The Impact of a Quality Assurance (QA) Program on COVID-19 Contact Tracing in Louisiana Sarah Grunblatt, MS, MS, MEd, MEd, MA, LSUHSC Epidemiology Program Cannon Ledford, PhD, Louisiana Department of Health

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BACKGROUND

According to the Centers for Disease Control and Prevention, "COVID-19 (coronavirus disease 2019) is a disease caused by a virus named SARS-CoV-2 and was discovered in December 2019 in Wuhan, China. It is very contagious [due to transmission via droplets from an infected person's cough or sneeze] and...quickly spread around the world. COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia...Other parts of [the] body may also be affected by the disease."¹

The Louisiana Department of Health (LDH) reported the first case in March 2020. Subsequently, hundreds of contact tracing and case interviewing (CT/CI) agents were trained, and four call centers began COVID-19 outreach efforts in May 2020. In Louisiana, medical facilities report positive COVID-19 test results to a central database, and agents then follow a script provided by the LDH to make outreach interview phone calls. These interviews include symptom and exposure questions, isolation/quarantine guidance, exposed contact and location attainment, resource offers, etc. The main purpose of these case interviews is to follow-up with contact tracing of close contacts during the COVID-19 infectious period to alert them of their exposure and provide quarantine guidance and support. Additional mitigation efforts in Louisiana include mask mandates, social distancing, public gathering limitations, stay-at-home orders, statewide school closures, travel restrictions, vaccinations, etc.

There have been numerous COVID-19 variants, approximately 10 monitored variants, and two variants of concern (Delta and Omicron). Louisiana has had approximately five peaks in COVID-19 cases with almost 20,000 new cases being reported at the height of the pandemic. As of February 2022, Louisiana has reported approximately 1.2 million total COVID-19 cases and approximately 17,000 associated deaths across all 64 parishes.² Louisiana currently ranks twelfth (of 52) in age-adjusted COVID deaths.⁵ Furthermore, Louisiana heavily relies on tourism and is one of the top five states most negatively impacted financially by COVID-19-an economic toll in the tens of billions of dollars per year. For these reasons effective infectious disease pandemic relief efforts now and as well as in the future are critical.

AIMS

The first aim of this study was to increase COVID-19 agent efficacy and accuracy in obtaining contacts and locations, which would aid in slowing the spread of COVID-19. This would be achieved through a quality assurance (QA) process by providing individualized feedback, support, and training to agents in addition to auditing case records. The second aim of this study was to establish a QA process that can be quickly implemented should the need for contact tracing arise in the future. This would be achieved by assessing, establishing, and documenting evaluation measures and best practices.

METHODS

In February 2021 almost a year after the COVID-19 pandemic and contact tracing efforts began, the Louisiana Department of Health initiated quality assurance efforts, which concluded in February 2022. The two remaining call centers, one of which was Hub Enterprises (Hub), participated in a total of 30 QA rounds (21 orchestrated by the LDH and 9 orchestrated in-house by the QA Point-of-Contact (POC) at the respective call center).⁴ At Hub, 60 agents participated in QA: 43 agents only needed one QA round and 17 agents completed two or more QA rounds. Hub completed 27 total QA rounds (19 QA rounds with the LDH and 8 QA rounds with the POC). In total, 161 of the 1,011 COVID-19 CT/CI agents (16%) completed QA, and 180 QA review meetings were conducted.³

The QA process included five phases: (1) routine call monitoring (RCM), (2) QA preparation, (3) a QA meeting, (4) continued training, and (5) follow-up. Agents scoring 15 points or higher during RCM were eligible for QA. The QA prep included an agent self-assessment form as well as additional call reviews and scoring. Also, the first two phases both included agent scorecards; each of which was revised and refined three times, included six sections (contact tracer introduction, symptoms & clinical, demographics, exposure/locations/contacts, isolation, follow-up), and also had shortened versions for peak caseload periods in addition to a case audit checklist. The QA meeting included LDH staff in addition to the call center's agent, supervisor, director, and POC as well as individualized training. Training tracks were divided into three skill categories (professionalism and call etiquette, motivational interviewing skills, contact elicitation) and a total of eight specific skills that could be focused on. The process concluded with continued training and follow-up by the POC as needed. This process was monitored by periodic QA status reports and POC spot-check reports.

RESULTS

As shown in Table 1, of the 37 agents at all call centers with complete data who completed the QA process, on average errors on call scorecards reduced from 9.1 points to 5.9 points. This is a 35% improvement (reduction in errors on CT/CI calls).⁴

The LDH combines several metrics, typically from a two- to for timeframe, to determine an agent's Key Performance (KPI) score, which is a measure of overall job performance. The three most important and heavily weighted items are contact elicitation, average number of contacts obtained, and average number of locations obtained. Contact elicitation is defined as the percent of cases that yielded at least one contact. Average number of contacts obtained is calculated by dividing the total number of contacts obtained by the quantity of all cases interviewed. Similarly, the average number of locations obtained is calculated by dividing the total number of locations obtained by the quantity of all cases interviewed.

As shown in **Table 2** for agents at all call centers, contact elicitation demonstrated a 24% improvement with one round of QA and a 72% improvement with two or more rounds. Furthermore, the average number of contacts obtained improved by 31% with one round of QA and 99% with two or more rounds, while the average number of locations obtained improved by 18% with one round of QA and 24% with two or more rounds.⁴ These gains also, therefore, correlated to increases in agent overall KPIs.

Table 2. QA Impact on Key Performance Indicators (KPIs) (All Agents) ⁴									
	CONTACT ELICITATION			AVERAGE # OF CONTACTS OBTAINED			AVERAGE # OF LOCATIONS OBTAINED		
	Prior to /		%	Prior to /		%	Prior to /		%
Characteristic (n = 1011)	Without QA	After Q A	Improvement	Without QA	After Q A	Improvement	Without QA	After Q A	Improvement
Non-QA (n = 866)	0.62			1.62			1.59		
1 Round of QA (n = 114)	0.46	0.57	24%	1.03	1.35	31%	1.42	1.67	18%
2 or More Rounds of QA (n = 31)	0.29	0.49	72%	0.54	1.07	99%	1.39	1.73	24%

Figures 1-3 also compare agents at all call centers regarding contact elicitation, average number of contacts obtained, and average number of locations obtained. While Figures 1 and 2 do show improvement, the average agent score after the final round of QA was still below that of all other agents who did not participate in QA. However, following the final round of QA agents did surpass their non-QA peers in the average number of locations obtained at 1.68 and 1.59 locations per case on average respectively (Figure 3).⁴





Table 3 examines the results of QA only on agents at the Hub call center. Contact elicitation demonstrated a 36% improvement with one round of QA and a 92% improvement with two or more rounds. Furthermore, the average number of contacts obtained improved by 44% with one round of QA and 129% with two or more rounds, while the average Table 3. Results after Participating in a Quality Assurance (QA) Program (Hub Enterprises)³

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CONTACT ELICITATION			AVERAGE # OF CONTACTS OBTAINED			AVERAGE # OF LOCATIONS OBTAINED		
Prior to /		%	Prior to /		%	Prior to /		%
Without QA	After QA	Improvement	Without QA	After Q A	Improvement	Without QA	After QA	Improvement
0.69			1.89			1.66		
0.47	0.64	36%	1.07	1.54	44%	1.39	1.68	21%
0.29	0.56	92%	0.53	1.22	129%	1.33	1.87	40%
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number of locations obtained improved by 21% with one round of QA and 40% with two or more rounds. Also at Hub, agents with complete data had a 38% reduction in total scores after QA and were scoring almost the same as non-QA agents. Finally, Hub agents obtained more than a 70% increase on average in KPI scores before versus after QA.³ **Figure 4** demonstrates the evolution contact elicitation during the QA process. Consistently, agents not in QA performed better than those in QA; however, the trend for all CT/CI agents (both groups) did improve overall as time progressed. Furthermore, one agent celebrated extreme individual success during the QA process with a 594% improvement in contact elicitation, which significantly outperformed all other agents at either call center.⁴

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Indicator	

Table 1. Improvement in Total Points							
Following QA (For Agents with Complete Data) ⁴							
	Prior to /		%				
Characteristic (n = 156)	Without QA	After QA	Improvement				
Non-QA (n = 119)	8.8						
QA (n = 37)	9.1	5.9	35%				

The data shown here clearly demonstrates successful attainment of aim one through the quantitative benefits and improvement in job performance metrics of agents who underwent a comprehensive quality assurance program. Furthermore, Hub agents improved more, on average, in all areas compared to the other call center. Additionally, many agents also reported qualitative benefits as well. They felt more comfortable with the call script and job expectations, better equipped to establish trust with and/or overcome pushback from the interviewees, and generally able to obtain and document the critical CT/CI information more seamlessly. Overall, this QA process was clearly successful.

Regarding aim two, each step in the QA program was thoroughly documented and repeatedly revised. When contract tracing efforts ended, the LDH also meet with each call center to extensively reflect on numerous aspects. All of these resources and documents have been compiled in order to serve as a template or foundation for future QA efforts. Therefore, the second aim of this study was also achieved.

It is important to reiterate that the purpose of this CT/CI effort over the past two years has been to slow the spread of and hopefully prevent additional deaths due to COVID-19. Every case and contact reached or location obtained (and properly documented) is one more potentially lifesaving action. Also, epidemiologic research is inherently flawed, and case auditing and quality assurance helps to prevent errors and clean up data on which current decisions are and future research will be based.

In March 2022 COVID-19 CT/CI efforts ended. The LDH and the two call centers transitioned into a community support role to answer questions from the public and to coordinate any resources needed. A QA process should be developed and implemented for this new public health effort as soon as possible.

Furthermore, a limitation of this study was that the QA process focused entirely on the CT/CI agents. No training or standardization of expectations and support measures, however, was established for call center supervisors or directors. As a supervisor at Hub, I have already developed and implemented a recommended QA feedback process across all teams that includes four feedback components as well as monthly 1:1 review meetings. These measures will be shared with the LDH for evaluation and refinement and potential implementation to all call centers as a part of the continued COVID-19 response as well as any future contact tracing or community support efforts.

- Disease
- Health
- adjusted-covid-deaths/

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DISCUSSION

RECOMMENDATIONS

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