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The COVID-19 drive-through point — screening and testing — first in Poland complex centre experience

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Medical Research Journal 2023;
10.5603/MRJ.a2023.0001

ISSN 2451-2591
e-ISSN 2451-4101

ABSTRACT

Introduction: Rapid widespread of the SARS-CoV-2 virus in early 2020 caused global chaos. In the initial period, a lack of knowledge of epidemiology and viral contamination, as well as no availability of either causal treatment or preventive vaccination, resulted in mass testing of symptomatic individuals as the priority for protection. This study aimed to evaluate the effectiveness and safety of the first COVID-19 (coronavirus disease) drive-through testing model in the Greater Poland Region.

Material and methods: The authors demonstrate step-by-step the creation and development of the Centre of Medical Simulation Poznan University of Medical Sciences (PUMS) COVID-19 drive-through testing point for 3.5 million inhabitants in the Greater Poland Region during the 1st through 4th coronavirus pandemic waves. For staff education, low and high-fidelity simulation techniques were used. Additionally, the number of tests performed at the swab point and the efficiency of the developed testing model were evaluated and assessed in all pandemic waves.

Results: PUMS POST (point of screening and testing) activity lasted 24 months. Improvement of staff skills developed through simulation training increased the median number of 91 patients tested each day (with a median of 25 tests per hour) during the 1st wave to a maximum of 260 patients tested each day (135 tests per hour) during the 4th wave when the new drive-through POST system was employed ($p < 0.001$).

Conclusion: The present study supported the previous preliminary reports that drive-through systems developed during the COVID-19 pandemic proved to be efficient and safe for mass population testing. Moreover, the Medical Simulation Centre confirmed the effectiveness of staff skills improvement.

Key words: coronavirus, COVID-19, drive-through, screening, POST, point of screening and testing

Introduction

The rapid widespread of the SARS-CoV-2 virus in early 2020 caused global chaos and massive testing of symptomatic individuals and became the priority for protection. Drive-through points were found to be an excellent option, not only to perform screening tests in symptomatic patients but also to minimize the risk of contamination of staff and other people [1–4].

The first case of infection in Poland was confirmed on 4th March 2020 in Zielona Góra, where a 66-year-old man drove by bus from Germany. From 14th to 20th March 2020, a state of epidemic emergency was in force in Poland, and from 15th of March, a sanitary cordon was introduced at the Polish borders, significantly limiting border traffic. From 20th March to 15th May 2022, under the regulation of the Ministry of Health, a state of the epidemic was in force in Poland. From 16th May 2022, the state of epidemic emergency has been again in force.

The Poznan University of Medical Sciences (PUMS) designed its Centre of Medical Simulation unit as creating and regulatory body for the development of the first drive-through point of screening and testing (POST) in the Greater Poland region (Wielkopolska) on 28th April

Table 1. Objectives in staff skills improvement with low- and high-fidelity simulation methods

Objectives in education	Low-fidelity	High-fidelity
PPE proper use	Simple cartoon legend was prepared for every clothes-changing point	CSM medical and technical staff prepared a workshop on proper full and partial PPE dressing and undressing technique
Verification and tele-screening	POST PUMS Telephone Segregation Call Centre chart	20 initial simulated phone calls for questions optimization to segregation Call Centre chart
Swab techniques	Every new member of the swab trains the swab technique on "head simulation mannequins" in full PPE	10 swabs performed under the watchful of an experienced person
Complex staff training	Medical Simulation tools were based on the 4-step method — Peyton, Practice While Watching and Deliberate Practice	Medical Simulation tools were based on the "See one — do one"

CSM — Centre of Medical Simulation; POST — point of screening and testing; PUMS — Poznan University of Medical Sciences; PPE — personal protective equipment

2020, which became the leading centre in the region (3.5 million inhabitants). Its creation required the development of a strategic action plan, which, due to the dynamic circumstances, was ever-changing concerning the numerous activities and solutions proposed. The first testing point was created at a time when no detailed studies regarding the nature of the virus biology and spread had been available. The lockdown, which spread to many countries, followed by an increase in the number of cases, forced the administrative authorities to open the point and transfer some of the powers to those employed in it.

Aim

This study aimed to evaluate the effectiveness and safety of the first COVID-19 (coronavirus disease) drive-through testing model for 3.5 million inhabitants in the Greater Poland Region. The authors present the adaptation process of testing points during the 1st through 4th pandemic waves and provide the universal methodology of modelling drive-through testing in changing pandemic conditions.

Material and methods

Centre of Medical Simulation regulatory body

During a galloping pandemic and with an uncertain prognosis regarding its development direction, PUMS entrusted the management of the Centre of Medical Simulation (CSM) in Poznan with the organization of the first in Greater Poland COVID-19 sampling point. All activities during phases including point organization and staff recruitment were developed in their own (CSM) resources. Additionally, for education in personal protective equipment management, verification and tele-screening model and swab technique improvement, low-fidelity and high-fidelity simulation techniques were used as in Table 1.

Step-by-step development of mass-testing model

At the beginning of this program, it was found not only complex and potentially hazardous but also involved various specialists therefore it had been spilt into three overlapping phases. In this paper, the following points of model development such as verification/tele-screening (phase I), drive-through swab point (phase II) and laboratory (phase III) are presented in detail. Additionally, due to significant changes, the latter phase was divided into two further subsets, during the pandemic's 2nd and further waves.

Assessment of model efficiency and safety

The following time was noticed in the staff education model in the PUMS Centre of Medical Simulation: the necessary time to full PPE (personal protective equipment) clothes wear and the total time for a single swab collection. The additional objective indices of the developed model efficiency such as the number of tests per day and month, and the average number of tests per working hour during consecutive pandemic waves.

For the staff, the highest priority was the safety of the proposed testing model. The authors did check the prevalence of employees' coronavirus infections and referred the number of positive tests to the number of staff contamination.

Data management and analysis

The data analysis was performed anonymously. The time to full PPE clothes wear and the total time for swab collection for every new person was measured before and after dedicated training. All daily probes

Table 2. POST PUMS Telephone Segregation Criteria

Qualification for swab collection in the Mobile Laboratory
— Patient with symptoms of acute viral infection with a positive epidemiological history (one criterion is enough): sore throat, rhinitis, subfebrile state, cough, malaise, conjunctivitis, diarrhoea, lack of taste and/or smell, etc. — Patient with symptoms of acute respiratory infection: fever (>38°C), excessive sweating, dry cough, shortness of breath; regardless of the epidemiological history — A person with a positive epidemiological history but min. 7 days from contact
Epidemiological interview
Any person who, during the last 14 days from the onset of symptoms, has met at least one of the following criteria: — Has been or has returned from an area where there is also local or low prevalence transmission of COVID-19 — Have been in close contact with a person who is infected with COVID-19 (contact with a confirmed or probable case) — Medical personnel or another person directly caring for a COVID-19 patient or a person working in a laboratory directly with samples from people with COVID-19 without proper protection or in the event of damage to the personal protective equipment used or in the event of their incorrect use

Table 3. Results in staff skills improvement and main findings

Objectives in education	Total number of participants	Findings	Before training	After training	p-value
PPE proper use	N = 103	Necessary and safe time to full PPE clothes wear	11 [min] [7:13]	7 [min] [5:7.5]	p = 0.00005
Swab techniques	N = 96	Total time for swab collection	56 [s] [43:78]	27 [s] [18:61]	p = 0.00002
Complex staff training	N = 96	Improvement in average [AVE] and maximum [MAX] number tested persons per day between waves W1:W4	[AVE] 128 [MAX] 248	[AVE] 304 [MAX] 1121	p = 0.00000 p = 0.00000
	N = 42	Telephone segregation criteria were evaluated as effective in 1st wave and a prepared algorithm was used during all 24 months of POST activity			

*p — comparison before and after training; PPE — personal protective equipment

from all activity period times were collected and divided into 4 wave frames — the only available data (date, age and gender). All daily numbers were collected from the base and cumulated in a monthly period time. Statistical analysis was performed with the use of Statistica 13.3 (TIBCO Statistica) computer software. First, the quantitative variables were checked for normality through the Shapiro-Wilk test and because they did not satisfy the criteria for normal distribution, they are presented as median with interquartile range (IQR) and range (min–max), then they were analysed with the use of non-parametric Kruskal-Wallis ANOVA test, and if applicable, followed by multiple comparisons of ranks. Categorical data are expressed as number (n). A p-value below 0.05 was considered statistically significant.

Results

Development of the model phases

Assessment of simulation education effectiveness

The total number of persons that finished the PPE-wearing training was 103, from that group 96 persons were included directly in the swab collection staff and finished the complex training program. 42 persons finished dedicated training for tele-screening and qualification. The effectiveness of simulation training in staff improvement was collected in Table 3. The main results were reported in a decreased median time of PPE wear and statistically significant improvement in the median time of swab collection and the total number of swabs in one-hour activity between waves — Table 4.

Table 4. Number of tests, staff, swab collection stations and hourly capacity in PUMS POST during 1–4 waves of the COVID-19 pandemic

	Wave 1	Wave 2	Wave 3	Wave 4
Total number of tests [n]	19762	24980	29025	41121
The median number of tested persons per day [n]	91	188	118	260
IQR	89	152.75	187	210.5
Range of tests in one day [n]	[1–248]	[7–545]	[6–976]	[28–1191]
Average tested persons per day [mean (SD)]	128 (58.8)	208 (139.2)	197 (218.6)	304 (221.4)
Maximum number of tests in one month [n]	4674 (Aug 2020)	8165 (Oct 2020)	13307 (Mar 2021)	12133 (Feb 2022)
Staff in call centre [n]	3	3	3–7	3–7
Staff in swab points [n]	2–5	2–5	5–6	8
Car stations [n]	1	1	3	4
Pedestrian window [n]	0	1	1	4
Max hourly capacity [persons/h]	35	40	45–135	45–155

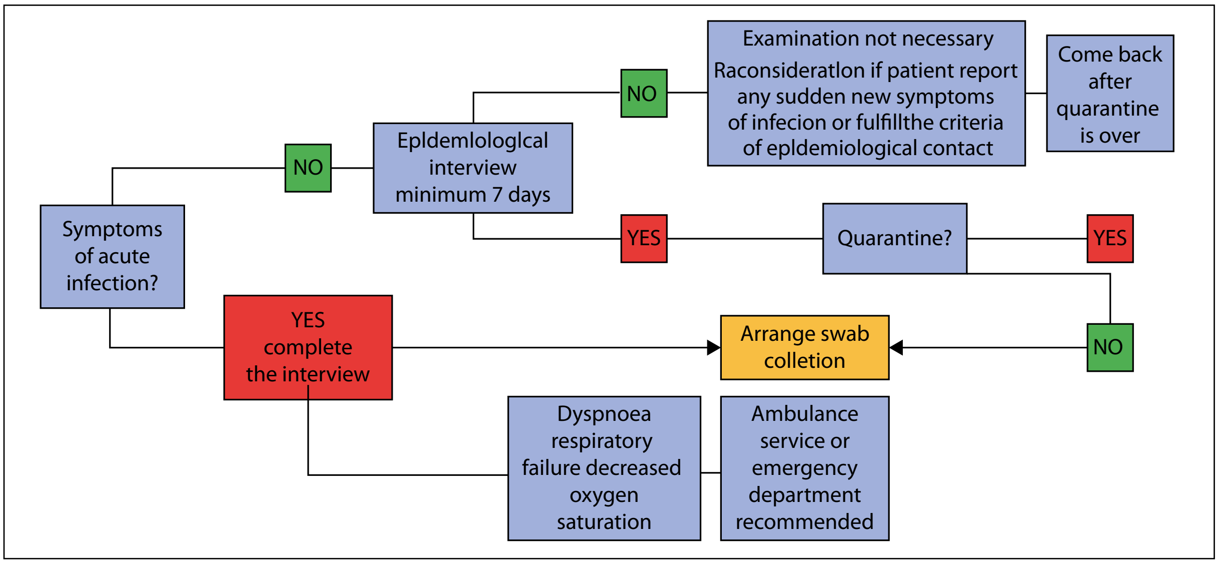

Figure 1. POST PUMS Telephone Segregation Call Centre chart

Tele-screening and qualification

For phase I, a call centre in the organizational frame of the Centre of Medical Simulation was created, which initially employed volunteers — students in their last years of medical school. Their activities in a specially designed place assumed the verification of patients based on a strict qualification protocol (tele-screening), which was regularly evaluated and updated following the current regulation — Telephone Segregation Questionnaire Criteria (Figure 1 and Table 2).

Due to the limited number of COVID-19 collection points at the beginning of the POST operation, patients with symptoms of infection and after final verification were qualified for a swab. They were often referred individually after the recommendation of a general practitioner or after the occurrence of outbreaks in hospitals. This system ensured transparency through the application of specific rules, which allowed to minimize the number of unjustified tests resulting from incorrect interpretation of symptoms and nationwide rules (such as the required number of days from contact or return from abroad). A system redirecting calls to 8 volunteer stations was used, thanks to which all positions were launched and adapted within 1 working day. The commencement of Phase I operations required confirmation of the activities of Phases II and III (swab point and laboratory). Synchronization of activities forced the call centre to start working two hours in advance of Phase II.

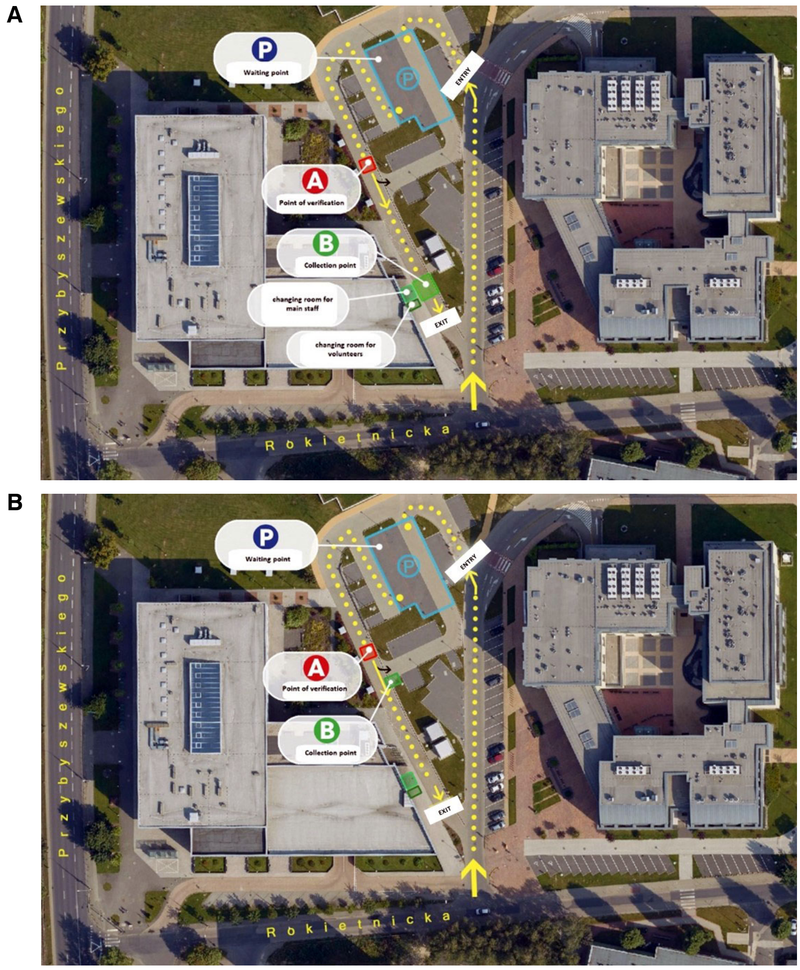

Figure 2. Scheme of PUMS POST — upgrade in 2nd and 3rd wave; (**A**) — point of verification; (**B**) — collection point; (**P**) — waiting point

Testing

Samples were obtained via both nasopharyngeal and oropharyngeal swabs — according to the WHO recommendation — during the beginning of the 1st wave and nasopharyngeal swabs only in the latter part of 1st wave and in the farther waves (TK Biotech and Biocoma Argenta) [5]. The CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel (TK Biotech Multiplex; Immugen; Immuniq Mutaplex) was used for the detection of SARS-CoV-2 when samples were sent to the laboratory — Phase III, as a gold standard diagnostic test of reverse transcription polymerase chain reaction (RT-PCR), which detects viral RNA in respiratory secretions.

POST (1st wave)

The first swab point in the Greater Poland region and at the same time the second in Poland available to the general public required the creation of standard operating procedures for the functioning of the unit. In the first stage of the point's operation, the estimated daily throughput assumed the performance of 100 swabs — Figure 2.

During the first days of opening the point, the testing initially only covered drivers. However, the state guidelines allowed for swabs to be conducted for patients who were not drivers but for all individuals living in a common household. This decision increased the number of tests conducted at the point. The assumed capacity of the point was verified hourly, which amounted to a median number of 25 individuals per hour. Testing occurred 7 days per week for 8 hours, from 9:00 AM to 5:00 PM Mon-Fri and 4 hours from 9:00 AM to 1:00 PM during the weekend, with a variable number of patient appointments scheduled at each 60-minute interval.

Personnel and PPE

Swabs were obtained by a rotating group of 2 to 8 personnel in full personal protective equipment (PPE), while 1–2 staff members in partial PPE completed the paperwork required for testing and prepared the specimens for shipment. Full PPE at this site entailed N95 masks, disposable gowns, protective suits, disposable and reusable face shields, and nitrile gloves. Partial PPE entailed using an N95 mask and gloves [5]. The point was subjected to daily ozonation during all waves.

Phase III – laboratory

The parallel activity of the laboratory in the immediate neighbourhood provided the possibility of transporting the material directly on foot. The time of arrival of the samples to the laboratory did not exceed 2 minutes. The tested sample results were available within 12 hours.

POST (2nd wave)

The widespread COVID-19 pandemic forced the organizers of the point to adapt very quickly to the changes in force in individual regions of the country. After the introduction of the patient enrolment system through a nationwide system dedicated to general practitioners, the call centre activity was suspended. The growing number of tests caused by the universality forced the development of a new solution, i.e., the creation of an additional unit for pedestrians. Patients who were not able to reach the point by car (including students returning to stationary learning) were allowed to swab through a dedicated window for pedestrians.

POST (3rd and 4th wave)

Subsequent announcements of pandemic waves and a noticeable growing interest in tests at the swab point caused infrastructure changes to maximize the number of tests performed. Improvements resulting from the modification of the verification system (directly at the point based on the PESEL number or reference number with parallel swabs of patients) and the expansion of the point to 3 car stations and 1 pedestrian window resulted in an increase in efficiency to 45 patients per hour per station — Figure 2,3. The ability to test up to 135 patients within an hour allowed for the performance of a key from the point of view of the number of swabs carried out to the total number of referrals issued. Testing occurred 7 days per week for 10 hours, from 9:00 AM to 7:00 PM Mon-Fri and 8 hours from 9:00 AM to 5:00 PM at weekend, with a variable number of patient appointments scheduled at each 60-minute interval.

During the significant decline in the number of coronavirus cases, the point limited its activities by reducing the number of active positions, then reducing the number of operational hours to ultimately suspend operations on 31st March 2022. The following month the POST was in standby mode and finally closed on 29th April 2022.

Model efficiency

PUMS POST activity lasted 24 months and the total number of performed tests was 114888 (55.4% female and 44.6% male, the median age of the tested was 42 (14 months–94 years)), with a median number of 155 tests (1–1191) per day. The latter value was much lower during the 1st wave (median number 91 patients (1–248) tested each day (25 tests per hour) and increased to reach a median peak value of 260 (28–1191) tested each day (of 135 tests per hour) during the 4th wave, with the new drive-through POST system (W1:W4 $p < 0.001$) (Figure 3; Tables 4 and 5). Statistical analysis revealed that the median number of tests performed in one day increased statistically significantly from the 1st to the 4th wave. The maximum number of tests performed in 1 day with the POST system was 248 during the 1st, 545 in the 2nd, 976 in the 3rd and 1191 in the 4th wave, respectively. The maximum number of tests performed in 1 month with the POST system was 4674 during the 1st, 8165 in the 2nd, 13307 in the 3rd and 12133 in the 4th wave, respectively. The staff employed in the call centre increased from 3 in the 1st wave to 7 in the 4th and similarly employees in the swab points from 5 in the 1st wave to 8 in the last wave.

Model safety

No instances were reported of a break in PPE or accidental contagion exposures among the staff. The total number of involved persons during the 24 months of PUMS POST was 65. No infection was confirmed in staff related to POST activity.

Discussion

This drive-through POST system at PUMS, which operated as a unified and efficient testing site accessible to both urban and rural populations, was a pioneering solution in Poland and an alternative to similar drive-through models previously reported in the literature [6–14]. Additionally, according to the authors' knowledge, the current study is the first presentation of the experience of a drive-through point for screening and testing COVID-19 in Poland.

Dedicated staff training

Using CSM resources, including simulation trainers and using simulation techniques, allowed us to prepare the first team of employees at the point in a very short time. Continued active PPE management and swab techniques workshops allowed for the formation of rotating teams.

Walker and Peyton presented an approach to teaching in the acquisition of procedural skills (Peyton's 4-Step Method, 1998). This pedagogical approach consists of the following four steps: demonstration, deconstruction, understanding and execution. However, it was originally designed for students to teachers ratio of 1:1,

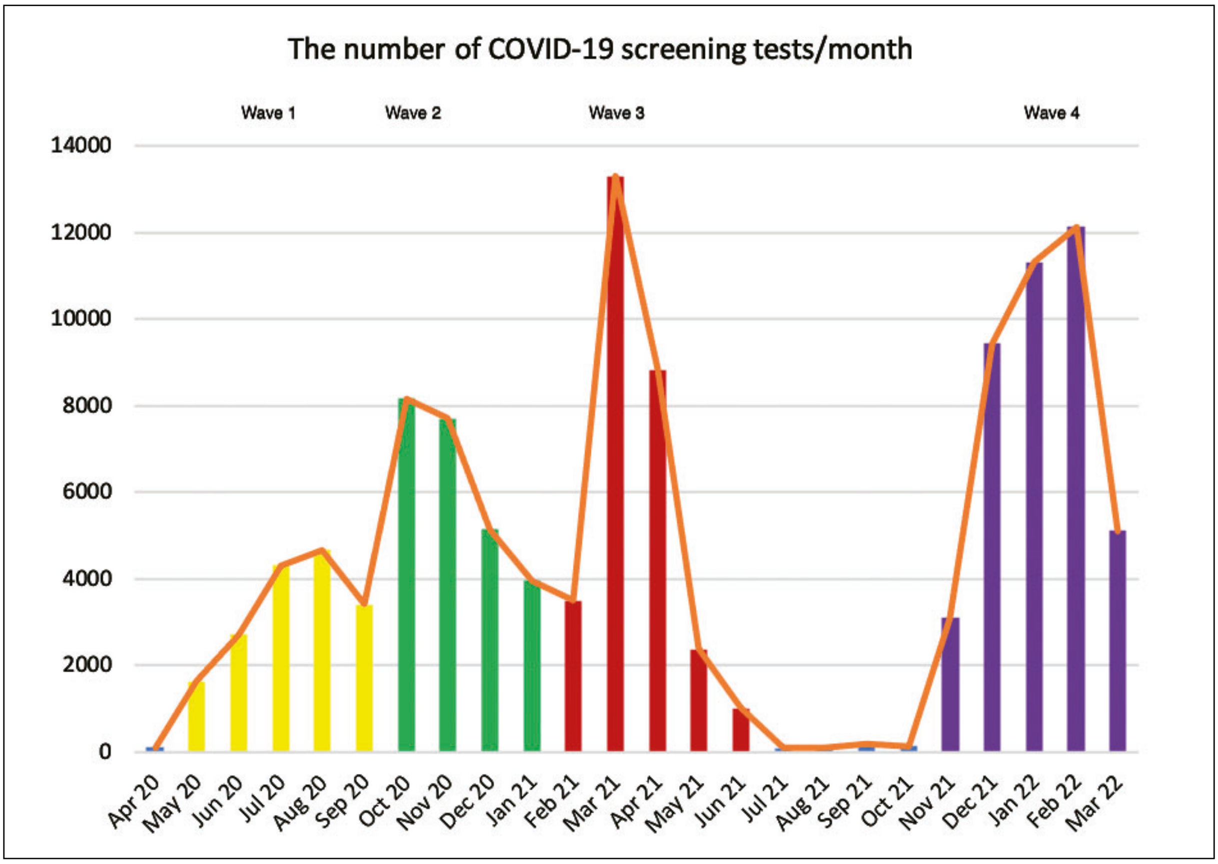

Figure 3. The number of COVID-19 screening tests/month in PUMS POST during waves 1–4

Table 5. The average number of tests performed in one day between waves

Pairwise Comparisons of the average number of tests performed in one day		p-value
W_1:128	**W_2:208**	**p = 0.00002**
W_1:128	**W_3:197**	**p = 0.00018**
W_1:128	**W_4:304**	**p = 0.00000**
W_2:208	W_3:197	p = 0.95535
W_2:208	**W_4:304**	**p = 0.00003**
W_3:197	**W_4:304**	**p = 0.00000**

Kruskal-Wallis ANOVA test with multiple comparisons of ranks; W — wave; bolded values are of statistical significance ($p < 0.05$)

and there is evidence that the method is more effective when groups are smaller and contain at most a few students per teacher. The third step — understanding — in particular seems to be beneficial for the acquisition of skills. The process of guiding the teacher through the procedure requires the student to remember and reflect [15]. This process helps participants organize their thoughts and supports student-centred learning [16]. That low-fidelity tool was adopted for call centre staff training and complex training in POST.

The "practice while watching" (PWW) teaching method was developed for the American Heart Association (AHA). During this method, students perform appropriate activities during and under the guidance of an instructional video. PWW combines cognitive with psychomotor capabilities and that approach distinguishes three different stages of watching video materials [17]. In the authors' modification, some materials for PPE safe wearing were included in the instructional video and the next step was fixed into a simple cartoon legend.

Targeted practice — Deliberate Practice (DP) focuses on improving individual tasks, providing immediate feedback, time to solve the problem and the possibility of repetition to improve the procedure. A key challenge for novice professionals is to avoid the stopped development associated with automatism. Intentional practice is used to improve performance by actively setting higher standards [18]. That tool was effectively useful in swab technique training.

In the traditional scheme of teaching procedures in medical professions, the "See one — do one" scheme is used. It means that the teacher demonstrates and describes the procedure, and then the students practice it. The history of the method dates back to the creation of systems for training surgeons by Halsted (1904). The method is often used in the training of healthcare professionals. Firstly, this tool has been in use for decades [16]. Reports are suggesting that patient safety may be compromised because proficiency in complex procedures cannot be acquired after a single follow-up and practice trial. The improved learning cycle of medicine should be "see a lot, learn from the outcome, do a lot under supervision" [17]. Total lockdown and small human resources paradoxically allowed for the fulfilment of these educational conditions and high teaching effectiveness.

Low and high-fidelity techniques are different educational approaches. So far, the superiority of high fidelity over low fidelity has not been confirmed in the literature, so a direct comparison is not possible. In educational models using medical simulation, the best educational effects are obtained by intertwining low and high-fidelity techniques. In its basic form, high-fidelity simulation ranges from simple low-fidelity techniques and simple exercises to advanced simulation techniques including those used during interviews with standardized patients (SP) to optimize segregate call centre charts. The final comprehensive procedures have been trained based on practising "in situ" "See one — do one". It should also be emphasized the role of medical simulation as a creating tool for non-existent procedures i.e.: PPE dressing and undressing technique; optimization to segregation Call Centre chart; swabs collection in full PPE; POST activity in pandemic conditions.

Dedicated training allowed for the total training of 96 people, enabling rotational teams of people in POST up to the maximum efficiency of the point in the 4th wave with 8 swab collecting people and 7 in the call centre. In subsequent phases, the permanent educational base developed in Medical Simulation Centre ensured quick access to new volunteer members who could supply new car and pedestrian positions. This training model turned out to be effective —no cases of contamination, quarantine or infections were noticed related strictly to POST working during 4 coronavirus waves. The tele-screening model thanks to *in situ* simulation turned out to be an effective and simple segregation tool during 24 months of POST activity.

POST activity

Implementation of a strict management protocol for all on-site staff and the use of trained specialists to obtain nasopharyngeal swabs resulted in a statistically significant increase in the number of daily tests from the 1st wave to the 4th. The POST system referred to in the current study was already able to accommodate many patients in a short time, with a maximum of 1191 samples collected within 8 hours during the fourth wave (31st January 2022). The implementation of the POST system at PUMS increased its efficiency to conduct tests, even higher than in more developed countries. For example, the maximum efficiency in the fourth wave was 4 times higher than reported in the USA by Evans et al. [6], 5 times higher with an average model of 192 patients per day reported by Ton et al. [7] as well as 10 times higher with a model in South Korea that could accommodate about 100 tests per day [10]. PUMS POST system was evaluated according to epidemiological needs. Recruitment of additional staff, parallel driving lanes, three stations, increased swab stations with a dedicated pedestrian station, longer working hours and an increased number of days open, were measures that enabled a real increase in the efficiency of the POST system to thousands of patients. Similar observations of POST effectiveness were reported in the world [6, 13]. Moreover, Kim et al. [14] in South Korea confirmed that advanced screening centres: drive-through screening centres, walking-through screening centres and walk-throughs in airports proved more effective and efficient in the prevention of COVID-19 than the traditional screening centres.

The increase in the number of cases from 2021 to 2022 and the number of cases recorded as the largest since the outbreak of the COVID-19 pandemic has posed new challenges. To maximize efficiency, the collection point was extended by 2 additional car stations, which ultimately resulted in parallel work at 4 separate positions. One obvious limitation of the POST system was that it was only available to patients with access to a car. Patients could also opt out of social distancing to access a car for testing purposes, such as asking a friend to drive them. To accommodate patients without a car, PUMS POST launched a pedestrian point, with operations beginning during the 2nd wave. A pedestrian point vis-a-vis the original point served 3 patients concurrently. The maximized efficiency combined with opening the site for 8 hours ensured universal access for those referred for a test and reduced waiting time to a maximum of 5 minutes. One of the clearest indicators suggesting the high performance of the POST system is the time intervals recorded within 1 day of testing. The total on-site time reported by Evans et al. [6] was about 14 minutes, consisting of about 11 minutes for check-in and 3 minutes for a swab; and in South Korea, which referred to a sample time of 2 minutes and a total time of fewer than 15 minutes [8]. The main limitations in administering large amounts of COVID-19 tests during the 1st and 2nd waves were the availability of qualified personnel to administer swabs (e.g., nurses, medical students, and physicians) and the nationwide shortage of personal protective equipment [6, 19–22]. Additional stations in the 3rd and 4th waves were activated to reduce waiting time. The most significant and beneficial improvement was reported with additional pedestrian windows opening.

In the USA paramedics pivoted the traditional mobile integrated health and community paramedicine MIH/CP model to rapidly initiate remote drive-through testing for COVID-19 in pre-screened individuals. The estimated duration of each patient encounter under investigation was 3 to 5 minutes [23]. American nurses demonstrate that nurse practitioners are ideally suited to provide leadership given their adaptability, ability to function in a variety of settings, and extensive experience with care coordination and logistics [24]. Additionally, the cost-effectiveness of that approach was confirmed — cost per patient and personal protective equipment use was significantly less than in building clinics providing testing. Low costs were confirmed in Israel too — optimized cost per patient of home testing was estimated at 74.5 USD compared with 6.55 USD in the drive-through centres [25].

As the swab stations in the PUMS POST system were covered with tents, the swabs were exposed to external weather conditions. The short distance to the diagnostic laboratory (in Phase III it was 2 min walking distance) eliminated the problems associated with heat and dehydration among the samples collected. Such problems were reported in the drive-through model in South Korea [6, 10]. This restriction can be alleviated by more protective tents or similar POST structures — from Phase I to Phase III.

Thanks to the POST organization of breaks and the work schedule, it was not possible to get infected directly at that point. The largest safety concern at the POST system was the amount of time spent wearing the PPE, especially during sunny months in waves 1 and 3 [6, 11].

This PUMS POST model can be implemented anywhere in the country in any comparable area size. Event centres proved to be particularly useful due to their stable environmental conditions and they were largely unoccupied during the pandemic [23–27]. Moreover, the PUMS POST was fully adaptable to the changing pandemic conditions. Identifying patients at high risk of infection via a telephone segregation line allowed for remote evaluation of the patients and enabled to divide them into groups, those that would benefit the POST system and those with serious symptoms that required a personal visit to the physician [6, 11, 12, 20, 23–28]. Access to COVID-19 testing for socioeconomically disadvantaged populations was additionally beneficial [24, 25, 28]. It is scalable, feasible, acceptable, and adaptable to meet the capacity needs of the community. This model could also be replicated for vaccine distribution to a similar population. Translating this protocol into a universal drive-through point screening and testing and Telephone Segregation Questionnaire to other locations across the country can significantly improve testing efficiency and reduce the use of personal protective equipment for testing purposes. The authors believe that the PUMS POST system is an effective model for large, safe, and efficient testing that can be adapted to most communities in the world and that it should be emulated in the future.

Conclusions

Our study supported the previous preliminary reports that drive-through systems developed during the COVID-19 pandemic proved to be efficient and safe for mass population testing. Moreover, the Medical Simulation Centre confirmed the effectiveness of staff skills improvement, as well as developed POST confirmed that mobile points can be adapted for changing pandemic conditions in a very short time and can be universal for any epidemic. That model might be considered in the future as universal for any epidemic.

Acknowledgements: *Authors would like to indicate the important role in the initiation and development of PUMS POST in the Poznan University of Medical Sciences administration such as purchasing department, and facility management, especially in cooperation with the National Health Found and epidemic centre Sanepid.*

Conflict of interests: *None.*

Funding: *None.*

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