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Science to the People: The Development and Dissemination of ORT to the Community

- Through stories, we teach people and effect change *** Miller & Narrative Framework!
- 1967: Cash's first trip to Bangladesh, "East Pakistan" then
- Most densely populated land in the world; 150 million people today
- In the east side of India exists a river delta where great rivers come together to produce a highly fertile land and a dense population.
- Water, fertile land, and sunshine --> easy to grow food. If you throw down a seed, it will grow.
- Although they have the means to produce food due to their climate and surrounding waters, they don't have too much food, just enough to support the population.
- The benefits of the North is their access to fish.
- 1967: diarrheal disease killed 4.0 million children, 28% of world's child population
- Most if not all the major leading causes of death for children could be prevented by vaccination.
- Water-based society produces different cultural habits than one that is dry; i.e. cleanliness and bathing very important
- They focus on the transportation by water, which has its costs.
- Diarrheal diseases caused mostly by bacteria (more severe) or viruses
- Diarrhea is a symptom of an infection, not a disease itself
- Symptoms: low blood pressure, rapid pulse, hyperventilation, floppy movement, sunken features
- Skin turgor - ability for skin to pull back; absent with severe dehydration
- Cholera is the most severe diarrheal disease; can lose 1L/hour of body fluid and die within 6 hours
- Children most susceptible in Summer time after they stop breastfeeding and start crawling around; relatively clean, sensitive guts

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- There are many water passages among the villages, such as ponds where people wash vegetables, and where children play with water.
- 1:50,000 doctor to patient ratio in rural Bangladesh; in the US the ratio is 1:250
- Ineffective transportation (boats, rickshaws, etc.) caused people to wait long periods before seeking help and getting IV fluids; this reality served as the impetus for developing a practical, accessible alternative...
- Mothers would often wait until their child got even more sick before going to the hospital, using the "maybe it will go away" kind of thinking until in most cases it will be too late to seek help. If it is inconvenient to do something, people wait.
- Diarrhea treatment should be: inexpensive, easy to use, deliverable by non professionals, physiologically sound, effective, acceptable
- Main treatment principle for diarrheal diseases: "You give back what you've lost" regarding bodily fluids. To help identify what was lost, special beds were created, where the patient would lay on a plastic substance bed with a bucket under them to identify how much was lost, so it could be replaced.
- ORT with only salt and no sugar (glucose) makes diarrhea worse
- The oral solution was very effective. The patient has to be alert while taking it, and within 12 hours that patient will look very different. From a prune to a plum.
- Diarrhea leads to malnutrition, so many mothers are encouraged to eat fruits and breastfeed.
- When people crowded together diarrhea is not far behind.
- BRAC, the world's largest NGO, sent out female workers to villages to disseminate 7 point ORT plan
- The organization focused more on teaching the women how to make the solution and engage in the 7 point ORG plan, but men and children learned as well.
- Bring the science to where the people are.
- There were many questions on how to make the solution easily available to the people. When they created the packets of the solution, that did not solve the whole problem because now people had difficulty in knowing how much water was enough.

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- To allow families to make ORT themselves, they marked line at 500 cc's in family's existing cup; pinch of salt and scoop of sugar (easy eyeball measurements that do not require anything but hands and common sense).
- Mothers would taste it to know if they had made it correctly for future reference.
- During monitoring follow-ups, BRAC paid workers by their results; salary based on how well mothers had learned the 7 points of information.
- At first, the workers were skeptical and didn't believe in what they were teaching. Results reflected this half-hearted motivation. They needed to BELIEVE in what they were doing to teach effectively. Once they did, results improved.
- What was at one point tough for women to learn, soon became common knowledge.
- Bangladesh uses ORT more than any other place in the world.
- Lessons: need good science, professional/political commitment, take research to the people and learn from them to promote evidence-based interventions and overcome the know-do gap (where we don't do what we *know* is good for us/others), context determines how success is measured, & low-cost, acceptable, attainable and sustainable interventions are often better than those that are more high-tech.
- Cash applied bamboo & thatched-roof cholera hospitals (supplied with ORT and cholera cots) erected in 24 hours during the 2007 Bangladesh outbreak to the ebola epidemic in West Africa. Ebola patients need fluids. Why isn't a similar measure being implemented to care for infected persons?
- In the 2007 Diarrhea Outbreak which was caused by the flooding due to heavy monsoon rains, 44 thousand cases were reported. In trying to overcome this outbreak, people joined together to create bamboo structured hospital areas, beds and any other necessities. Family members played a major role in helping patients. Due to the small ration between the sick and nurses, family members were taught how to assist the sick, which was a great help.
- Lessons: Organization, treatment protocol, assessment, family involvement, same treatment.
- No ORT in Boston hospitals. Why? Insurance companies reimburse hospitals \$150 for IV fluids; ORT per patient costs about \$1.
- Marisabel's point: we're taught to rely exclusively on the healthcare system's hi-tech solutions (i.e. IVs vs. ORT), which breeds a sense of inadequacy in caring for ourselves and our loved ones

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- Quotes:
- “We give the best in the world, we tell ourselves...is it really the best?” - Richard A. Cash, MD, MPH
- “Chance favors the prepared mind” - Louis Pasteur
- “You cannot step in the same river twice” - Heraclitus
- “Everything should be as simple as possible but not one bit simpler” - Albert Einstein