A comprehensive Fit for School Program Assessment Study (FIT-PAS) was conducted to evaluate the impact of FIT interventions on:

- Water, Sanitation and Hygiene (WASH)
- Handwashing Behavior
- Child Health: Parasitological, Nutritional and Oral Health Status

Data collection included:

- Assessment of WASH facilities in schools
- Observation of handwashing practices after latrine use and interview on handwashing norms done only in Cambodia
- Collection of stool specimen, weight and height measurements, oral health examinations and interviews

The study involved nine of the twelve public primary model schools in Bandung City and Indramayu implementing the FIT program and nine control public primary schools implementing the regular health education curriculum and bi-annual deworming. The study was based on a random selection of 570 Grade 1 students aged six to seven years old at baseline with 85% follow-up rate after two years. Review of school records on school attendance was also done but data had several limitations and were therefore excluded from the analysis.

The research was carried-out by implementing organizations in collaboration with University College London (UCL). Data were collected by trained personnel from the Faculty of Dentistry, University of Padjadjaran (FKG UNPAD), the West Java School Health Team (TP UKS) and the Bandung City and the Indramayu Health Offices. Stool examinations were done by the West Java Provincial Health Laboratory (BLK), the Indramayu District Health Laboratory (LabKes) and the University of Indonesia. FIT-PAS has been conducted in Indonesia as part of a regional study using similar protocols in Cambodia, Lao PDR and the Philippines.
Two years after implementing the FIT program:

> FIT model schools had better access to handwashing facilities, water and soap due to the school-led construction of multiple group handwashing stations (WASHaLOTs).
> In model schools, the ratio of student to water slot was 6:1, contrasting to 74:1 in control schools.
> Encouraged by the program implementation, model schools even went beyond intended program activities by also building handwashing facilities for individual use.

<table>
<thead>
<tr>
<th>Handwashing Facilities</th>
<th>Fit</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of handwashing slots (n)</td>
<td>103</td>
<td>9</td>
</tr>
<tr>
<td>Percentage of handwashing slots with water &amp; soap (%)</td>
<td>87%</td>
<td>10%</td>
</tr>
<tr>
<td>Average number of students sharing one water slot per school (n)</td>
<td>6</td>
<td>74</td>
</tr>
</tbody>
</table>

Two years after implementing the FIT program:

> The student-to-toilet ratio was 99:1 in model schools and 110:1 in control schools indicating that fewer children needed to share a toilet in model schools.
> Model schools had almost twice as many clean and functional toilets (62%) compared to control schools (36%). (Toilet conditions were slightly better in model schools at baseline.)

### Toilets

<table>
<thead>
<tr>
<th>Toilet conditions at follow-up</th>
<th>Fit</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean &amp; functional</td>
<td>62%</td>
<td>36%</td>
</tr>
<tr>
<td>Partially clean and/or functional</td>
<td>33%</td>
<td>48%</td>
</tr>
<tr>
<td>Not clean and/or functional</td>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>Locked</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Indonesia has implemented a national deworming program for schoolchildren over several years. The very low prevalence of worm infection in the FIT-PAS indicates that it works well for children attending participating schools. These low prevalence rates are, however, not in line with figures from other areas of the country or national data, suggesting that the situation in participating schools is much better with regard to STH infections.

Children in model and control schools received the same regular deworming treatment. Therefore, there was no significant difference in STH prevalence between two groups.

Further analysis on the risk of STH infections was not possible due to the very low prevalence in study schools.

FIT-PAS results in other countries indicate that the risk of worm infection is higher for children who:

> had worm infections at baseline – indicating a high reinfection rate,
> attend schools with less functional toilets – underscoring the need for complementary WASH interventions,
> come from poor families or live in rural areas – indicating higher risk for disadvantaged population groups.

Deworming treatment needs to be embedded in overall improvement of WASH conditions at school and complemented with regular practice of hygiene activities.
One out of four children was thin at follow-up. The prevalence of thinness did not significantly change between baseline and follow-up, nor did it differ between FIT model and control schools.

The risk of being thin is higher for children who:

- were already thin at baseline, possibly due to a chronic condition,
- come from large families, indicating that socio-economic disadvantage may be a co-factor for thinness.

The prevalence of overweight at follow-up was 21% in model schools and 15% in control schools. Overweight was thus identified as an emerging public health problem in Indonesia – findings in line with other studies.

In both model and control schools, the burden of oral diseases was extremely high, with almost all children affected by dental caries in the primary dentition at baseline and at follow-up.

At follow-up, one-third of the children had dental caries in at least one permanent tooth. Children in model schools developed less caries compared to control schools. The risk of developing caries was higher for thin children and young children.

The handwashing behavior study conducted in Cambodia showed that children in model schools more often practiced independent handwashing with soap after using the latrine (28%), compared to children in control schools (3%). The study also showed that group handwashing improves descriptive norms – seeing peers wash hands with soap encourages children to wash hands independently at critical times.
Challenges in Health and WASH in Schools in Indonesia

Limited access to well-maintained toilets in control schools.

Limited access to handwashing facilities with water and soap in control schools.

High prevalence of thinness (1 out of 4 children).

Increasing prevalence of overweight (1 out of 5 children).

High prevalence of dental caries.

Success of the Fit for School Program

The Fit program improves access to handwashing facilities, water and soap.

The FIT program stimulates healthy hygiene practices, such as individual handwashing with soap at critical times.

The FIT program supports the implementation of national deworming program.

The FIT program reduces the development of new dental caries lesions.

Conclusion