

# ***“Online respondent-driven detection for enhanced contact tracing of infectious diseases caused by close-contact pathogens: benefits and barriers for public health practice”***

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## **Abstract:**

**Background:** Online respondent-driven detection (online-RDD) is a novel method of case-finding that may enhance contact tracing (CT). However, the opportunities and barriers of online-RDD for public health practice have not yet been investigated from the perspective of public health professionals (PHPs). Therefore, it is unclear what the potential strengths and limitations of online-RDD for CT are.

**Methods:** We conducted a sequential exploratory mixed methods research. First, we conducted semi-structured interviews with Dutch PHPs involved in CT. Questions were derived from the *diffusion of innovations* theory. Second, we distributed an online-questionnaire to 260 Dutch PHPs to study the main findings in a larger population. We used hypothetical scenario's (scabies, shigella, and mumps) to elicit PHPs' perceptions of online-RDD.

**Results:** Twelve interviews were held. Response rate to the online-questionnaire was 31% (n=70). Four themes related to attributes of online-RDD that influenced PHPs' intention to adopt online-RDD emerged: advantages over traditional CT, task conflicts, public health risks, and situational compatibility. PHPs believed online-RDD may enhance CT through increased reach, low-key communication options, and saving time. Limitations were foreseen in the delivery of measures, supporting patients and contacts, missing information and contacts, and causing unrest. Online-RDD may be particularly applicable in situations with digitally skilled and literate target populations, low urgency, low time-pressure, and a simple perspective for action. A majority of PHPs (70%) had a positive adoption intention towards online-RDD.

**Conclusions:** PHPs perceived online-RDD as beneficial to public health practice. Further development of online-RDD should focus on facilitating opportunities for personal contact between PHPs, patients and contacts. A comparative study of 'traditional' CT and online-RDD could yield further insights in the potential of online-RDD for public health practice.

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