



SIGHT AND LIFE

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Face-changer at 2nd Micronutrient Forum, Beijing

2nd International Meeting of the Micronutrient Forum – Micronutrients, Health and Development: Evidence-Based Programs

The 2nd International Meeting of the Micronutrient Forum, held in Beijing, China, from May 12–15, 2009, brought together delegates from more than 90 countries, including country-level program implementers and their partners, multi-laterals, donors, researchers, and representatives of the private sector. **Read from the Forum on pages 25, 34 and 57**

Leaving the Chrysalis Behind

Chairman's Concluding Remarks, 2nd Micronutrient Forum, Beijing, May 15, 2009

Alfred Sommer

Johns Hopkins Bloomberg School of Public Health, Baltimore, USA

Correspondence: Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, W1041, Baltimore, MD 21205–2179, USA
Email: asommer@jhsph.edu



Prof. Alfred Sommer, Johns Hopkins Bloomberg School of Public Health

I can't help but reflect on how far this meeting, and our shared journey to control micronutrient deficiency, has come since the first International Vitamin A Consultative Group (IVACG) meeting nearly 35 years ago. It was not as if the world was ignorant about micronutrients – iodine and iron had long been on the agenda. But the world just didn't care. Micronutrient deficiency did not provide the same public urgency, as say, H1N1 Flu. And I believe – at great risk to life and limb, given the make-up of this audience – that nutritional scientists and policy makers were caught in a time-warp of orthodoxy.

IVACG, the earliest progenitor of the Micronutrient Forum (MF), was built by Martin Foreman, of the US Agency for International Development (USAID), to bring together clinical researchers, like myself, with nutritional scientists, policy makers and others who design and implement programs, to pursue *the possibility* that vitamin A deficiency as a cause of childhood blindness might be much greater than the world recognized, and to conduct research that would establish its cause and design effective intervention programs. It proved, as we all now know, to be a major cause of pediatric blindness. But most ministers of health remained disinterested, on the not-unreasonable grounds that they had committed their meager resources to child survival strategies. For those who can remember that far back, there was GOBI¹.

By 1992, multiple teams in multiple countries had conclusively demonstrated that improving vitamin A status dramatically reduced childhood mortality. The ministers of health could prevent up to a million children from dying and going blind every year with one intervention; a “twofer” if ever there was one.

Instead of reveling in this commitment, discussions at IVACG remained acrimonious for many years, riven with fruitless arguments over what constituted a *natural* solution to the problem. Most of the field trials had employed periodic large-dose vitamin A, because it was the quickest and most controlled way to determine whether improving vitamin A status really worked. If it could be scaled, it could dramatically impact the problem. But supplementation was opposed by many nutritionists as an “unnatural” act, insisting, unhelpfully, that the *real* answer was to get people to grow and consume more green leafy vegetables. They eventually, if grudgingly, accepted twice-yearly supplementation but only if labeled a “short-term” measure, until changes in dietary habits solved the problem.

Twenty years later, we are still awaiting those effective dietary changes, while periodic dosing, driven by UNICEF, HKI, and others, and large-

¹GOBI stands for Growth monitoring, Oral rehydration, Breastfeeding, and Immunization – the four cornerstone child survival interventions in developing countries.

ly funded by the Canadian and American governments, has proved to be a remarkably effective and scalable strategy. As we heard from Werner Schultink, in the past 10 years, UNICEF has supplied 5.3 billion high-dose supplements of vitamin A – and that does not count vitamin A dosing with syrup in India. Extrapolating UNICEF estimates, even with current coverage rates of only 70–80%, the lives of 3.5 million children have probably been saved in the past 10 years alone.

I dwell on this because I was struck, at this meeting, by how far we've come from that original orthodoxy; by the range of innovative approaches to micronutrient deficiencies now being vigorously pursued. These include everything from centralized fortification schemes using multiple micronutrients, to “point of consumption” fortification with micronutrient powders in the home. We've heard about wheat flour fortification, UltraRice and NutriRice. We've heard about the pro-active and thoughtful rollout of zinc for home treatment of diarrhea.

As Chairman Mao once proclaimed, “Let a thousand flowers bloom.” They are blooming, and those that prove most successful need to be aggressively pursued as we sharpen the focus of our advocacy, investment, and momentum.

Oh yes, what about those *natural* dietary solutions that had proved so problematic? They might now be on the cusp of realization. Why? Because we are finally developing the tools that the poor needed from the start. Traditional plant breeding has provided a range of staple crops, from corn to sweet potato, with 10–100 times the β -carotene content of their native strains, and, with a bioavailability five times

that of spinach, carrots and kangkung.

What if the staple is rice? Do a little bioengineering. “Golden Rice 2” has nearly thirty times the β -carotene content of Golden Rice 1, while the original native strains have zero. And, like hybrid corn, Golden Rice has a food matrix that favors high bioconver-

days brought something else to mind. The MF must continue to evolve to meet changing challenges. From the start, beginning with IVACG, these meetings were meant to bring clinical researchers together with policy makers and program managers. But, as there wasn't much in the way of programs to talk about, the “center of gravity” sat with the clinical re-



Show at the conference banquet

sion. There's a lot more to learn about these fantastic new crops, such as their yield, or whether traditional populations will consume them. Golden Rice is, well, *golden*, not white. Nevertheless, for the first time, traditional populations may finally have the inexpensive, culturally appropriate food varieties they need to correct their nutritional deficiencies.

It is easy to become impatient to solve the world's micronutrient problem – and we should be. But it took nearly 20 years to begin to come to grips with a single deficiency: vitamin A. Let's *not* be patient; too many lives are in the balance. But, as our host, Prof. Chen Junshi concluded at the start of this meeting, “Feel confident! But we still have a long way to go.” The discussions over the past four

searchers, who strove to document the extent and severity of the problem. It now appears that the center of gravity has begun to shift to the program side.

Innocenti 2006 reached a consensus on the physiological and clinical impacts of many specific deficiencies, and the health benefits of interventions. These formed the core around which the first MF was constructed. Unless someone has a blindingly new insight – say, by discovering vitamin X – we now know most of what we need to know about the most immediate biological consequences of these micronutrients to move forward. New insights, like the exciting light the Nepal cohorts shed on the developmental origins of health and disease, are important intellectual stimulants and a reminder that we

must keep biologists at the table; there is always more they can teach us. And, as we saw demonstrated this morning, we need to be thoughtful in fine-tuning policy conclusions, as for newborn dosing or reduction of maternal mortality, where the specific context can be a determinant.

Innocenti 2008 focused on programs and was the core around which this MF was built. Its bottomline consensus statement is that we don't know nearly as much as we could or should. The Innocenti participants designed a template by which we can learn more as we go, though I must say, David Pelletier's carefully detailed and rationally constructed model reminded me of that old definition of an economist: someone who claims "it may work in practice but it will never work in theory." The many contextual complexities he urged us to consider left me exhausted; it seems a miracle that any intervention program, as presently constituted, actually works. Science is easy – implementation is tough! But as China's salt iodization program and Nepal's vitamin A distribution program demonstrate, enlightened leadership and political commitment can move mountains



Meeting hall at Beijing International Conference Center

One last observation. Much of what we heard were valiant attempts to create markets for new solutions, difficulties in managing supply chains, and problems encountered in reaching remote villages. This, of course, is what managers and the management sciences are all about, particularly those employed in the private sector. We need to recruit these experts to the MF. The marvelous dialogue on Thursday between leaders of multinational companies and those of us in academia, the public sector, and civil society showed exactly why *public-private partnerships* have become the vogue. We must actively work to strengthen these relationships, as the private sector's declaration pledges them to do.

Make no mistake; the world now takes notice. For those of you who don't yet know, Nicholas Christoff, the highly regarded New York Times columnist presently travelling in Africa, extolled the virtues of "that simple vitamin A capsule" in his column yesterday.

It is now my distinct honor to thank our wonderful hosts, the Local Organizing Committee. Quite literally, without the leadership of Prof. Chen Junshi, this meeting would never have taken place. The opening symposium, highlighting the micronutrient status and attempts to combat deficiency in China, ranks as one of the most insightful and thoughtful we have been privileged to hear. To top it off, Junshi then took us off to a fantastic reception, with great food, marvelous dancers, and a master "face-changer."

Plans are already underway for the next MF. We have received, and gladly accepted, an offer from the Prime Minister of Senegal to host the next meeting.



Blind musician in HouHai. The instrument is called *Erhu* (Chinese 2-string fiddle).