

C.E.E. PERNOT, M.M.F. VERHEES, R. BONGENAAR, J.E.M.H. VAN BRONSWIJK **Starting young: Improving the indoor environment in primary schools.** *Gerontechnology* 2012;11(2):258; doi:10.4017/gt.2012.11.02.291.00 **Purpose** Compressing of morbidity<sup>1</sup> in the last years or months of life, calls for a health-promoting environment from the start of life. In the Netherlands, however, the indoor environment of primary schools leaves much to be desired, with high concentrations of pollutants, resulting in a decrease in learning ability and an increased risk of chronic pulmonary disease in later years<sup>2</sup>. We developed a building health monitor (BHM) tool that aims to improve the quality of the indoor environment through cleaning and signalling activities by the cleaning companies (CC), and we started a pilot in six primary schools. **Method** From the literature we collected data on (i) the relationship between indoor air quality and productivity, (ii) the contribution of surfaces, ventilation, and heating systems to indoor pollution, and (iii) the production of pollutants by humans in relation to their age. Together with the Dutch cleaning sector organisation (OSB<sup>3</sup>) we expanded common cleaning activities to the management of indoor environmental quality, as resulting from building and building services characteristics, interior decoration, school activities, ventilation, heating and cooling, routine maintenance, surface cleaning, pest extermination, etc. Data was entered in an internet-based database with specially prepared smart phones to be used by CC (Figure 1). School authorities choose the 'health level' of the indoor environment of their own school, and the BHM-system indicates which maintenance, cleaning, and signalling activities will be needed to achieve this. Observed problems or circumstances are sent to persons or organisations responsible for that specific area. Problems that are solved are also entered in the database. The CC-employees are trained for additional tasks, and the CCs enter a different contractual arrangement with the school authorities: from an obligation of best intents (surface cleaning according to a fixed scheme) to a duty to achieve a given result (a certain 'health level'). **Results & Discussion** The pilot in 6 primary schools is still running. Current health levels of the class rooms have been assessed. A first assessment version of pollution and health algorithms has been devised, and together with CC-personnel the smart phone user interface has been developed. In addition both CCs and schools agreed to the new processes. The different stakeholders saw varying advantages to the BHM-tool. CCs personnel expected a better visibility of their workload, and more respect for their work. CC-managers saw new marketing opportunities, while schools expected less health-related absenteeism, and perhaps better school results. If supported by results, BHM will be expanded to other schools, offices, and households with small children and/or older persons. It may then be seen as a preventive measure to lessen the burden of some pollution-related chronic disease burdening health care for older adults.

## References

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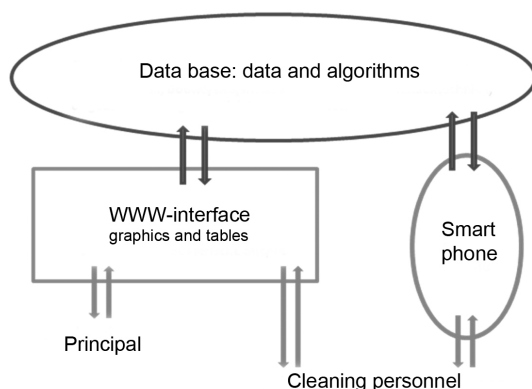


Figure 1. Schematic setup of the Building Health Monitor