

**Participatory Hygiene and
Sanitation Transformation (PHAST)
prevent child parasitic enteric
infections in Kyrgyz villages.**

**Dramatic health improvements
before improved water supply**

The Kyrgyz Republic



- Kyrgyz population: 5 million
- 3 provinces' population: 1.2 million (children under 10 years: 200,000)
- Poverty: \$12/month for 60% of the rural wage earners
\$8/month for 30% of the rural wage earners

Village Initiative Groups (VIG) train school children and mothers using the PHAST method.



PHAST method:

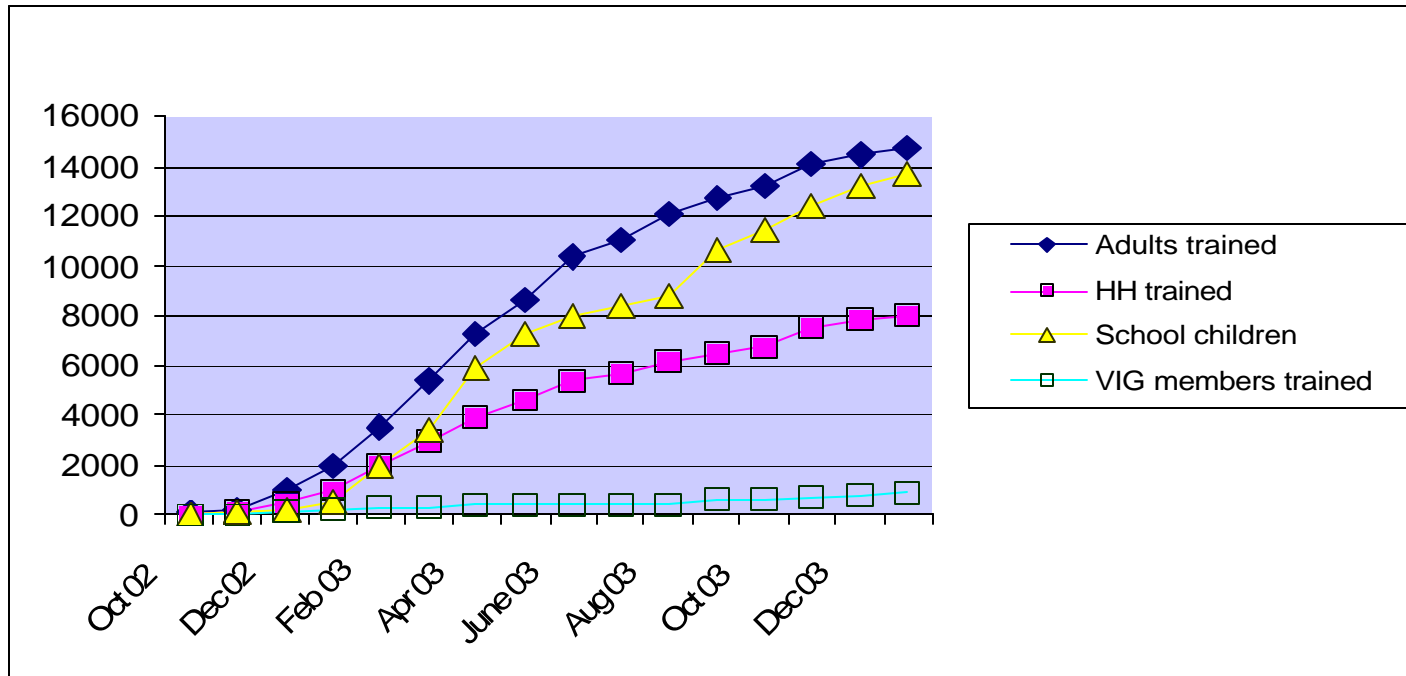
- based on “a participatory approach”
- is a community mobilization process
- is not “top-down” regulations
- is self-discovery of own health problems
- is self-analysis of health problems
- is a participatory in finding solutions
- encourage to take personal responsibility for health
- encourage to behaviour change

PHAST method:

- is for adults and children
- uses pictures to display good and bad practices
- is learning by playing, discussions and discovery



Cumulative number of villagers trained in 3 provinces during one year of PHAST



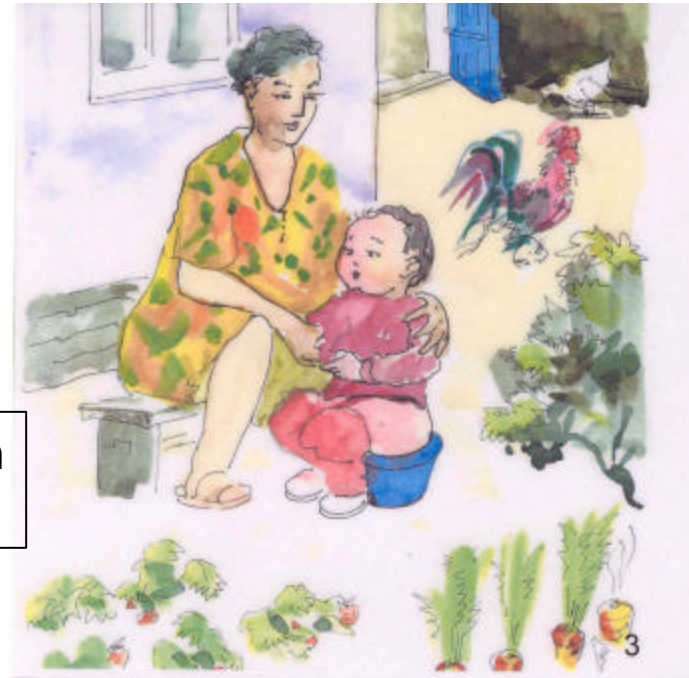
17 PHAST Trainers

Village volunteers
VIG (840)

Village people
(26,000)



Hand washing
after
defecation



Safe collection
of child feaces

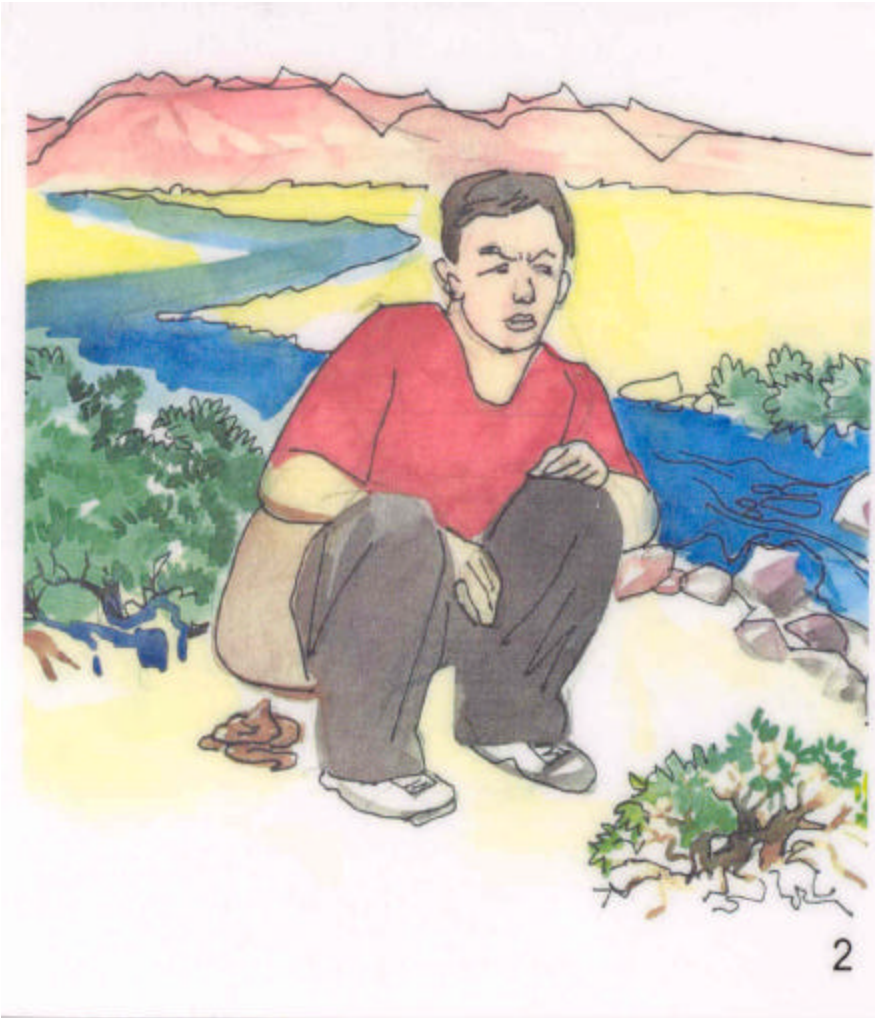


Boiling water
for drinking and
safe storage



Safe disposal of
child feaces

Examples of PHAST strategy:



bad behavior



good behavior

Child examination before and after PHAST in one village before correcting for confounding factors.

	Giardiasis, % with infection	Enterobiasis, % with infection
June 2003 examination, baseline	52/158 = 33%	76/156 = 49%
October 2003 examination, after an average 7 months of PHAST	11/144 = 8%	36/144 = 25%
Four-month lasting reduction, before correcting for external factors:	76%	49%

- Impact of PHAST before any change was made to village water supply.
- The proportion of children with *Giardiasis* was 76% lower and the proportion of children with *Enterobiasis* was 49% lower after the four month PHAST period.
- Before and after intervention reduction does not account for confounding (external) factors (poverty, prosperity, weather, water, pollution and etc.)
- A randomised controlled trial approach was needed to calculate the effect of PHAST on disease reduction

Odds ratio for ability of PHAST to prevent Giardiasis among school children.

Randomised Controlled Trial Approach

<i>Odds Ratio</i>	OR =	0.26
Upper limit	OR+ =	0.48
Lower limit	OR- =	0.14
<i>Confidence level</i>	CL =	0.95

Risk Reduction including external factors beyond PHAST

Relative Risk Reduction

RRR =

68% (due to PHAST)

Number to train

NNT =

6.5

Odds Ratio for ability of PHAST to prevent *Giardiasis* among school and pre-school children.

Randomised Controlled Trial Approach

<i>Odds Ratio</i>		<i>OR</i>	=	<i>0.38</i>
Upper limit		OR+	=	0.55
Lower limit		OR-	=	0.26
<i>Confidence level</i>		CL	=	0.95

Risk Reduction

Relative Risk Reduction	RRR	=	56% (due to PHAST)
Number to train	NNT	=	8.5

HYGIENE BEFORE WATER SUPPLY?



- Re-contamination:
 - without behavior change clean stand-pipe water will be re-contaminated
 - safe drinking water storage and water handling is essential
 - the community must actively want assistance to improve their water supply
- Poverty:
 - water project capital cost at \$70/person (\$420/family) plus running cost of \$3/year (\$18/family each year) adds to existing poverty- poverty causes diseases!
- PHAST:
 - \$4 per person trained: 68% long term reduction in parasitic diseases

Conclusions:

The PHAST method can give significant disease reduction (68%) among children, **before** any improvements to the water supply

- The diseases reduction achieved by PHAST shows how important behavior change is
- Creation of village health and hygiene initiative groups results in community mobilization, responsibility for personal health and behavior change
- Without behavior change there will be no long term reduction in diarrheal parasitic diseases
- Hygiene promotion is needed a minimum 1-1.5 years before promoting a water project and must achieve personal change to support operation and maintenance

Discussion points

- PHAST can give considerable health benefits to communities in extreme poverty where many people are not even able to afford basic medical treatment
- PHAST can also be used as the vehicle for other health campaigns such as HIV
- A Republican Center for Health Promotion (RCHP) can provide long-term sustainable community health and hygiene support to the PHAST VIG
- PHAST allows villages, through “Social Marketing” to discover their needs. This creates a demand for improved water that the people actually want and will support long term.
- PHAST hygiene promotion at \$4 per person trained should be compared to the benefits of Water Project at capital cost of \$70 per person – will this increase poverty?