Monitoring Progress Towards Measles Elimination" (WER 2010; 85:490-495), the TAG affirms the definition of measles elimination as the absence of endemic measles virus transmission for at least one year. Measles incidence is a useful measure for monitoring progress towards measles elimination. However, attaining measles incidence of <1 per million population is not a requirement for elimination as imported and import-related cases may occur at levels corresponding to a higher incidence rate.

(3) Countries may want to make extra efforts to improve measles and rubella surveillance sensitivity (i.e. at the subnational level) and improve the quality of case investigations, including collection of all core variable data, adequate confirmatory sample collection and testing, contact tracing, proper case classification and collection of samples for virologic testing (e.g. throat swabs).

(4) Surveillance data quality and content may be analysed and used regularly at national and subnational levels in all countries. This is particularly important to identify residual areas of virus transmission and appropriately target outbreak response immunization or mopping up activities, including after SIAs.

(5) Recognizing the impressive progress made towards achieving the regional measles

elimination goal in the Western Pacific Region, the TAG recommends that countries may want to be prepared to control measles outbreaks in emergency settings and may want to develop national measles outbreak preparedness and response plans and identify sources of funding to enable a comprehensive and timely response to measles outbreaks, according to the updated guidelines on "Response to measles outbreaks in measles mortality reduction settings".

(6) In the setting of outbreaks, timely reporting, investigation and appropriate isolation of suspected measles cases may be conducted and vaccination of infants 6–11 months old against measles may be considered.

(7) The TAG suggests that countries with demonstrated immunity gaps in pre- school and school-age children ensure MCV1 immunization as early as the national schedule will allow and consider adjusting the timing of the administration of MCV2 (MR or MMR), preferably between 15-24 months old, to reduce the accumulation of susceptible children over time. Regardless of the strategy or schedule followed, children may be screened for their measles vaccination history at the time of pre-school or primary school entry and those lacking evidence of receipt of two doses may be vaccinated.

(8) Recognizing an increasing role of adults in measles virus transmission in some countries, the TAG recommends that countries routinely may want to ensure protection of those at high risk. This group includes students, migrant workers, military recruits, health care workers and employees in the travel and tourism industry (e.g. transport workers, hotel and resort workers, etc.). Additional study may be useful to better define routes of measles virus transmission among adults.

(9) Countries may want to ensure cooperation with other sectors, such as education, local community and media, especially in light of increasing parental concern about vaccination safety. Countries should promote the fact that the benefit of immunization far outweighs potential side-effects.

(10) To protect the results from their recent SIA, Cambodia may want to consider expanding the target age and geographic scope of its planned SIA beginning 31 October 2011 to include at a minimum districts where measles virus transmission is continuing. Accelerated introduction of RCV through a wide age range SIA in 2012 would be an important additional strategy for Cambodia as well as other countries to more definitively address measles susceptibility among older children, adolescents and adults while also accelerating control of rubella transmission and the risk of CRS.

(11) The TAG agrees with Papua New Guinea's plan to conduct its 2012 SIA within three to four weeks. The TAG recommends that government authorities use restructuring opportunities to strengthen immunization services and VPD surveillance management. The TAG encourages the Lao People's Democratic Republic to ensure at least 95% coverage among people targeted

in the MR vaccine SIA in November 2011 and to intensify surveillance to identify and eliminate any residual areas of measles virus transmission.

3.3 Rubella control

Rubella affects countries unequally in the Western Pacific Region. Those that have had universal RCV immunization for decades have high levels of control while others that have not yet or only recently introduced RCV remain highly endemic. The CRS disease burden is underreported and underrecognized in many countries in the Region.

Awareness of rubella and CRS is increasing, particularly in the six countries that have not yet introduced RCV into national immunization programmes. Four of those six countries (Cambodia, the Lao People's Democratic Republic, Papua New Guinea and Viet Nam) are taking actions to determine the disease burden of CRS and explore sustainable strategies to introduce RCV.

The new WHO position paper on rubella provides countries new guidance on RCV use. In the position paper, WHO recommends that countries use the opportunity provided by accelerated measles control and elimination activities to introduce RCV. All countries that have not yet introduced RCV and are providing two doses of measles vaccine through routine immunization and/or SIAs may want to consider the inclusion of RCV in their immunization programmes. To avoid the potential increased risk of CRS, countries may want to achieve and maintain immunization coverage of 80% or greater with at least one dose of RCV delivered through routine services or regular SIAs, or both.

Recommendations

(1) The TAG welcomes the recently published WHO position paper on rubella vaccine (July 2011) and the new guidance that it provides on expanded introduction and use of RCV and recommends that countries and areas adapt their policies accordingly.

(2) The TAG recommends that the six countries that have not yet introduced RCV may want to take steps to introduce the vaccine. Their introduction plans may include raising awareness among policy-makers and relevant professional societies, explore actionable strategies to integrate RCV into their national immunization programmes and identify mechanisms to financially sustain its use.

(3) Based on the revised WHO position paper on rubella vaccine, the TAG recommends the following strategies to use RCV (MR or MMR) to accelerate rubella control:

(a) Countries should use opportunities afforded by the two-dose measles vaccination strategy recommended by WHO to provide RCV.

(b) The preferred approach is to begin with RCV in a wide age-range campaign,

targeting age groups predominately affected, followed immediately with the introduction of RCV in the routine programme. As with all SIAs, appropriate AEFI surveillance should be in place.

(c) All subsequent follow-up campaigns may want to strongly consider use of RCV.

(d) The first dose of RCV can be delivered at nine months or 12 months old (eight months old age in China) in accordance with the existing national immunization schedule for measles vaccine.

(e) All subsequent follow-up campaigns may want to use RCV.

(f) Countries introducing RCV may want to achieve and maintain immunization coverage of 80% or greater with RCV delivered through routine services and/or regular SIAs.

(g) Countries may want to provide RCV together with MCV and hepB vaccine to all health care workers, where possible.

(4) In considering accelerated introduction of RCV through SIAs that target wide age groups, countries and partners also may want to consider the added benefits of definitively addressing residual measles susceptibility among adolescents and adults as part of the Region's efforts to eliminate measles.

(5) The TAG suggests that countries with concerns about susceptibility to rubella among CBAW based on age distribution of rubella cases, CRS surveillance or other evidence identify effective solutions to protect the respective population group and mobilize the resources required

for this purpose. Ideally, such efforts can be combined with increasing population immunity against measles among susceptible adolescents and adults.

(6) The TAG encourages countries that have not yet established CRS surveillance to do so when possible, with technical support from WHO and partners, and by applying lessons learnt from CRS surveillance pilot projects and from other countries with existing CRS surveillance

(7) Countries may want to provide sufficient RCV availability to ensure uninterrupted routine and supplementary immunization (when planned). Countries that manufacture RCV may want to

ensure sufficient production capacity to meet the national immunization programme needs.

(8) The TAG reaffirms 2015 as the operational target year to achieve the targets of rubella control (<10 rubella cases per million population) and CRS prevention (<10 CRS cases per million live births) in the Western Pacific Region, as stated in the 2009 TAG 18 recommendations.

(9) GAVI-eligible countries may want to be prepared for potential submission of

rubellacontaining vaccine applications in 2012, including for implementation of a large-scale SIA as the preferred approach to RCV introduction.

Hepatitis B control

The Region has made important progress in hepB control. Estimates based on the 2007 birth cohort suggest that the regional milestone of reducing chronic infection rates to <2% among children at least 5 years old has likely been achieved; 27 countries are likely to have reached the 2012 milestone. The nine countries that have not met the recommended immunization targets challenges with fully implementing birth dose vaccination in health facilities and vaccinating newborn infants delivered without skilled professionals. Countries are largely interested in conducting seroprevalence surveys to monitor impact, guide programmes or provide data for the verification of hepB control. Progress has been made in the verification process and in the numbers of countries requesting verification. Lack of funding is a barrier to making gains in the most difficult countries and conducting seroprevalence surveys.

Recommendations

(1) The TAG is pleased that the 2012 <2% milestone is likely to be achieved regionally and by at least 27 countries. With this progress, the TAG requests that the HepB ERP propose the target year for the <1% goal that was adopted during the 2005 Regional Committee Meeting. This should be done by early 2012 in time for endorsement by the TAG and inclusion in the 2012 Regional Committee Meeting.

(2) In the year preceding the 2012 hepB milestone, the TAG urges priority countries and the Region to commit resources and attention to improving birth dose and three-dose vaccination coverage. Specifically:

(a) Maximize birth dose coverage among facility births by assessing and ensuring birth dose implementation in health facilities.

(b) Collaborate with MCH programmes to maximize birth dose coverage among births delivered at home by skilled birth attendants (SBAs) and to explore strategies for reaching newborn infants not delivered by SBAs.

(c) Strengthen recording and reporting of birth dose vaccination, especially distinguishing vaccine given within 24 hours of birth.

(3) The TAG endorses the ERP recommendations from their February 2011 meeting, including:

(a) The following countries and areas may want to conduct hepB serosurveys in the next 12 months to assess chronic infection rates among vaccinated cohorts: Cook Islands,

French Polynesia, Guam, the Federated States of Micronesia, New Caledonia, Niue, Nauru, Tokelau, Tuvalu and Wallis and Futuna.

(b) The following countries may want to begin verification of achieving regional targets in the next 12 months: American Samoa, Australia, China, Fiji and New Zealand. In addition, final results from the Mongolia national serosurvey also suggest readiness for verification.

(4) Funding constraints have been a deterrent to progress. Given GAVI's successful pledging meeting in June 2011, the Western Pacific Regional Office should pursue the possibility of restarting GAVI's funding for monitoring the impact of their investment in hepB control along with support for increasing birth dose coverage in GAVI countries.

3.4 Maintaining poliomyelitis-free status

The TAG concurs with the conclusion of the RCC on the poliomyelitis-free status of the Region and likewise considers having been certified poliomyelitis-free for 10 years a remarkable achievement.

The TAG regards the continuing risk assessment on the potential of imported WPV to spread and cause poliomyelitis outbreaks as critical and is impressed with the various risk mitigation activities carried out. However, the TAG also notes with great concern that surveillance performance levels in some countries remain at very low levels or are declining and that still not every country has an updated and fully endorsed WPV importation preparedness plan in place.

The TAG congratulates the China CDC and the WHO Regional Offices involved (Western Pacific, South-East Asian, European and Eastern Mediterranean) for organizing the coordination workshop among poliomyelitis-free countries and regions "Securing the gains: How international collaboration can protect poliomyelitis-free areas" in Urumqi, Xinjiang, China in July 2011. The TAG finds it impressive that China, India, Kazakhstan, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, the Russian Federation, Tajikistan, Uzbekistan and Viet Nam jointly identified in this meeting various options for closer cross-border and other collaboration mechanisms for becoming poliomyelitis-free and maintaining poliomyelitis-free status.

Recommendations

(1) The TAG supports the RCC request that all countries may want to do their own risk assessment exercise and particularly at the subnational level, as appropriate. The TAG would like to receive the results of these risk assessments submitted to the next RCC meeting. Based on these risk assessment results, periodic preventive SIAs, ideally in combination with other interventions, should be conducted if indicated.

(2) The TAG again urges all countries that they may want to ensure that an updated and adequately endorsed WPV importation preparedness plan is in place, as appropriate, and submit copies to the RCC.
(3) The TAG reminds the WHO Secretariat to also update the response plan of the Regional Office.
(4) The TAG encourages all countries and partners involved in the Urumqi meeting to explore how the recommendations and action points from the meeting can be implemented in a rapid, practical and collaborative manner and continued intercountry dialogue maintained. The results of this meeting should be widely disseminated and similar such meetings be convened as appropriate.
(5) Otherwise its recommendations made at the 19th TAG meeting remain valid.

3.5 Vaccine preventable diseases laboratory networks

Poliomyelitis, measles/rubella and JE

VPD laboratory networks have given valuable support to achieve regional measles elimination, to maintain poliomyelitis-free status and to support JE control efforts by providing high-quality laboratory data from network laboratories in the Region. The TAG welcomes the efforts to integrate and learn from the pre-existing model of poliomyelitis and measles/rubella laboratory networks in the establishment of new vaccine laboratory networks, including JE, IBD and rotavirus. The TAG expresses concern about the funding gap to support laboratory activities in priority countries.

Recommendations

(1) Recommendations from the second VPD Laboratory Networks Meeting, including the ones for the poliomyelitis and measles/rubella laboratory networks, are valid.
(2) For the JE laboratory network, the TAG recommends that the Western Pacific Regional Office continue to strengthen the quality of the network laboratories through annual accreditation according to WHO guidelines. The TAG also encourages the Western Pacific Regional Office to work with the South-East Asian Regional Office to share current laboratory data regularly among the two Regional Offices and participating Member States, considering the common goals and challenges in implementing laboratory-based JE surveillance.
(3) Recognizing the critical and expanding roles of VPD laboratory networks, the TAG strongly urges the Western Pacific Regional Office to pursue all possible ways to fill the funding gap, in collaboration with partners and donors.

3.6 Maternal and neonatal tetanus elimination

The TAG notes the continued progress towards MNTE in all countries concerned and how collaboration of EPI with other health programmes such as MCH and nutrition can benefit improvements in health systems. In particular, the approach taken in China offers valuable lessons regarding not only this collaboration but also demonstrates other parts of the health sector, including health care reform (e.g. subsidy for hospital delivery) being used to achieve the MNTE goal.

Recommendations

The TAG considers its recommendations made at the 19th TAG meeting still valid and particularly emphasizes the value and potential synergies among EPI, MCH and other related health programmes.

3.7 Routine immunization programme

Routine immunization is the foundation of VPD control and elimination efforts. The TAG considers essential high-quality routine immunization with high coverage. The TAG recognizes that due to the diversity, particularly in developmental status, among countries in the Western Pacific Region, different practices in implementing immunization strategies exist. The TAG notes the work being conducted by the WHO Secretariat (mainly based on review and analysis of WHO-UNICEF JRF data) to categorize countries into three main groups accordingly as described in the respective section of the body of the meeting report.

Group A: Routine immunization with two doses of MCV
+ School-entry immunization requirement or recommendation

Group B: Routine immunization with two doses of MCV
+ School-entry immunization check/School-based Immunization
+ Mass vaccination campaigns

Group C: Routine immunization with one dose of MCV
+ Mass vaccination campaigns
+ "Reach Every District" approach

Routine Group Immunization
MCV Schoolentry
RED
SIAs
A 2 +
B 2 + +
C 1 + +

During this TAG meeting, multiple excellent examples of different implementation work

in countries were presented and offer valuable lessons about how to identify the key challenges and work out appropriate solutions to strengthen ultimately routine immunization systems.
China, Japan, Malaysia, the Republic of Korea and Viet Nam reported about the implementation of school-entry immunization requirements, checks and recommendations or school-based immunization and its impact on improving routine immunization coverage at school entry and subsequent acceleration and maintenance of measles elimination.
China, Cambodia and the Lao People's Democratic Republic have been making efforts on identification of high-risk areas and populations to strengthen routine immunization service at the subnational level. These include:
(1) Conducting annual district risk assessment followed by high-risk area mop-up vaccination (Guangxi Province, China).
(2) Using a national EPI review, SIA and MNTE risk assessment to identify a high-risk community (Cambodia).
(3) Working with WHO in developing an assessment tool for district EPI performance (the Lao People's Democratic Republic).
Mongolia and Papua New Guinea emphasized how implementation and expansion of "RED and "Reach Every Child"(REC)" initiatives, respectively, result in improving routine immunization services at the subnational level and/or for high-risk areas and populations identified.

Recommendations

(1) The TAG reaffirms that increasing and maintaining routine immunization coverage to reach the global and regional vaccination targets remains essential for all VPD control goals. The TAG reminds all stakeholders that in order to be assured of reported achievements in terms of disease control, data quality and reliability need to be taken into consideration when assessing vaccination coverage.
(2) The TAG welcomes the work initiated by the WHO Secretariat on grouping countries according to current implementation patterns of immunization strategies. The TAG recommends further exploration of the validity and usefulness of such classification.
(3) In terms of consolidating risk assessment approaches, the TAG encourages the WHO Secretariat to further explore how the recent pilot work with the Lao People's Democratic Republic in developing an assessment tool for district EPI performance also could be adapted and applied in other countries. Developing the draft tool further with other countries not only would indicate if there is a potential for a standardized tool but also would build ownership that would be essential for wider use and benefits.
(4) The TAG strongly encourages all countries to foster the creation and maintenance of an

effective NITAG or its equivalent to support evidence-based immunization policy at the country level.

(5) The TAG would like the WHO Secretariat to work out avenues regarding how countries' lessons learnt and good practises developed on strengthening various components in routine immunization programmes can be shared further and disseminated. This should include but not be limited to:

(a) introduction and enforcement of school-entry immunization check;

(b) recommendations on a school-based immunization programme at entry to primary school; and

(c) advocacy with parents and communities on the benefits of immunization (e.g. through further working on annual national immunization weeks).

(6) To facilitate implementation, the TAG recommends collaboration with other programmes and sectors.

(7) The TAG encourages countries to work with MCH/health system programmes for mutual synergies and to seek possible funding support under the Health System Funding Platform (HSFP) from the GAVI/Global Fund.

(8) The TAG 19 recommendations to WHO remain valid.

3.8 Vaccine, cold chain and logistics

Over the past two decades, countries in Western Pacific Region have expanded the cold chain in immunization programme. Many donors (e.g. the Japan International Cooperation Agency (JICA), AusAID, UNICEF, Luxembourg and Germany's GIZ) also have given substantial support to low- and middle-income countries for cold chain expansion. However, countries may want to assess regularly on the status of cold chain equipment.

The TAG had provided recommendations in July 2009 on cold chain inventory, maintenance and replacement, which still remain valid. Efforts should be continued to operationalize this recommendation.

Recommendations

Countries regularly may want to review and update their cold chain inventory and formulate comprehensive strategies to provide preventive maintenance, repair or replacement of cold chain equipment. The TAG provided a recommendation in July 2009 on cold chain inventory, maintenance and replacement, which still remains valid. Efforts should be continued to operationalize this recommendation.

3.9 Immunization safety

Ensuring immunization safety is an essential component for EPI and its importance will continue to grow in this century with the introduction of new vaccines and disease eradication, elimination and control goals. To strengthen the monitoring of immunization safety is more critical when vaccines are being introduced and administered in large populations.
A high-quality AEFI surveillance system is an important part of immunization safety, contributing vaccine quality assurance as well as maintaining a high quality EPI by identifying programme errors and addressing community concerns regarding vaccination.

Recommendations

(1) The TAG encourages all countries to emphasize the importance of immunization safety practises for maintaining high-quality immunization services.
(2) All Member States may want to strengthen their AEFI surveillance system, especially when:
(a) new vaccines are being introduced; and
(b) vaccines are administered in large populations (e.g. SIAs).
(3) The Western Pacific Regional Office should formulate a regional cooperation mechanism for strengthening the capacity of an AEFI surveillance system, including causality assessment.
(4) The TAG recommends that all countries develop a method of rapid proactive authoritative risk communication that includes the need for procedures and staff training. To facilitate implementation by countries, the TAG requests that the Western Pacific Regional Office provide appropriate technical support to respond on a timely basis.

3.10 National regulatory authorities

Ensuring vaccine quality and safety is an essential component of EPI. An independent, competent and effective regulatory system of a country can support assured quality vaccines. Countries may want to strengthen the functions of the NRA with regard to their vaccine source. All Member States recognize the necessity of having an NRA that functions according to WHO guidelines. The NRA also can play a leading role in contributing to immunization safety, particularly through its role in licensing and AEFI surveillance. For countries introducing new and underutilized vaccines, the NRAs should at a minimum have the capacity for licensing and post-marketing surveillance, including high-quality AEFI surveillance.

Recommendation

The Western Pacific Regional Office may want to strengthen regional NRA cooperation by fostering a regional NRA alliance for using limited resources efficiently and providing support to NRAs on request.