Sentinel Sites Surveillance System for Nutrition and Health
Concept note

In response to the Rome Conference on Global Food Crisis, WHO will pursue the following important considerations:

1. The need to underscore the human dimension of the food crisis;
2. The need to monitor its impact on nutrition, health and poverty as well as its effect on the health- and nutrition-related Millennium Development Goals (MDGs);
3. The need for sound information and analyses to ensure that the most vulnerable groups are targeted;
4. The need for health and nutrition inputs for developing and/or scaling up food aid, combined with social protection activities to shield the most vulnerable groups.

This paper describes the proposed essential components related to setting up of a nutrition and health surveillance system to collect, analyse, interpret and report on information about the nutritional and health status of populations and used to inform appropriate response strategies. It seeks answers to essential questions like:

- Who is at risk?
- Where are they?
- Approximately how many people are involved?
- What is happening to them and how is it happening?
- How severe is the situation?
- What is the evolution over time?
- What is already done by the households, communities, government, and international community (food – non food)?
- What assistance is needed (food – non-food)?

Compared to the complexity and cost of a large nutritional surveillance system, sentinel site surveillance is a cheap and relatively straightforward mechanism to measure trends over time. In stead of selecting a nationally representative sample, a limited number of sentinel sites monitor the nutrition situation. The specific advantages of such a system include:

- Useful for chronically vulnerable populations who require close monitoring
- A better understanding of differences by geographical location
- Provides trends over time
- Sites can be selected to monitor specific livelihood groups and areas of low access and poor services
- Despite the fewer sites available, information collected has more depth and detail by incorporating other indicators like market trends and disease outbreaks
- Reduced data turn-around time whereby data is readily available at the site itself
- The costs are less due to fewer sites involved
- Can evoke community mobilization and empowerment using techniques like community based surveillance systems
Useful to trigger more detailed nutritional surveys as and when required
Can be implemented with relatively little capacity
Can be integrated into longer term monitoring system

Despite several obvious advantages the limitations must also be kept in mind and include:
- More accurate to monitor trends than reliable estimates of nutrition status
- Cannot be generalized and information may be biased due to sampling or population movement
- Data quality may be an issue and is often considered unreliable
- Community fatigue common if not followed up by appropriate response
- Extensive supervision/follow-up required
- No international guidelines for sample size, indicators etc available
- Difficult to sustain without appropriate incentives

Objectives:
1. To assess on a continuous basis the nutritional and related health status of a given population
2. To identify and highlight the evolution and projected trends towards a nutritional and health emergency as related to food crisis (with specific emphasis on targeting specific population groups)
3. To allow sufficient time to advocate for and appropriately respond to an impending crisis

The pilot sentinel sites will be established in the most vulnerable districts in Pakistan based on the interagency assessment and other documents as well as the availability of local partners and WHO offices. More sites may be added as and when the opportunity arises. The criteria to select/include a sentinel site include:
- Vulnerable area with regards to food security and health and nutritional status
- Present set-up with trained staff and equipment for anthropometric measurements
- MoH staff present
- Preferably female staff available
- Reference population with access to secondary or specialist facility

Representation of both rural and urban areas will be kept in mind while selecting sites.
Based on WFP's reports on food insecurity in Rural and Urban Pakistan, a list of districts was created that had been assessed 1 to 5 with regards to food insecurity (safe drinking water, IMR, female literacy, immunization rate, RHCs, doctors-patient ratio, LHV-patient ratio). From this list, districts with presence of partners undertaking nutrition interventions and matching the above criteria were selected)
The following are proposed districts with possible partners:

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<th>District</th>
<th>Possible partners</th>
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<td>SINDH</td>
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<td>Dadu</td>
<td>WHO, UNICEF partners (Hope), Kacho, Jordan</td>
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**Critical Processes:**

This section describes the critical processes and events that need to be implemented and maintained in order to operationalize the proposed system.

**Target groups**
The main target group for the surveillance will be children aged 0 to 59 months. This is considered as a good proxy indicator for the general health of the entire community due to the assumptions that:

- children are more vulnerable to external shocks (lack of food, disease etc)
- Their nutritional status is more sensitive to change due to external shocks as well as interventions
- They are easier to access because they are generally at home compared to older age groups
- There are well documented and tested internationally agreed standards for assessing nutritional status

*Sometimes other vulnerable groups (like women, IDPs and minorities) are more nutritionally vulnerable and must be considered if a situation warrants*
**Indicators**
The health environment, social care environment and food security are closely linked to nutritional outcomes and are the underlying causes of malnutrition. It is therefore recommended to include some aspects of these in the surveillance.

1. **Anthropometric indicators:**
These consist of bodily measurements to assess nutritional status:
- Wasting (weight for height and MUAC) as a measure of acute malnutrition
- Underweight (weight for age) as a measure of acute or chronic malnutrition
- Stunting (height for age) as a measure of chronic malnutrition
- Bi-pedal pitting oedema as a measure of severe acute malnutrition (kwashikor)

2. **Health indicators:**
These indicate the current health status as well as immunisation coverage and help determine the vulnerability and potential contribution of health factors to the nutritional status:
- Any illness in last two weeks (from mother/guardian of child measured) with specific mention of diarrhoea, ARI, measles
- Vaccination status with regards to main vaccines
- Vitamin A supplementation in the last six months
- Any deaths in the family in the last 30 days

3. **Care practices:**
These measure practices related to feeding, health and hygiene.
- Breastfeeding practices
- Complimentary feeding
- Young child feeding practices

4. **Food Security:**
This refers to access, availability and utilization of food as well as coping strategies and can predict a worsening food crisis
- Number of meals eaten on the previous day
- Types of food eaten in the last seven days
- Source of food
- Coping strategies

**Data Collection and analysis**

There will be essentially two tools for data collection:
1. Child Anthropometry and illness questionnaire
2. Household food and coping mechanisms questionnaire

A minimum of 60 children will be measured at each site per month and the relevant information entered onto paper forms provided. Guidelines for proper measurement and recording of data will be used to ensure quality at this stage. The household questionnaire will be filled from the same child’s mother/guardian. All forms will be collected by the local partners (WHO surveillance officers and/or national and
international partners). Data will be entered on-site using the Nutrisurvey software. This programme is based on “Guidelines for Nutrition Baseline in Communities” by Rainer Gross et al (www.nutrisurvey.net/ena-epiinfo). It can also be easily modified to develop a separate questionnaire for a specific site. The report functions allows for the preparation of custom specific reports and graphics with a single click. Reports from all sites will be compiled in a central data-base in Islamabad. Filed officers will have the function of a short narrative report where they may record site-specific features and issues (including current interventions and recommendations).

**Data interpretation**

The questions that we wish to answer from this system include the following:

1. What is the nutritional status of the population?
2. Are there any significant geographical differences?
3. Is the nutritional status at an acceptable level?
4. Is the nutritional status improving or deteriorating?
5. What are some of the key factors that may be responsible and how are people coping?
6. Are there any existing interventions and what interventions are needed?
7. How is the nutritional status expected to evolve?

**Roles and responsibilities**

Broadly speaking, WHO will take the lead of initiating sentinel site set-up, coordination of all activities and meetings as well as maintaining a central data-base, analysis of data and reporting in the form of a monthly bulletin and quarterly report.

All partners will be responsible for data collection to include data quality through supervision, monitoring and periodic random data audits. Partners will also be responsible for referring cases of severe malnutrition to the closest referral site and providing health education as and when required.