Liverpool Covid-SMART Pilot Evaluation

Systematic Meaningful Asymptomatic Repeated Testing (SMART)
to reduce SARS-CoV-2 transmission and harms from Covid-19 control measures

1st December 2020,

Purpose: This note summarises the goals, evaluation criteria and planned evaluation deliverables from the Liverpool pilot of community testing for Covid-19 resilience and recovery.

Background: On 6th November 2020, Liverpool City Council, NHS Test and Trace (Department of Health & Social Care), NHS Liverpool Clinical Commissioning Group, Cheshire & Merseyside Health & Care Partnership, and The University of Liverpool (evaluation partner), embarked on a national pilot of 1) offering easy access to SARS-CoV-2 testing for people without Covid-19 symptoms, then 2) using these facilities, and the data from them, to target testing to reduce SARS-CoV-2 transmission while Covid-19 control measures are eased to alleviate their health, social and economic harms. Substantial capacity of lateral flow tests (LFT) had already been secured; therefore, the pilot’s purpose was to determine best use of this extant resource for public benefit.

Approach: The original name MAST (mass, asymptomatic, serial testing) was changed by the partners to SMART (systematic, meaningful, asymptomatic, repeated testing), to better reflect the targeted and open-access community testing model being developed. SMART has three components: 1) ‘test-to-protect’ vulnerable people and settings; 2) ‘test-to-release’ people sooner from quarantine than the stipulated period; and 3) ‘test-to-enable’ careful return to restricted activities to improve public health, social fabric, and the economy.

Civic goals: Civic leaders set a mission to “To identify the virus, wherever it is in the City, and empower local communities to suppress its transmission while being supported well when they need to isolate or quarantine. At the same time, to identify those who are needlessly self-isolating and empower them to return to usual activities”. Goals were stated as: 1) saved lives and improved health outcomes for the City’s residents; 2) saved livelihoods and businesses, protecting the City’s economy and social fabric; 3) sooner and safer reopening of the City as a whole.

Evaluation aim and objectives: Partners are evaluating the pilot to inform national and local policies with evidence on the biological, behavioural, and operational systems aspects, and overall public health impacts as follows:
1. **BIOLOGY**: Evaluate:
   
a. post-validation\(^1\) real-world performance of the Innova Lateral Flow Test (LFT) and its field implementation at general population scale for supervised self-swabbing among asymptomatic individuals in a first test, and repeated tests

b. uptake and utility of confirmatory testing with real-time reverse transcription polymerase chain reaction (PCR) tests
c. simulated repeated testing regimens for test-to-release (from quarantine; isolation)\(^2\) and test-to-enable (safe return to usual activities)\(^3\)

2. **BEHAVIOURS**: Understand the factors determining:
   
a. uptake on first and subsequent occasions, by socio-demographic groups

b. acceptance by the public and vulnerable groups
c. drivers for accessing or declining testing for an individual and those they care for (e.g., children or those without capacity)
d. responses to a positive test result
e. responses to a negative test result
f. effective and ethical incentives for participation
g. public trust, understanding, and cooperation
h. role and value of effective partnership working on delivery

3. **SYSTEMS**: Develop nationally generalisable systems for:
   
a. combining intelligence from NHS, local authority, and public health data sources for optimising test site access and for promoting testing with specific groups

b. multi-agency mutual aid to coordinate communications, public health responses and economic recovery activities
c. delivering strong community engagement, sustainable with local logistic systems
d. clarifying purpose - why, when, and for what purpose testing is being performed
e. coordinating pathways - identifying who to test, communicating the need for a test, taking the test, carrying out the test, communicating the result to the person tested and to others who need to know, and ensuring that appropriate next steps happen
f. providing clear and accurate information, based on best evidence, impartial and in plain language, issued to those tested, explaining the consequences
g. assessing the indirect effects of the pilot on other systems such as welfare support and clinical pathways

4. **PUBLIC HEALTH**: Identify the public health impacts on:
   
a. uptake overall and by gender, age, geographical area, deprivation, ethnicity, occupation, high risk and vulnerable groups

b. tackling inequalities in testing uptake (inverse care) and effects
c. virus transmission during the pilot and beyond
d. protecting vulnerable groups
e. contact-tracing of cases and their contacts
f. proportion of the population who isolate or quarantine

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\(^2\) Test-to-release involves negative tests allowing release from quarantine sooner than the stipulated period for contacts, allowing return to key roles and employment, while safely managing SARS-CoV-2 transmission risks.

\(^3\) Test-to-enable involves negative tests affording risk-assessed lifting of restrictions to participate in activities of social, health or economic importance, or the continued abeyance of such restrictions.
g. compliance with isolation, and consequently transmission
h. unintended consequences, e.g., potential reduction in Covid-safe behaviours after a negative test

Data: Routine, linked anonymised data from NHS, Local Authority and Public Health sources are updated every 30 minutes within the Cheshire & Merseyside Health & Care Partnership’s Combined Intelligence for Population Health Action (CIPHA) system, in partnership with NHS Digital and NHSX. The evaluation team also collects quantitative and qualitative information from those who chose to be tested, those who chose not to be tested and those responsible for delivering the testing.

Governance: A Gold/ Silver/Bronze command structure runs operations with assistance from the British Military (8 Engineer Brigade) invited by Merseyside Resilience Forum. Each command level meets daily and responds to current data. Gold Command is co-chaired by the Chief Executive of Liverpool City Council and Mersey Care NHS Foundation Trust. Powers to vary release from quarantine are derogated from the Secretary of State for Health and Social Care to Liverpool’s Director of Public Health. The evaluation has been classified by Government as service evaluation not research. The Liverpool pilot service began after Government concluded formal validation of the lateral flow antigen test and discussed its proposed use with the Medicines and Healthcare Products Regulatory Agency.

Evaluation team: The University of Liverpool is leading the evaluation with Department of Health and Social Care, Joint Biosecurity Centre, Public Health England, and Office for National Statistics. The Evaluation Steering Group, the local Evaluation Team and the CIPHA data team meet regularly and evaluation analyses also feed tactical intelligence into meetings of the operational teams.

Evaluation deliverables: CIPHA reports guide operational actions, pilot tactics and policy decisions. An interim report on the first phase of the pilot, during lockdown, will be published, followed by a full report on the Liverpool Covid-SMART pilot, covering a period in Tier 3 and Tier 2 measures.