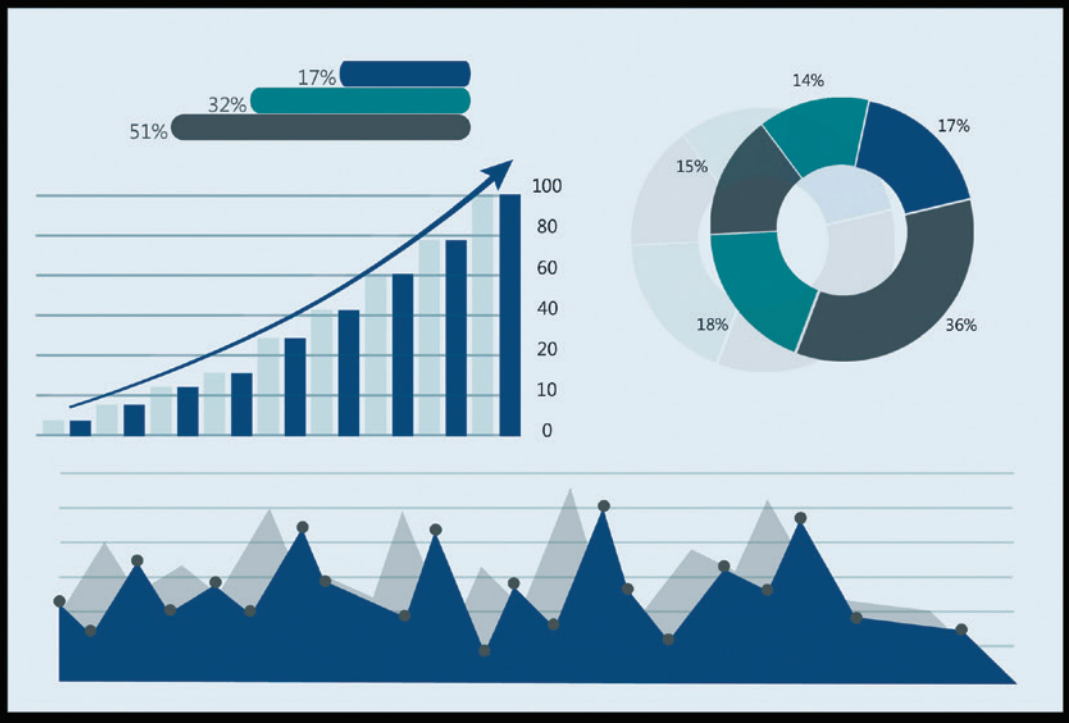
–CRISIS–
CALL CENTER METRICS

PART 1: SERVICE AND EFFICIENCY



SAMHSA
Substance Abuse and Mental Health Services Administration

NATIONAL SUICIDE PREVENTION LIFELINE
1-800-273-TALK (8255)
suicidepreventionlifeline.org

Vibrant Emotional Health

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NOTE: The purpose of this document is to summarize available information on call center metrics. Throughout the document various sections have been taken directly (or adapted) from online sources. These sections are indicated and links provided to original text.

EXECUTIVE SUMMARY

In an effort to address the lack of formal standards for crisis call center metrics, the **National Suicide Prevention Lifeline (Lifeline)** set about gathering available and relevant information for use in determining benchmarks for the industry.

This paper was developed for **crisis call center managers** to reference and should be viewed as a first step in establishing common definitions for service provision that will facilitate data sharing. It is also intended for **crisis center funders** to be used as a point of reference in the establishment of realistic performance measures. It is important to note that crisis call centers are not providing a service comparable to technical support lines or sales call centers and cannot be held to standards of operation reflective of these industries.

Call center development, and ultimate success, is a science based endeavor. Entire businesses have been established in the pursuit of how to effectively manage and grow such enterprises within a rapidly changing technical environment. Effectively addressing the needs of callers, particularly those experiencing a mental health crisis, while maintaining a viable workforce is mission-critical and crisis call centers, such as suicide hotlines, add another immeasurable element to the equation: outcome measures that directly impact lives.

As a manager, community stakeholder, or potential funder, there are several essential elements of a crisis call center that must be understood before decisions regarding operations planning, outcomes, or funding can be made (see particularly *Optimizing Crisis Center Operations* and *Appendices* for detail). The following points, outlined by the International Customer Management Institute (ICMI) (2010), are considered here in the context of a Lifeline crisis call center, and discussed further throughout this paper in greater detail.

1. **Call centers are extremely complex and dynamic and no standard operating procedure will apply universally to all centers.** Crisis call centers, in particular, bear limited resemblance to generalized call centers and generating requirements based on operating procedures and outcome measures from non-crisis call centers can prove to be grossly inappropriate. Crisis hotlines, perhaps more than any other call center business, experience significant variability in terms of call volume, caller needs, and potential interventions, making staffing (and therefore cost) projections challenging. Calls could range from basic information and referral needs, to crisis counseling and de-escalation of severe distress, to an "active rescue" where two staff may be required to locate a caller at imminent risk of suicide, coordinate emergency services and transportation, support the caller, and follow-up to ensure safety. In situations where centers have only one or two staff members available in a given hour, longer calls can significantly impact capacity to respond to additional incoming calls. Such challenges must be considered in setting service levels metrics.

2. **There is generally no call center industry standard for accessibility.** Naturally, there is a desire that callers not wait excessively long for service. What is considered "too long," or even "appropriate" or "tolerable" wait times for callers? For "hotline" callers, the very term suggests that callers are in a situation that requires a rapid response. However, the assumption that callers cannot wait has enormous (and expensive) resource implications that must be addressed to satisfy these expectations. From our review of call center industries, no single service level or response time objective makes sense for every call center. Different centers will have different costs, types of callers and local service objectives. Despite this, many funders will apply general metrics to all industries—an example being, "answer all calls within 30 seconds or less" or "answer 80% of calls within 20 seconds or less," but where did this come from? There is no evidence to support what is known as the "80/20 rule" and there is no evidence, even for hotline callers, that the great majority of those in crisis will not be able to tolerate a wait longer than 20 seconds for their call to be answered. If funding resources are not a major issue, setting a high-level standard for response times may be desirable. However, if resources are somewhat finite, mandating that calls get answered in X seconds when 15 seconds later may make no significant difference has a noteworthy impact on call center costs. In general, where resources are limited, more information on caller tolerance is suggested before such requirements are made. (See section *Speed of Service: Service Level (SM-5)*)

3. **Incoming calls "bunch up."** Call center workflow dynamics are unique. Customers decide when and how they will contact an organization, and the resulting work will not arrive in a nice, even flow. For crisis call centers, daily variations in call volume and crisis severity can be additionally influenced by unforeseen events such as natural disasters, acts of terrorism, high-profile suicides, or prominent public figures promoting suicide prevention. Staffing and productivity issues must be considered in that context. In addition, crisis call centers often manage multiple contracts, meaning multiple specialized queues, uniquely trained staff, and varying program requirements. Decision makers and external stakeholders must recognize that even small changes in crisis call center staffing patterns can significantly impact service levels and funding (See *Appendix C*).

4 **There's a direct link between resources and results.** You may need 36 people handling calls to achieve a service level of 90 percent of calls answered in 20 seconds, given your workload. If you have 25 people and are required to hit 90/20, that's not going to work. And "staffing on the cheap" can be expensive, leading to high agent occupancy, burnout and turnover, unhappy (and unsafe) callers, poor word of mouth, and other potentially life-threatening results. (See *Appendix C*).

5 **When service level improves, "productivity" can decline.** What exactly does this mean? Productivity for call center representatives is generally measured as staff occupancy (i.e. time spent handling calls versus waiting for calls). In order to meet high service level requirements, lower staff "occupancy" rates should be expected. That is, as more staff are scheduled to answer calls within a set threshold, those same staff may appear "idle" as they remain ready for incoming calls. If the service level requirement is high, without adequate funding for staff, the center will only be able to meet that requirement by burning out staff with higher occupancy rates. Given that crisis counselors often respond to highly stressful and emotional calls, many of which may require supervision and debriefing, this practice is not advised. In finding a "sweet spot" between service level and occupancy, funders of crisis call centers are wise to work with centers to understand call volume and call type trends. (See *Resource Utilization: Staff Occupancy (EM-4)*)

6 **You will need to schedule more staff than base staff required.** Schedules should realistically reflect the many things that can keep agents from handling calls (e.g., training, breaks, holidays, collateral work and others). In many organizations, these factors are becoming more prevalent as the increasingly complex environment requires more training and research/development time. (See *Resource Utilization: Schedule Efficiency (EM-6)* and *Schedule Adherence (EM-7)*)

7 **Summary reports often don't give an accurate picture of what's really happening.** Reports that supply averages for activity may suggest that performance is just fine, and yet conceal serious areas of stress for staff. Those producing and interpreting data must know what they're really looking at. Monthly intervals, for example, can often be misguiding and disguise where the weaknesses lie in a system. Monthly service levels may meet targets but in reality the center may have been overwhelmed with calls during the first week of the month, with high wait times, and then low call volume at the end. This can often disguise the true needs of centers in terms of support and additional funds for staffing. Even daily averages can disguise the fact that the center is under enormous pressure at specific points throughout the day. Ideally, 30-minute intervals are key to accessibility and most efficient use of resources (See *Speed of Service: Service Level (SM-5)—How to Calculate Service Levels—Decide on Time Interval*)

8 **Quality and service level work together.** Though they are often presented as tradeoffs, high service levels are essential in getting calls answered and resolved—and ultimately, better quality is the key to a better service level. Assisting callers the first time they call, reducing repeat or unnecessary contacts, and monitoring processes that help improve outcomes, are all essential quality measures that can impact service levels and improve services across the call center .

In working to fully comprehend crisis call center data and operations, funders and community stakeholders must demonstrate their commitment to maintaining sustainable and meaningful services for those in crisis. This means that funders must be prepared to actively collaborate with crisis call centers and provide resources at a level that realistically enables centers to consistently satisfy key performance indicators (KPIs). It is also critical that crisis call centers and funders work together to implement and maintain management structures, tools and technology platforms (such as efficient telephone systems, workforce management/scheduling software systems) that assure a continuously reliable, stable service for people in crisis every minute, every hour, during every day, for years to come.

This document provides the most comprehensive review of the cultural context, available data, formula, rationale, reference materials, and recommendations for crisis call center performance metrics. It is intended to be essential reading for any stakeholder who is considering the establishment of a state-of-the-art / industry crisis call center, or who aims to provide the necessary tools and resources to sustain and improve existing crisis call center services.

BACKGROUND & SIGNIFICANCE

NATIONAL SUICIDE PREVENTION LIFELINE

The National Suicide Prevention Lifeline (Lifeline), 1-800-273-TALK (8255), is a free and confidential service for those in emotional distress or suicidal crisis. In calling the Lifeline, individuals across the United States in need of immediate assistance are connected to the nearest available crisis center within a national network of more than 160 centers. The Lifeline is funded through the **US Substance Abuse and Mental Health Services Administration (SAMHSA)**. Established in 2005, the Lifeline currently responds to well over two million calls a year.

All centers that participate in the Lifeline are independently owned and operated and apply to become a member of the Lifeline network. As independent centers, joined through one toll free number, the Lifeline crisis centers follow their own agency policies and training procedures and can vary tremendously in terms of structural components and overall operations. Centers range in size, staff may be paid or volunteer based (or a mixture of both), and performance requirements are frequently tied to local funding streams.

THE NEED FOR STANDARD MEASURES

While crisis centers have operated in the community for well over 50 years, only recently has attention has been paid to the service they provide to their communities, and to the depth and significance of the role they play in the national effort to prevent suicide. Largely underfunded, many centers have lacked the technology needed to effectively report on the extent and impact of their service, limiting their ability to increase credibility with policy makers and funders. The renewed focus on crisis services has been aided in part by data collected from Lifeline

centers, which has made evident the limited structural resources, the high volume of calls they receive, and their position as an essential element of the behavioral healthcare system.

Highlighting the needs of crisis centers, however, can only go so far. Without appropriate outcome measurements, funders and policy makers may rely on anecdotal reports and flawed data comparisons to determine whether a program should be continued, expanded upon, or eliminated. Challenges particular to the crisis center world involve the limited understanding by funders and community stakeholders alike regarding operational needs, community impact, and ultimate return on investment associated with these centers. The fact is that (a) taking on the architecture, funding, staffing, training, and contract management of a 24/7 crisis call center is a monumental task; (b) these centers are highly underfunded relying largely on fund raising efforts and community donations with limited local government support; and (c) crisis call centers provide life-saving services within communities that are often underserved by the behavioral health system—significantly reducing emotional distress and suicidal ideation in callers (Gould, Kalafat, Munfakh, & Kleinman, 2007; Kalafat, Gould, Munfakh, & Kleinman, 2007). These centers differ so significantly in both purpose and concept of success from commercial call centers that they cannot be held to the same metric standards. Effective intervention takes time, and crisis center work involves caller engagement, assessment, intervention, and often follow-up with individuals at high risk for suicide and/or other poor mental health outcomes.

While community stakeholders and funders have an obligation to achieve a greater understanding of the life-saving service provided by crisis call centers, crisis centers themselves have an obligation to clearly demonstrate the effectiveness of their services in responding to individuals in crisis, resolving or stabilizing high risk situations, efficiently linking callers to resources, diverting unnecessary hospital visits, and effectively using behavioral healthcare services. Collecting data, analyzing outcomes, and creating actionable improvement processes, builds trust from the public, callers, providers, and funders alike. With limited available mental health care funding, crisis centers are under even greater pressure to demonstrate center efficiencies and competency in call center metrics as they relate to health care outcomes.

In 2016, in an effort to address the lack of formal industry standards for crisis call center metrics, the Lifeline established a **Call Center Metrics Workgroup** comprised of Lifeline crisis center directors and experts in the field of behavioral health delivery systems. Through a series of work sessions, the Workgroup set about:

- Defining Service, Quality, and Efficiency Measures as they relate to Lifeline crisis centers
- Establishing benchmark data for Service Measures and Efficiency Measures that Lifeline crisis centers could use to inform their individual operations and advocate for the resources necessary to achieve such performance metrics (Quality Measures to be presented in companion document)

In addition to researching available standards, the workgroup developed a **Lifeline Call Center Metrics Survey** to establish a baseline within the Lifeline network and assess the degree to which centers followed standard metrics in their management of data.

This document highlights the available metrics used within call center environments and focuses on how these apply to a crisis center setting. Findings from a review of Lifeline call centers are presented where relevant. This

paper draws a number of critical performance measure definitions from a report by the North American Quitline Consortium (NAQC, 2010), which was developed to guide the establishment of performance indicators for telephone-based tobacco cessation services. The goal of this paper is to bring together all available information on call center metrics, provide one source of reference for crisis hotlines, to assist in the ongoing development of quality practice, and to focus Lifeline centers on the tools and trainings needed to accomplish this task. It is also intended for stakeholders wishing to establish, fund, and continuously support crisis call center services, as well as help determine proper staffing and resources that meet realistic performance expectations.

As you read through this document, it is important to note:

- This document does not provide formal recommendations on crisis center metrics for use within the Lifeline network. The range of center structures, community needs, and services provided are so unique to each center that to do so would ignore one of the most basic requirements of an effective hotline—that of knowing the community you serve.
- What we do provide within this document is a starting point for establishing benchmarks and a lens through which to begin the assessment of individual operations. Definitions and descriptions of metrics are provided in the hope that they become standardized throughout the network. Funders of crisis line services must make informed decisions regarding the service they bring to their communities and examples of how centers can calculate needs and provide funders with a more accurate determination of the cost of service across a range of suggested metrics are provided.

CRISIS CALL CENTERS

GENERAL CALL CENTER FUNCTIONS

According to NAQC (2010), there are five main operational functions in any type of call center:

1. **Workforce Management**
   Involves forecasting call volume and calculating the optimal number of staff needed to respond, creating efficient staff schedules, and managing service levels—these areas are essential in order to ensure the right number of staff for call volume.

2. **Quality Management**
   Involves customer satisfaction surveying, call monitoring (silent), performance assessment, and staff training/coaching.

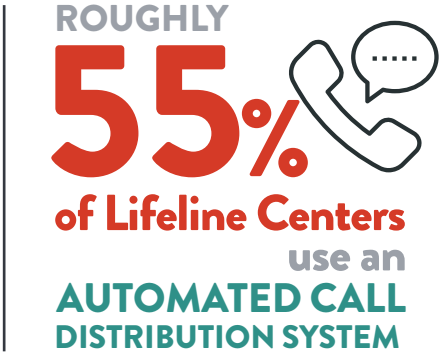
3. **Technology Management**
   Involves managing telecommunications infrastructure, effective routing of calls, and general call center management tools.

4. **Reporting and Communications**
   Involves all metrics report generating. A wide range of reports are typically generated daily within call centers to communicate overall performance in the center across all metrics. Communication both internally and externally with funders is an essential function of call center operations.

5. **Financial Management**
   Involves effectively managing the wide range of costs associated with running a crisis call center, many of which are not evident to staff and funders. Call center management is complex and significant emphasis on financial management is essential.

AUTOMATED CALL DISTRIBUTION SYSTEMS (ACD)

An ACD is a specialized phone system that can distribute incoming calls based on pre-defined rules. It can be a crucial component of a contact center, increasing efficiency and productivity as it streamlines the communications process. Automatic Call Distribution as a feature is still relatively underused within the Lifeline Network, though ACD's are standard in most other types of contact centers. (Reasons for lower use within the Lifeline network can likely be attributed to the wide range in size of crisis centers—with smaller centers not requiring a potentially expensive routing service to manage limited volume.)



Some of its capabilities include:

1. Call Queuing and Routing

Being able to hold calls in queue when no counselors are immediately available and the capacity for call routing is tremendously beneficial for busy centers and can facilitate:

- Routing calls to specific counselors based on established criteria (e.g. the longest waiting call is routed to the next available counselor)
- Routing calls to counselors with specific level of expertise or training (e.g. a counselor who is fluent in a particular language or experienced working with youth or military)
- Connection to crisis counselors sitting at different or remote locations. All counselors connected through one system can then function as one single team and calls distributed equitably.

2. Interactive Voice Response (IVR)

Some systems also include the option of an "auto-attendant" (or IVR)—which can then allow for:

- Caller self-service, in which the caller interacts with an automated answering system using the telephone keypad (e.g. press "1" for...)
- Special announcements—useful in particular for disaster response information

3. Reporting

A central function of any ACD system is the production of data that can track both call and staff performance. ACD systems can generate reports on system, staff, and user performance, quality of service levels and general business efficiency. More specifically, reports can provide answers to the following typical types of questions:

- When do we receive the most phone calls?
- How many calls were answered per counselor?
- Where are our calls coming from?
- What is the average length of a call?
- How long do callers wait for counselors to answer their initial calls?
- What times of day do callers abandon the system the most?

4. Supervision

The ACD system also facilitates effective supervision and quality assurance through the availability of Call Monitoring. This allows for real time coaching of staff. ACD systems can also allow for the recording of calls and the ACD system will notify the end user that all calls are recorded to ensure service quality.

5. Computer Telephony Integration

While ACD systems are primarily known for their ability to manage inbound calls, today's technology allows for the routing of many contact types including email, text, chat, and video. All media can be received in a single queue and programmed in a similar flow to inbound calls. Many systems can include a screen capture videos of the counselor's work.

6. Web Enabled Redundancy/Virtual Office

ACDs generally use Voice-Over Internet Protocol (VoIP) technology which means that staff can answer calls from any location with a high speed internet connection. This facilitates staff working from remote locations and time zones, a benefit that can bolster retention of staff, reduce the overhead costs of maintaining a large call center, and allow for uninterrupted service in situations where access to a crisis center location is compromised based on severe weather conditions or a local disaster.

However it's applied, a properly developed, high functioning ACD essentially serves as an automated call flow triage and management system that fast tracks communication and resolution between the caller and counselor—ultimately benefitting both.

See:

http://info.abs-inc.com/blog/how-enterprise-acd-systems-benefit-service-desk-operations

www.ameyo.com/blog/7-proven-benefits-of-automatic-call-distribution

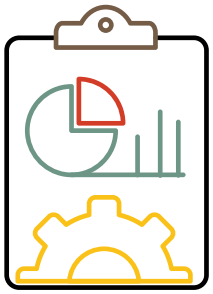
ABOUT CRISIS CALL CENTER BENCHMARKS

Setting performance standards is central to any effective call center system and benchmarking involves a comparison of one call center's practices and metrics to those of similar service providers. This comparison allows managers to identify areas for improvement in terms of center structure, business tools, cost containment, staff performance (both quantity and quality), and center policies and procedures. While overall performance metrics are most relevant for benchmarking within call center systems, gathering these numbers alone is not sufficient for overall performance assessment. Establishing benchmarks is only the start of the longer and more focused task of establishing best practices and implementing the essential steps needed to move a crisis center forward towards action and change.

Whatever measure you choose to capture at your center, establishing benchmarks is not an easy task—and for crisis centers, the wide variety of services offered, state and local funding requirements, range of metrics definitions, and often limited system capacities all serve to compound an already arduous task. According to Bocklund (2013), factors that influence benchmarking can include:

- **Industry differences**
  When there is no true match to your specific business, it is hard to compare metrics. For Lifeline centers, not only are there few other comparable industries but even within healthcare call centers, the options are limited. Lifeline centers often provide a range of services and even within crisis calls, the metrics, such as length of time on a call (or Call Handle Time) or after-call support and documentation, can vary tremendously depending on the need for rescue on high-risk calls and available supports for the caller.
- **Operational variables**
  The size of a call center can significantly influence efficiencies. Hours of operation, as well as low staffing to accommodate low volume, can create very different metrics from those at a large scale center with economies of scale.
- **Technology differences**
  Large well-funded centers may have access to technology that can significantly impact call handling time and overall efficiency. Integrated systems impact after-call work time and the ability to locate referrals and connect callers to care.

  Reporting capabilities influence the ease with which documents can be retrieved etc. Poor operations in one location and exceptional efficiency in another can skew perceptions in your comparisons.



BENCHMARKING RESOURCES

Is Benchmarking All There Is?
A paper that lists resources for benchmarking as well as cautions for common key performance indicators.

Available at: www.strategiccontact.com/articles/Contact-Center-Benchmarking-Oct2013.pdf

Call Center Benchmarking: How Good Is "Good Enough"?
Reviews basics of benchmarking as well as key areas to benchmark and cautions.

Available at: http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1002&context=press_ebooks

RELATED INDUSTRY STANDARDS

In an effort to establish benchmarks and baseline data, the Lifeline Call Center Metrics Workgroup developed a Lifeline Metrics Survey that was distributed to Lifeline centers in January 2017. This survey included 49 questions that addressed detailed call center operations and metrics specific to service and efficiency measures. A total of 128 of 159 (81%) centers responded. Findings indicated a wide range of measures throughout the network with no formal or consistent measurement practices in place. Findings from this survey are presented throughout this document. To see a full list of survey questions and responses, click here.

In addition to assessing Lifeline standards, the Metrics Workgroup also sought consultation from call center systems with similar service delivery constraints as those experienced by Lifeline centers. Findings indicated limited formal or evidence based performance standards though agreement prevailed on the essential nature of consistent data collection in this area and the pressing need for industry recommendations. The following are the key industries consulted:

American Association of Poison Control Centers (AAPCC)

The American Association of Poison Control Centers supports the nation's 55 poison centers in their efforts to prevent and treat poison exposures. Poison centers offer free, confidential, expert medical advice 24 hours a day, seven days a week through the PoisonHelp line at 1-800-222-1222 and online at www.PoisonHelp.org
www.aapcc.org

FINDING: In 2017 AAPC is conducting benchmarking with all of its 55 centers in order to set future standards centers will be required to meet for accreditation in the following areas:

- Abandoned rate (excluding "short" abandons less than or equal to 12 seconds)
- Average delay before abandon
- Average speed of answer

National Emergency Number Association (NENA)

The National Emergency Number Association (NENA) serves as the only professional organization solely focused on 9-1-1 policy, technology, operations, and education issues. NENA works with 9-1-1 professionals nationwide, public policy leaders, emergency services and telecommunications industry partners, like-minded public safety associations, and other stakeholder groups to develop and carry out critical programs and initiatives, to facilitate the creation of an IP-based Next Generation 9-1-1 system, and to establish industry leading standards, training, and certifications.`
www.nena.org

FINDING: NENA has set a service level standard for 911 centers, but has not created standards for any other more traditional "call center" metrics. The service level standard calls for:

- Ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten (10) seconds during the busy hour (the hour each day with the greatest call volume, as defined in the NENA Master Glossary). Ninety-five (95%) of all 9-1-1 calls should be answered within twenty (20) seconds

National Fire Protection Association (NFPA)

The National Fire Protection Association (NFPA) is a global nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. NFPA delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach and advocacy; and by partnering with others who share an interest in furthering our mission.

www.nfpa.org

FINDING: NFPA sets standards for service level, requiring that 95 percent of alarms received on emergency lines be answered within 15 seconds, and 99 percent of alarms be answered within 40 seconds.

North American Quitline Consortium (NAQC)

The North American Quitline Consortium (NAQC) is an international, non-profit membership organization that seeks to promote evidence-based Quitline services across diverse communities in North America. Quitlines are telephone-based tobacco cessation services that help tobacco users quit.

www.naquitline.org

While not directly interviewed, the Lifeline drew heavily from a paper developed by the North American Quitline Consortium (NAQC, 2010) which appeared reflective of standard call center operations and most closely aligned with a crisis call center model. This paper noted the lack of existing industry standards and began to establish some benchmarks for the NAQC.

WHAT DO WE KNOW FROM ACCREDITING BODIES?

URAC

URAC promotes continuous improvement in the quality and efficiency of healthcare management through processes of accreditation, education, and measurement.

www.urac.org

FINDING: The following is the one relevant standard from URAC. Health Call Center standard HCC 11:
The organization achieves and maintains the following minimum monthly performance for incoming telephone calls:

a) An average blockage rate of 5% or less
b) An average speed of answer by a live person within 30 seconds
c) An average abandonment rate of 5% or less

Abandonment rate is measured as the percentage of calls that disconnect after 30 seconds when an individual (live person) would have answered the call. For example, if there's pre-recorded message or greeting for the caller, the 30-second measurement begins after the message/greeting has ended. (On ACD reports, monitors calls the "drop" after 30 seconds.)

Alliance of Information and Referral Systems (AIRS)

The Alliance of Information and Referral Systems is the professional membership association for community Information and Referral (I&R) and Information and Referral/Assistance (I&R/A) providers. They are the driving force behind the delivery of quality I&R services and the sole source for standards, accreditations and certifications for the community information and referral sector.

www.airs.org

FINDING: AIRS does not require that any particular target is met, but does ask that centers track the following metrics and sets what could be considered reasonable targets (if all other factors are equal) for some metrics.

Standard 27, Quality Indicator 2: To support management information needs, the I&R service has a method for tracking key performance indicators (KPIs) such as:

- Call volume
- Abandoned calls
- Average abandonment rate
- Occupancy rates: A reasonable target is between 65% and 80%
- Average speed of answer. A reasonable target is less than 90 seconds
- Service level: A reasonable target is 80% of calls within 90 seconds
- Average call handling time
- Average talk time
- Incoming call patterns

Note: 2-1-1 may have additional requirements for I&Rs in their system

CARF (Commission on Accreditation of Rehabilitation Facilities)

Through accreditation, CARF assists health and human services providers in improving the quality of their services, demonstrating value, and meeting internationally recognized organizational and program standards.

www.carf.org

FINDING: The following is the one relevant standard. Behavioral Health Standards, Section 4.C. Crisis and Information Call Centers (CIC): To ensure access during identified hours of operation, the program implements written procedures that:

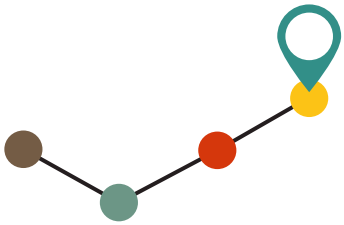
a) Identify thresholds for timeliness of response

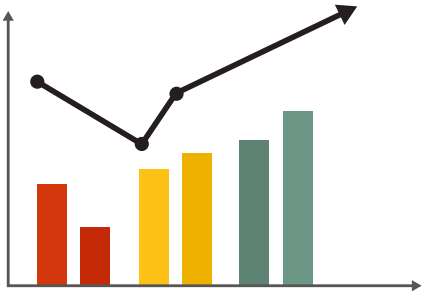
b) Provide for monitoring of attainment of thresholds

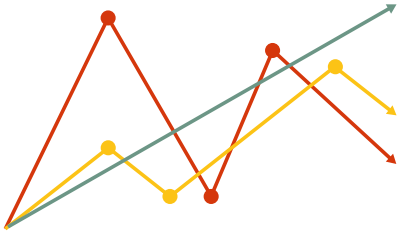
c) Identify a process for implementing changes in response to: results achieved and changes in demand or capacity

Intent statements: The program has procedures in place to match resources (i.e. staffing, call transferring, timeliness, etc.) to anticipated need levels to achieve desired services.

KEY PERFORMANCE INDICATORS (KPIs)







According to NACQ (1020), the key performance indicators most commonly referred to within the call center industry fall into three general categories—Service, Efficiency, and Quality. These categories are listed below along with the associated measures. Within this paper, we have chosen to focus on **Service and Efficiency Measures** as reflected in the needs of Lifeline centers, with Quality Measures to follow as Part II.

SERVICE MEASURES	EFFICIENCY MEASURES	QUALITY MEASURES
Accessibility	**Contact Handling**	**Call-Handling Process**
Blockage	Average handle time	Telephone etiquette
Hours of operation	After-call work time	Knowledge/competency
Self-service availability	On-hold time	Error/rework rate
Call abandonment rate		Adherence to protocol
Speed of Service	**Resource Utilization**	**Resolution**
Service level	Staff occupancy	First-call resolution rate
Average speed of answer	Staff shrinkage	Transfer rate
Longest delay in queue	Schedule efficiency Schedule adherence Availability Cost Efficiency Cost per call	

SERVICE MEASURES (SM)

Two elements that play a key role in service delivery are the ease with which potential users can access the service provided and the efficiency in which their needs are met. Service Measures refer to the overall Accessibility and Speed of Service provided.

ACCESSIBILITY: BLOCKAGE (SM-1)

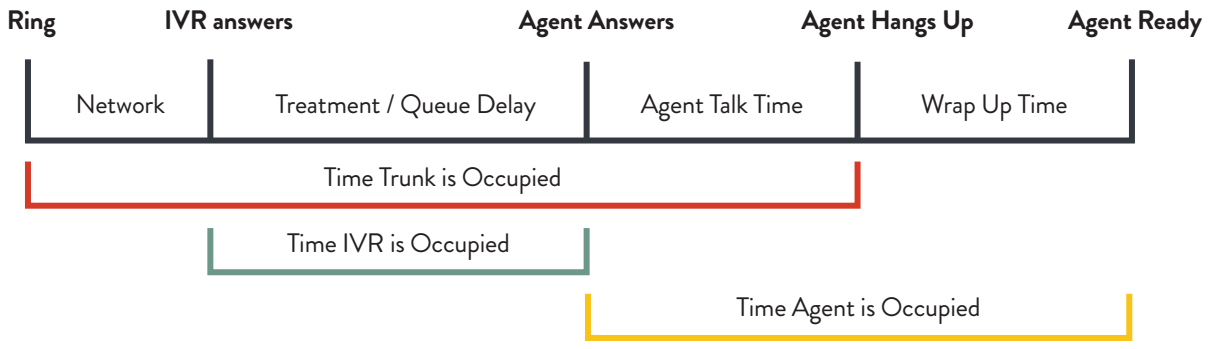
Blockage is defined as the percentage of callers who are unable to access the call center, or even enter a call center queue, because of an insufficient number of phone lines (or phone trunks). These callers receive a busy signal.

The Lifeline routing system has been developed in such a way that no callers to the Lifeline would ever get a busy signal. However, to make sure your center is not bouncing back Lifeline calls due to lack of trunk capacity, and for centers with additional local crisis lines, it is important to understand the degree to which calls can access the system.

Oftentimes staffing plans are developed based on volume of calls typically received—a useful benchmark when all calls are actually getting in to the system. Trunk blockage can be measured by looking at an all-trunks-busy report within the ACD system which will indicate when all lines were busy and callers were receiving a busy signal. For those centers without an ACD, a blockage study (or busy study) can be requested from individual carriers.

Calculating Trunk Requirements

Whereas the number of staff required to answer incoming calls can be dynamic, changing throughout the day, the number of lines required to connect a call center with a central office exchange is fixed and must cater for the maximum anticipated traffic levels which will be encountered. Call volume is used to calculate both staffing and trunk requirements, taking into account the different elements associated with staff and trunk handle time. For a staff member, call handle time includes talk time plus after-call handling. In evaluating telephone trunk needs, the data required involves ring time, queue time and talk time. The Erlang B traffic model can be used to estimate the number of lines required.



For an excellent explanation of how to calculate call center telephone trunk requirements see: www.swpp.org/certification/articles/calculating-trunk-requirements/. Also: www.erlang.com/calldesign.html

Source: Cisco.com

ACCESSIBILITY: HOURS OF OPERATION (SM-2)

While the Lifeline service is available 24/7, call centers within the network operate at varying hours. When setting up local crisis line hours, how is it determined which hours are the most appropriate?

Some decisions are made simply on the general hours an agency is open (e.g. 9am-5pm) but it is important to assess, where possible, the hours the service itself is most needed. NACQ (2010a) recommends assessing the number of calls that arrive outside of business hours (including calls to an answering service, unanswered calls directly to the line, or messages left on a machine) as well as the number of individuals that call back during business hours. A cost-benefit analysis can then be done to determine the cost per hour of providing access during low-volume time periods.

ACCESSIBILITY: SELF SERVICE AVAILABILITY (SM-3)

Many call centers rely on the use of an upfront menu or Interactive Voice Response (IVR) system that allows for the identification of caller needs and routing of callers to the most appropriate agent.

When a caller dials the Lifeline, for example, they will first hear an initial greeting and be provided with the options "for Spanish press 2" or "if you are a military veteran or current service member, or are concerned about one, press 1 now." Once a caller passes through this system, the call is routed appropriately. **Crisis centers CANNOT place an IVR on the incoming line that receives Lifeline calls.** It is specifically prohibited in the Lifeline network agreement to "utilize an automated attendant or any other system that requires a Caller to press a telephone key in order to be connected with Center Staff." Remember—callers to the Lifeline have already passed through the Lifeline greeting.

Crisis centers might consider using an IVR for local lines, as it can help increase caller satisfaction and staff efficiencies. Callers that participate in the IVR system can be directed to staff that are specifically trained in certain skills and most capable of meeting their needs. There is less need to transfer callers and a greater opportunity to directly address and resolve the caller's needs. The IVR system can also provide data on most used menu options and where an individual may abandon the system allowing for a more thorough assessment of IVR and center efficiencies. In a similar way to which website analytics can provide information on most visited web pages and links, as well as time spent on various pages, the IVR system can provide useful statistics for designing user friendly and efficient systems to benefit callers.

A NOTE ON IVRS

If your center chooses to use an IVR for local lines, it is important to remember that, for callers in crisis, fewer options in the IVR menu are optimal. Stressed callers will not want to engage a complex system and will want clear and concise directions on how to reach the right person.

LIFELINE SURVEY FINDINGS

SELF SERVICE AVAILABILITY (IVR USE)

29% (33) CENTERS reported using IVR

"**Callers are asked if they are in crisis, so the call can be escalated to an agent.** If the call is an I&R need, the caller can listen to recordings for referrals on rent and utility assistance or they can stay on the line and get connected to a specialist. The caller is also prompted to enter their zip code. I&R callers are able to leave a call back number if they prefer not to wait—the call back feature has helped reduce the abandonment rate of our I&R calls."

"**We have an IVR only for 211 calls, not for crisis or Lifeline calls.** This screens out phantom 211 calls. We will soon be implementing a contact center software (in Contact) and this will provide our callers with more options to prioritize/reach the correct level of care."

"**IVR informs caller of potential quality assurance monitoring and sorts for preferred language use.** This step also sorts after-hours business calls into the staff phone tree if caller wishes to leave a message."

16 CENTERS reported taking the time to evaluate their IVR effectiveness

"We reviewed the most requested needs and funder requirements. We also reviewed IVR best practices. **The IVR has no more than five options and three levels of choices.**"

"**Using different wording, shorter wording so callers don't tune out,** and start pressing any button. Consistent coaching/training with staff on assessing/transferring callers, callback feature to decrease callers from "jumping the line'."

"**Adding the crisis priority** has helped significantly in triaging calls."

"**We limit the number of options** so as not to overwhelm and change options seasonally."

"We found that if you are trying to divert non urgent calls to more appropriate resources, it is best to **place the crisis option later in message**—conversely if your goal is to get to urgent services more quickly with less abandoned calls, put your crisis choice option up front."

ACCESSIBILITY: CALL ABANDONMENT RATE (SM-4)

The call abandonment rate is defined as the percent of callers who hang up or disconnect prior to their call being answered (including a call that is answered by an ACD system but terminated before a counselor answers it.)

For general service centers, abandoned calls can lead to caller dissatisfaction and lost enrollments or business. For Lifeline centers, call abandonment holds greater significance. Some abandonment should be expected, particularly given the degree of courage it can take to make a call for help. Some callers may dial the Lifeline, let the phone ring, grow anxious in anticipation of a challenging conversation, and abandon the call before it is answered. Others may not like to wait. For centers with an ACD system, a caller may react negatively to being placed in a queue if a counselor is not immediately available. Whatever the reason, abandoned calls for Lifeline centers can lead to more than dissatisfied callers: the result is far more significant, resulting in potentially high risk callers not receiving a crisis service and potential lives lost.

When analyzing your abandon rate, be aware that there will always be a small percentage of people who call the wrong number and hang-up once they hear your crisis center name on any upfront automated message or comfort message while in queue. Typically these false abandon rates are calculated within the first 10 seconds.

For non-ACD centers, you can think about these "early abandons" as calls that hang-up prior to the second ring, since one "ring cycle" is generally six seconds.

MEASURING CALL ABANDONMENT

EXAMPLE:

YOU RECEIVE
50 **CALLS IN ONE HOUR**
OF THOSE CALLS,

8 **PEOPLE HANG UP** **BEFORE** SPEAKING TO AN AGENT

16% **ABANDON RATE**
FOR THE HOUR

A NOTE ON ABANDONMENT RATE

Abandonment rate can be measured using the reporting features of your center's ACD, if you have one. Make sure that you are familiar with how the built in reports are generated–are they raw data? Or are they pre-set or have they been set in the past to filter out short abandons?
It's important to know the report parameters when using canned reports. If your center does not have an ACD you might be able to contact your telephone services provider for a report that would provide some basic information. You might also be able to create a less scientific, but still valuable report by having your crisis counselors manually track calls that ring in to your center that hang up before they are able to answer.

There is no industry standard for call abandonment rate. Call abandonment rates are influenced by several factors some of which are not entirely in the call centers control. Having adequate staff to answer calls will influence the average wait time in a call center queue which will in turn influence abandonment rates. Elements outside of center control include caller tolerance and expectations, time of day and the availability of other comparable services. It is important to note that high abandon rates have the potential to artificially inflate future call volume as the initial callers who could not get through on the first call continue to call back until they reach a counselor.

Abandoned Calls are not a good indicator of caller experience and are largely a result of caller motivation. Looking at abandonment rate is most helpful as supporting information in relation to service level and response time reports—not as a primary objective.*

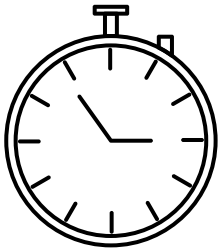
LIFELINE SURVEY FINDINGS

CALL ABANDONMENT

57% **(66) CENTERS** reported measuring **ABANDONMENT RATE**

- **28 CENTERS REPORTED EXCLUDING "SHORT"** abandoned calls from their calculations "Short" metric (Range: 5–45 seconds/Mode: 10 seconds)
- **In setting target abandonments rates,** many reported doing so based on an "industry standard" or requirement of AAS, AIRS, and Lifeline (none of which have in fact a requirement)
- **14 centers reported threshold** as funder requirement
- **Eight centers** responding to the survey **were unfamiliar with the term**

* Source: ICMI, 2017b



SPEED OF SERVICE: SERVICE LEVEL (SM-5)

Another frequently used call center Service Measure is "Speed of Service." This is measured through service levels, average speed of answer, and the longest delay in queue. Importantly for Lifeline centers, length of a call is not reflective of the helpfulness of a call and this measure, as others, needs to be reviewed within the context of all other benchmark data—in particular, Quality Measures (see *Crisis Center Metrics: Part II*).

Service level can be defined as the percent of calls answered by a crisis counselor within a certain wait threshold (e.g., X% of calls answered in Y seconds or less).

Service level measurement is perhaps one of the most commonly reported KPIs as it is directly associated with quality service provision and overall call center performance. It is the metric most often associated with funding and therefore is also one of the metrics that decision makers must take a systematic and thoughtful approach to measurement. Establishing reasonable and achievable service levels is essential if a center is to maintain an effective service while also meeting funder expectations.

As with many of the other elements discussed, **there is no industry standard** for service level. This is largely due to the fact that call volume and service levels can fluctuate widely for many reasons—current events, the industry itself, and the economy to name a few. For Lifeline centers, high profile suicides and media coverage of tragic events can significantly impact volume. This, coupled with little advance warning often results in significantly long wait times for callers while crisis line staff try to catch up. Many call center managers when asked about optimal service levels will reference the 80/20 rule, in which 80% of calls should be answered in 20 seconds or less. The basis for this standard within a call center, however, is generally unknown—few people can identify the source of this standard. Unreferenced information online identifies a 30 year old study where AT&T conducted a survey which determined that customers were likely to start hanging up at around 20 seconds. That 20 seconds, however, is now assumed to be the amount of time that a phone rang before callers believed that no one was there and would hang up. Although this study was important in informing service level standards today, it was undertaken before the days of IVRs, ACDs, waiting queues, recorded greetings, or music on hold.

A NOTE

NENA requires ninety percent (90%) of all 911 calls to be answered within ten (10) seconds during their busiest hours and ninety-five percent (95%) within twenty (20) seconds at all other times.

LIFELINE SURVEY FINDINGS

SERVICE LEVEL

62% **(52) CENTERS** reported measuring **SERVICE LEVELS**

- **39 OF THESE REPORTED SPECIFIC SERVICE GOALS** (with 23 reporting these service goals were set by funders)
- For these centers, the goals ranged from 95% in 14 seconds at one end to either 75% in 30 seconds or 80% in 120 seconds at the most lenient end
- Many centers reported that their service levels were **based on industry standard**s (such as AAS, AIRS, or Lifeline requirements), however no formal industry standards are in place at this time

There are many factors to take into consideration when determining service level objectives that involve a focus on caller, staff, and agency. These can include the following, adapted from Geraghty (2014d):

CALLER Needs, Expectations, and Patience

Individual caller needs significantly impact the extent to which an individual is willing to wait in queue before their call is answered. For example, a caller who would like a quick answer to a simple question, such as the number for a local service provider, is more likely to abandon their call if the wait seems too long than someone who is looking for more input or advice in addressing a complex issue. For Lifeline centers, many will fall into the latter category with callers often seeking support for serious personal or family related mental health crises. Similarly, some callers will sacrifice the quality of the interaction for a speedy response while others would rather wait to speak with someone who has the time and knowledge to dedicate to resolving their particular concern. Understanding a callers priorities, therefore, assists in the establishment of appropriate service level objectives.

STUDY HIGHLIGHT*

In one analysis of Customer Patience in a Bank Call Center, Feigen (2006) chose to analyze the queue that customers enter in order to receive agent service, that is, the one the customer joins after s/he has completed interacting with the IVR system.

Feigen was particularly interested in discovering what may influence a customer's patience. For example, do particular messages about expected waiting time have an influence; and if so, what influence? Alternatively, is there any relationship between a customer's patience and his experience in the IVR stage of his call?

Findings indicated that the amount of time a caller has already invested in a call impacts caller patience when waiting for an agent to answer. Having invested more time in the pre-queueing stages, a caller tends to be more patient. In addition, announcements concerning anticipated waiting time appeared to prolong a caller's patience (although they noted that there is some evidence to suggest that if the information given is not in accordance with the actual ongoing waiting experience, then the caller will abandon more readily than if s/he had not been given any information).

For more detailed information see: Feigin, P. (2006). Analysis of customer patience in a bank call center. Retrieved from: https://iew3.technion.ac.il/serveng/References/CCA-Patience.pdf

A callers expectations will also have a large impact. This issue is of particular relevance for the Lifeline given typical public perception that all suicide hotline calls should be picked up immediately (100% with no wait). In some industries, where it is understood that you are likely to wait some time before your call is answered (credit card companies, help desk etc.) callers will typically wait longer to speak to a representative. Callers expectations are also influenced by their previous interactions with the call center or with a similar service, so if crisis center calls are perceived as always answered quickly—either by reputation or previous experience—callers will maintain that expectation every time they call.

Taking caller patience (defined as time until abandoning the queue) into consideration is a crucial element in determining appropriate service levels. How long are people actually willing to wait for a service? As noted, caller needs and expectations can significantly influence this outcome, as do a range of person specific factors (personality, mood, amount of free time) and for Lifeline callers, possibly degree of distress. Determining this, however, can prove exceptionally difficult. When asked, few centers in the Lifeline network could ascertain the length of time individuals were willing to wait before hanging up.

* Source: Feigen, 2006

In addition, even when assessing specific call abandonment rates, there is no available information on which callers abandon—those in crisis or those looking for a quick answer to a simple question that are not willing to wait. This question is of particular importance to the Lifeline given the scrutiny placed on Lifeline centers ability to meet the needs of the caller. It is possible, for example, that callers in suicidal crisis are willing to wait far longer than assumed to speak to someone who can help and the ongoing focus on speed of answer is not as relevant as originally thought.

> “Research by the North American Telecommunications Association shows that 90 percent of customers on silent hold abandon after 40 seconds. That means that you could lose those customers if they’re not hearing something. Playing music for callers who are on hold will increase the hold time by 30 seconds; however, the type of music played will have an effect on the caller’s perception of delay. A study by Avaya Communications, a global provider of communications solutions and services, found that, while men perceived the wait to be shorter while listening to classical music, women perceived a longer wait time with the same type of music. And both sexes perceived the wait time to be longer when rock music was played, while “light jazz” created the perception of a shorter wait time.”

Source: http://soundcommunication.holdcom.com/bid/61074/How-Message-On-Hold-Can-Increase-Call-Tolerance

A NOTE ON CALLER TOLERANCE (PATIENCE)

Do suicidal callers have a lower wait time tolerance than non-suicidal callers? How essential is rapid speed of answering to suicidal callers? Assessing caller tolerance is an important area of focus for the Lifeline. It would be of tremendous value to be able to demonstrate that a caller's capacity to wait is only impacted when the wait extends beyond a certain timeframe (XX number of seconds.) For funders and other responsible parties, the great level of concern about the safety of suicidal callers translates to assumptions ranging from "we cannot keep acutely suicidal callers waiting very long" to "we cannot keep them waiting at all." In order to provide adequate staffing to respond to suicide hotline calls in particular, it would be highly valuable for funders if there were data to demonstrate a relationship between average speed of answer and engaging more (or less) suicidal callers. For example, a funder may surmise that answering 90% of suicide hotline calls in 15 seconds will make a notable difference in the number and proportion of suicidal callers engaged than a service standard of 90% in 30 seconds, and set staffing and performance expectations accordingly. However, the 90% in 15 seconds standard is considerably more costly to sustain in terms of staffing, training, and supervision than the 90% in 30-second threshold. If funder budgets are tight, is the additional funding investment worth it to engage more suicidal callers?

In an effort to look at the impact that more stringent answer rates had on the ability of crisis centers to serve those at risk for suicide, the Lifeline asked several large centers in the network to analyze data both before and after major changes took place in service standards set by the funder (alongside increased staffing to manage calls at the higher service standard). In particular, could these centers see any change in the number of suicidal calls they answered before and after the change. The assumption being, that if longer wait times were negatively impacting callers, particularly those in an acute suicidal state, that when wait times were cut significantly a greater number of suicidal individuals would be served. Effectively, the longer wait times were causing those in acute distress to give up/hang up. While a lot of confounding variables would influence outcome, as a gross measure, were the proportions the same?

In a review of available data, these centers could see no evidence that shorter wait times lead to a higher proportion of callers reporting suicidal ideation, nor did they see, on a per call level, that callers who go on to report suicidal ideation had particularly short wait times. No data is available to support **ANY** statement about suicidal callers' wait time tolerance—meaning, therefore, that we also **cannot support the assumption that decreasing wait times—to an ASA of say <30 seconds—will in fact improve a hotline's ability to connect with more suicidal callers.**

Lifeline centers with ACD systems can all participate in analyzing data on caller abandonment rates and tolerance levels. Centers could analyze abandonment by looking at where in the queue an individual hangs up—does this change if announcements are repositioned? If information is provided while in queue? If callers are informed of potential wait times etc.? Crisis centers that are willing to experiment and test could provide invaluable information to both the Lifeline network and the crisis call center industry as a whole.

CENTER HIGHLIGHT: PROTOCALL

Caller patience (also referred to as "caller tolerance") refers to how long a typical caller is willing to wait in your center's queue before hanging up. Caller patience will vary between industry segment, and even between crisis call centers, based on unique attributes of the clients and stakeholder groups and their expectations. Understanding and influencing caller patience is an important and inexpensive opportunity for a call center manager to improve KPI's.

At ProtoCall, for example, data showed that 35% of all callers who hung up prior to a live answer did so within the first 12 seconds of a call. In one recent experiment, they replaced the typical "ring tone" with an immediate message telling callers that they have "reached the crisis line and are being connected to a counselor." The simple change from an initial ring tone only to an immediate message confirming for the caller that they've reached the crisis line created an immediate reduction the long abandons. By providing callers with more immediate information up front, the percentage of total abandoned calls that occurred within the first 12 seconds increased, while the percentage of long abandoned decreased by 20% in the testing group.

What should be exciting for the call center manager is that modest gains like these can be obtained without costly scheduling or staffing adjustments. ProtoCall continues to experiment with other ways to address a caller's experience while in queue that could encourage callers to wait longer to reach a counselor, thus helping to contribute to lower abandonment rates, better KPI's, and more callers getting the service they need.

STAFF Needs, Workload, and Satisfaction

Establishing service level expectations also impacts staff and it is important to understand the capacity of staff to tolerate additional volume and expectations. Setting service level objectives without thoroughly assessing the corresponding staffing strategy and support systems in place can significantly influence employee workload and can have the inverse effect of decreasing productivity and service levels. When selecting a service level, it is essential to assess average call volume for any particular line, with stricter standards on lines with lower call volumes where staff are fully capable of answering calls, than lines that may have higher call volumes and fewer specialized staff.

A decrease in job satisfaction and morale can have widespread impact and negatively impact quality. Employee satisfaction is essential for any business and the added stress of both a call center environment and the heavy emotional toll that crisis line calls can take only add to the need for support for crisis line staff. Ensuring that staff strain and emotional well-being is not compounded by agitated and angry callers who have waited in long queues or overwhelmed from inflexible scheduling is essential when selecting your service level objective.

AGENCY Needs, Values, and Budget

A focus on the core values of your agency is essential when selecting service level objectives. Call centers that are focused on volume and efficiency in caller support should have higher, more stringent service level standards than those that place a higher focus elsewhere. While the individual values and overarching missions of Lifeline center agencies vary, they do unite in their focus on quality and the provision of emotional support and meaningful interventions with callers. Lifeline crisis centers face the challenge of balancing quantity for funders and providing a quality intervention that supports core values.

One of the largest influencers on service level is of course budget. In general, more staff are required to meet higher service level objectives. For many Lifeline network centers, service levels are set externally by funders and it is important that realistic expectations are set that reflect budget limitations. In addition to staffing, budget considerations must take into account infrastructure investment—such as the technology used for optimal service. Essentially, taking your budget into consideration when calculating your service level objective is imperative.

HOW TO CALCULATE SERVICE LEVELS*

Carefully defining and measuring service levels consistently over time can be used to make data-driven decisions that can have a positive impact on the call center performance, highlight center needs, and bolster applications for funding. While some of the following steps may seem overwhelming (or beyond the capacity of a crisis center or reporting system) they are included here to help guide centers through the process of establishing consistent and effective center practice in this area:

1. Decide how you'll classify abandoned calls

Deciding how you will classify abandoned calls is crucial to ensuring that service level is accurately assessing what you would like it to. There are three ways to classify abandoned calls:

- **Missed opportunities:** Here, abandoned calls are considered missed opportunities to connect with a caller. Thus, they will negatively impact service level. This method of calculating service level is common with companies that generate revenue from sales calls but for Lifeline centers represents a missed opportunity for intervention.
- **Counted:** At times, callers will hang up before a predefined time threshold (for example, during a recorded message). This type of call can be counted as a "call offered" and will positively influence the service level calculation. This method is common within adequately staffed call centers with short wait times. The assumption here is that abandoned calls are unavoidable and since their wait times are low, the hang up is less likely due to a callers frustration and more to do with a caller's circumstance—they were busy or distracted or lost reception—and that they will call back. Thus, these calls should not negatively impact the service level calculation.
- **Ignored:** This approach removes abandoned calls from service level calculations. This method is more general and assumes that abandoned calls are unavoidable. Ignored calls then do not affect service level, either negatively or positively.

2. Define a formula

The next step is to define a service level formula. The following examples reflect the same actual performance—each one, however, reflects a slightly different view of service levels. Any of the formulas listed are acceptable; it is essential that the same formula and classifications are used over time to ensure consistent data is produced.

*Adapted from Geraghty, 2014b

TABLE 1:

SERVICE LEVEL FORMULAS ICMI (2017B)

Using The Following:

Total Calls Answered: 479 **Total Calls Abandoned: 50**

Calls Answered in Y Secs: 429 **Total Calls Abandoned in Y Secs: 44**

(Where Y = 30 secs = required threshold) From Above: In this example, 479 calls were answered and 50 calls were abandoned - meaning that 529 calls came in to the center. Of the 50 people that abandoned, 44 hung up within 30 seconds or less and six waited longer than 30 seconds before hanging up. Some centers may decide that they will only count people that stay on the line at least 30 seconds in all their calculations—maybe the voice message they first receive lasts almost 30 seconds for example and anyone who hangs up during that will be considered as someone who changed their mind or realized they had a wrong number. Each center should set a time they consider as a "short abandon" and decide whether to include these in service level calculations.

The requirement by a funder may be—answer 80% of calls within 30 seconds or less. Your required service threshold is therefore 30 seconds. But what difference does a formula make?

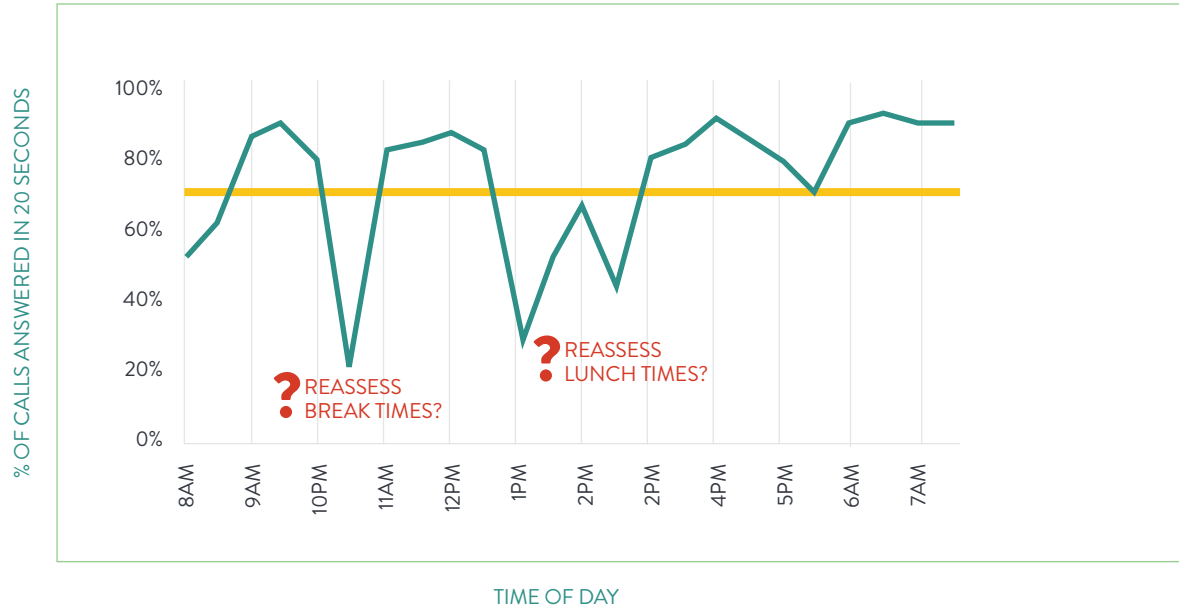
	SERVICE LEVEL	EXPLANATION
FORMULA 1		
(Calls answered in Y secs + Calls abandoned in Y secs) / **(Total calls answered + Total calls abandoned)** 429 + 44 = 473 = .894 479 + 50 529	**89%**	Here all abandoned calls are taken into account regardless of when they abandoned. Short abandons count as answered calls. Longer abandons are included in the denominator as calls offered. They are counted as a negative, as a call that could have been picked up but wasn't—leaving the answer rate of 89%.
FORMULA 2		
Calls answered in Y secs / **Total calls answered** 429 = .895 479	**90%**	Here we only consider calls that were answered in the threshold time within the group of all calls answered. Abandoned calls are completely ignored (as if not offered) and the assumption is that abandoned calls are reported somewhere separately. This service level of 90% can be misleading as it doesn't take into account those that could have been served.
FORMULA 3		
Calls answered in Y secs / **Total calls answered + Total calls abandoned** 429 = 429 = .81 479 + 50 529	**81%**	This formula only takes into account those calls answered within the specified threshold but counts all abandoned calls as equal and as a negative (a missed opportunity to answer a call). That is, it counts abandons regardless of when in the system this happened. Using this formula will provide the lowest view of service level of any of the four formulas.
FORMULA 2		
Calls answered in Y secs / **Total calls answered + Total calls abandoned after Y secs** 429 = 429 = .884 479 + 6 485	**88%**	This formula takes into account those callers that waited 30 seconds and then hung up (6)—these were offered calls and it shows the percentage of calls that COULD have been answered— ignoring "early abandons"

3. Decide on Time Interval

In calculating service levels, deciding on a time interval for review is crucial and will significantly influence your service level calculation. Service levels are generally measured in 30- or 60-minute intervals and can be reported as a cumulative average over the day, a weighted average over the day based on the actual calls per half hour, or can be gauged as a percentage of half-hours of the day in which the half-hour service goal is met. Final reports can be aggregated over whatever time is required by the funder but the basic data should be reported in consistent increments of time. When considering time intervals for review, it is important to note that the longer the measurement interval, the harder it is to pinpoint problematic patterns in service. **Monthly intervals, for example, can often be misguiding and disguise where the weaknesses lie in a system.** Monthly service levels may meet targets but in reality the center may have been overwhelmed with calls during the first week of the month, with high wait times, and low call volume at the end. Similarly, weekly, staff may be completely overwhelmed on a Monday and Tuesday but idle at the end of the week. Even daily averages can disguise the fact that staff are scrambling at 11am and the call center is completely overstaffed at 4pm. According to ICMI, standard intervals can be 15 or 30 minutes though if calls average 20 to 30 minutes, 15 minutes may not make much sense. Ideally, 30-minute intervals are key to accessibility and most efficient use of resources (ICMI, 2017).

AS AN EXAMPLE:

SERVICE LEVEL BY INTERVAL



4. Decide when time interval starts

After you have chosen a time interval, you should define when it starts. Some suggestions are:

- When the caller selects their option in the IVR
- When the call enters the ACD for a particular center
- After the initial greeting has ended
- After a predetermined time interval (i.e. five seconds after the caller enters the queue)
- As soon as the phone rings

5. Decide how to collect the data

Having call center software that allows you to accurately and meaningfully measure service levels at your crisis center is essential. Most ACDs will collect data based on predefined service level objectives and time periods—data could then simply be:

- The call is answered
- The call is abandoned
- The caller waits longer than the predefined service level threshold without hanging up or being answered

After you decide how to classify abandoned calls, you can better understand how to account for each call type in your service level calculation.

6. Analyze the data

Many call center software solutions will automatically analyze service level for the predetermined time period you selected. This makes tracking service levels simple.

7. Display the results

Counselors and managers need access to data in real time in order to effectively address service level issues. Many crisis centers make data available through public dashboards, essentially TV monitors within the call center, and with daily feedback reports for maximum impact.

8. Act on the results

Gathering data is pointless unless you use the findings to make informed decisions on how best to meet goals. Changes to program operations should reflect need. When calls increase, for example, have the capacity to route calls to off-site staff or plan breaks so that it doesn't impact service. Acting on data like this in real time can significantly impact center performance.

9. Repeat the process

Crisis center practice and service provision is fluid and frequently reflective of the changing public environment. As service delivery options change, so too should service level objectives. It is important that centers consistently reassess caller's needs and expectations as well as whether or not service level objectives remain aligned with agency goals.

A NOTE ON SERVICE LEVEL

Whatever level is set, one of the most important things to remember in service level measurement is consistency over time. All elements and means of calculating should be clearly defined so that informed review of data and program changes reflect accurately the call center performance.

When working with a funder to determine service level requirements for a new contract make sure to calculate your staffing costs to take the desired service level into account. See later section on using an Erlang C to determine staffing needs and section specifically aimed at funders/stakeholders.

If you do not have an ACD at your center, calculating a service level will be difficult if not impossible. In theory, since you are not queueing callers, this percentage will be relatively stable as long as you staff adequately. In this situation, it is essential to monitor abandonment rates to ensure staff do not miss many incoming calls.

10 FACTORS THAT CAN CAUSE LOW SERVICE LEVELS

1. **Low schedule adherence**
Schedule adherence is a benchmark that measures whether or not staff show up to work on time, start taking calls when expected, take breaks at appropriate times and go to lunch according to schedule. Low schedule adherence affects service level when the number of staff taking calls is different from expected.

2. **High absenteeism**
Fewer agents fielding calls and an inevitable decline in service level if management cannot make adjustments accordingly.

3. **Calls take longer than expected**
When calls take longer than expected, more agents will be tied up with callers and service level will decline. This can happen when a center has technical issues (i.e. website goes down, there is a bug in the software etc.), training issues (i.e. staff are not fully prepared), when unexpected events occur, or when you have many new counselors taking calls. For crisis centers, individual calls can have greater variation in length than in traditional customer service contact centers.

4. **Inaccurate call forecasting**
Call forecasting is a complex task that requires taking into account call history, seasonal rushes, day of the week, time of day, holidays, etc. It is critical for staffing and scheduling and will have a large impact on service level. If call volume is higher than predicted, there will not be enough agents on staff to field all calls and service level will decline.

5. **Less than optimal scheduling**
Scheduling staff is also a complex task that involves taking into account vacation days, sick days, historical call volume and current events as well as amount of time spent on calls, breaks, after-call work, providing support on different mediums (i.e. chat, email, phone, social media) and in meetings. When scheduling doesn't take into consideration all factors that might affect agents while they are at work as well as accurately predict call volume fluctuations, scheduling may be less than optimal and service level will likely decline. Having some flexibility in scheduling is very helpful when call volume increases unexpectedly and having a few more hands on deck is all that is needed to keep service level high.

Source: Geraghty, 2014a

10 FACTORS THAT CAN CAUSE LOW SERVICE LEVELS (CONT.)

6 **High agent attrition rates**

Agent attrition is the percentage of call center agents who leave their position (fired, quit, or promoted) during a given period of time. It can negatively impact service level for two reasons: 1) it can become challenging for management to fill positions, the number of agents fielding calls declines and as a result, so does service level; 2) when management fills their positions with new staff, they take longer to resolve issues, finish after-call work and in general are less efficient than more seasoned staff.

7 **Unplanned call fluctuations**

When call volumes and durations fluctuate during the day in a pattern that is unpredictable or unanticipated, adjusting staff to accommodate these fluctuations can be challenging. Call centers that don't have agents on call to handle overflow calls or that are more rigid in their scheduling are less likely to handle these call fluctuations and service level will decline.

8 **Unscheduled meetings**

Call centers, like any workplace, are not immune to the occasional, last-minute emergency meeting. When these unscheduled meetings occur, this takes agents off the floor and service level will decline.

9 **Long after-call work (wrap-up) time**

After-call wrap-up time is the amount of time that an agent takes to finish all tasks associated with the call. These tasks may include updating the database, helpdesk, or CRM; completing paperwork; collaborating with a colleague; sending an email; updating a calendar. Agents who are engaging in after-call work are typically not available to field calls until they finish. Thus, long after-call wrap-up times will decrease the number of staff available at any given time and service level will decline.

10 **Less than optimal call center software**

Call center software can have a major impact on service levels. Software that is difficult to navigate, doesn't integrate with business tools, doesn't have an efficient call routing system, has less than optimal waiting queue configurations or that doesn't have real-time reporting can cause even your best agents to be less efficient and effective. The more time they spend updating multiple business tools; trying to transfer calls to the correct department; searching for information or trying to figure out which call to take from the waiting queue, the less available they will be to field calls and service level will decline.

Source: Geraghty, 2014a

SPEED OF SERVICE: AVERAGE SPEED OF ANSWER (SM-6)

Average Speed of Answer refers to the average time calls are in queue before connecting with a crisis counselor during a certain time period. This does not include the time it takes for callers to navigate through an IVR. The most common formula for calculating the ASA is:

ASA = Total Waiting Time for Answered Calls / Total Number of Answered Calls

There is no industry standard for ASA or for the number of periods of the day in which ASA goals should be met. The key is to measure the interval (hourly/half hourly) success rate and use that to determine how to adjust schedules to increase the percentage of intervals in which ASA or service levels goals are met (NAQC, 2010). While ASA is one of the most popular call center metrics to measure, it can be difficult to interpret and it is important that call center managers have a full understanding of exactly what ASA is, how to measure it, what metrics impact ASA (such as individual staff schedule adherence), and how a high ASA can impact the call center, staff and callers overall.

LIFELINE SURVEY FINDINGS

AVERAGE SPEED OF ANSWER (ASA)

60%
(50) CENTERS
reported measuring
ASA

29 OF THESE REPORTED TARGETS RANGING FROM 5–130 SECONDS OR WITHIN 3-5 RINGS

Many call center managers look to ASA when considering how well a center is doing in the area of caller satisfaction. This, however, makes assumptions regarding the expectations of callers and the degree to which they are willing to wait for quality services. Caller satisfaction is a complex issue and the following elements, suggested by Geraghty (2014c), should be undertaken when assessing ASA and determining its impact on caller satisfaction:

- **Conduct an outlier analysis**

  The ASA can easily be skewed by outliers—particularly when a sample size is low. It is important to analyze data thoroughly to be sure you have a clear understanding of what your data means and how outliers affect it.

  With a large sample, over an extended period, outliers may have little impact and the ASA will appear within target range. Despite this, several callers could have waited unacceptably long periods of time for their call to be answered. Given the nature of crisis center work, knowing this, as well as whether there is a pattern to when this occurred, can be helpful in addressing need and ensuring effective service. Measuring over short periods of time allows these outliers to be seen more clearly.

- **Analyze abandonment rates**

  As the ASA only takes into consideration calls that were answered, **caller abandonment rates** for the same time period can provide a better understanding of how ASA impacts caller satisfaction. For example, if callers wait for 30 minutes in a queue and then give up, this is meaningful information as it will have a negative impact on caller satisfaction, however will not negatively impact the ASA.

  The ASA maintained within a crisis hotline can also impact center staff. Specifically, a slow ASA can result in poor caller satisfaction which, in turn, can impact crisis counselors. Callers who are frustrated by long wait times may be agitated or demanding once the call is answered, blaming counselors for the delayed response. This in turn can increase stress and eventually take an emotional toll.

SERVICE LEVEL VS. AVERAGE SPEED OF ANSWER

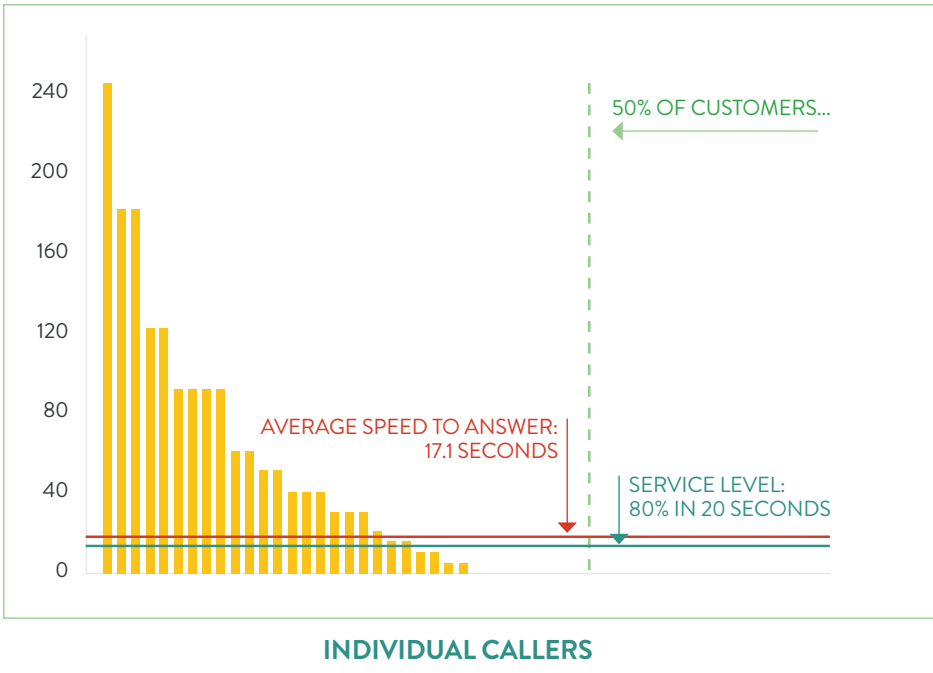
When someone tells you their average speed of answer is 17 seconds, what does that tell you about what their customers experienced?

a. Almost everyone waited about 17 seconds

b. 50% were answered within 17 seconds and 50% waited longer than 17 seconds

c. It doesn't tell you much about what customers as a whole experienced

Imagine the following: 100 people call the crisis line. The service level below is reflective of 80% of calls being answered in 20 seconds or less



Source: The Average Myth, ICMI, 2018

SPEED OF SERVICE: LONGEST DELAY IN QUEUE (SM-7)

Longest Delay in Queue (LDQ) refers to the longest time period that a caller in a queue waits before connecting with a crisis counselor or hanging up.

For crisis centers that queue callers when there is not an available crisis counselor to take a new incoming call, being able to track the longest delay in queue can be important in considering the overall center performance. LDQ is a measure of an extreme situation and is best used as a real time measure for staffing changes. Evaluating LDQ as a historical gauge of performance is not so useful given that it indicates "worst-case" experience of a caller and a range of isolated events can influence this over time.

LDQ is a call center measure and not an individual gauge of performance, but, like other speed of service measures, this statistic is affected by schedule adherence.

LIFELINE SURVEY FINDINGS

LONGEST DELAY IN QUEUE (ASA)

32%
(48) CENTERS
QUEUE CALLERS
when there is
NO AVAILABLE
COUNSELOR

OF THESE CENTERS ONLY 31 MEASURE LONGEST DELAY IN QUEUE

EFFICIENCY MEASURES (EM)

As mentioned, two elements that play a key role in service delivery are the ease with which potential users can access the service provided and the efficiency in which their needs are met. Efficiency Measures refer to overall **Contact Handling**, **Resource Utilization**, and **Cost Efficiency**.

CONTACT HANDLING: AVERAGE HANDLE TIME (EM-1)

Average Call Handling Time (AHT) refers to the average time a crisis counselor spends on a call, including talking, hold time after the call has started, and post-call work such as documentation. AHT can be viewed as a combination of the Average Talk Time and average After-Call Work Time.

While Lifeline calls should not be assigned a specific time limit (with exceptions for identified frequent callers who may have a management plan in place), it is important that the crisis center have some data on AHT in order to inform staffing plans and forecast call volume. As call volume patterns vary by time of day, it's a worthwhile exercise for centers to measure not only an overall AHT, but to also measure AHT by time of day. Are there difference between day and overnight AHT? Are there differences in weekday vs. weekend AHT? It is important to factor differences into center your staffing calculations.

Lifeline calls, due to their nature, will likely vary significantly in AHT. However, noting large variations by individual crisis counselors over time can be a useful tool in supervision and team management. Why is it that one counselor can take twice as many calls as another over the same time period? For Lifeline, speed and efficiency are not the primary goals and individuals that fall at either end of the AHT spectrum may be in need of additional training in how to balance quality and efficiency in a crisis call center environment.

For example do you have a crisis counselor who always has an AHT significantly shorter than the center average? Perhaps they could use some coaching on developing rapport, or engaging more collaboratively with the caller. On the other hand, do you have a crisis counselors who always has an AHT significantly longer than the crisis center average? That crisis counselor might benefit from coaching on wrapping up calls or skills related to creating action/safety plans with callers.

LIFELINE SURVEY FINDINGS

LONGEST DELAY IN QUEUE (ASA)

55% **(61) CENTERS** measure call handling time which ranges from **2-25 MINUTES**

(mean = 10.77, median = 10, mode = 8, SD = 5.38)

- This largely seems to **depend on type of call** with crisis calls taking longer
- **Only 19 centers report setting any target for call handle time**
- **Most centers assign about 10–15 mins for calls** with knowledge that crisis calls can take significantly longer. The time assigned to calls are largely based on experience. Outliers are often assessed for quality management

CONTACT HANDLING: AFTER-CALL WORK TIME (EM-2)

After-Call Work Time (ACW) is defined as the time spent "unavailable" after a call doing work related to that call (could include documentation time, making related outgoing calls, debriefing, and self-care).

One of the components of AHT that is considered to be the most variable and the most controllable is the after-call work (ACW) portion of the contact. Lifeline centers appear to vary in how they determine After-Call Work Time. Findings from the Metrics Survey showed that, in addition to documentation and outgoing calls, some centers also included debriefing and self-care in this measure (while others included these in their measure of "shrinkage"). Regardless of the activities included, the importance lies in establishing a definition and applying it consistently. ACW should be measured and evaluated over time to determine the appropriate amount of time needed to accomplish the necessary tasks. It should also be measured by type of call, as well as by individual, and by time of day. When understaffing results in high occupancy for staff and very little idle time between calls, ACW is typically higher because staff stay in the non-call state to catch their breath between calls.

ACW can sometimes be difficult to measure. In documenting ACW, some centers report having a crisis counselor enter specific codes into the system to indicate activity type (particularly on debriefing or required follow-up calls). Others have staff manually track and report on after-call activities for a defined period of time. Some centers rely completely on the available systems and are able to compare the total call time (as reported from the phone system) to the total time the call record was open, and then the next call taken. Whatever method used, having a good estimate of ACW is essential for effective staffing.

CONTACT HANDLING: ON HOLD TIME (EM-3)

On Hold Time is defined as the length of time caller placed on hold during a call. **No Lifeline caller should be placed on hold until a thorough assessment of risk has been undertaken.**

There is an important distinction between the time a caller might wait in a queue for their call to be answered initially (at a center with an ACD that does not present a busy signal to the Lifeline phone carrier when all agents are busy) and times during the actual conversation with the caller that a call might be placed on hold.

While a **Lifeline caller should not be placed on hold**, there may be occasions when a brief consultation with a supervisor is needed, or an emergency occurs on the part of the crisis counselor. In such situations, it is important to only do this when no other option exists, to explain clearly to the caller the reason for the hold, and to keep the hold time to the absolute minimum (30 seconds or less is a good guideline). Measuring on-hold time is typically a measure used as a gauge for individual counselors and can indicate insufficient knowledge or confidence in handling calls independently. There is no industry standard for hold time. Centers will want to review the percentage of calls individual crisis counselors put on hold, as well as the length of hold time in addressing any individual training needs for staff.

RESOURCE UTILIZATION: STAFF OCCUPANCY (EM-4)

Occupancy rate is the percentage of time that staff are performing work-related duties (i.e. talking with callers, performing after-call work like updating databases, sending emails, etc.) vs. the total time that they are logged in. An example of an occupancy rate equation is:

Occupancy rate = (total call handing and after-call work time—idle time) / total logged in time

Staff occupancy, is one of the most important numbers to measure related to efficient use of personnel. As seen in the example below (NAQC, 2010), doubling the call volume does not require twice the number of staff to meet the same service goal of 80% in 20 seconds. With 12 staff handling 8.33 hours workload, occupancy is only 69%. At double the call volume with 21 staff, twice the workload (16.67) is being handled without doubling the workforce, so each person is busier. In this case, occupancy has increased to 79%. As the volume of calls grows, increased economies of scale come into effect, meaning occupancy goes higher and higher.

CALLS PER HOUR	WORKLOAD HOURS	STAFF REQUIRED	STAFF OCCUPANCY (WORKLOAD / STAFF)
100	8.33	12	.69
200	16.67	21	.79
400	33.33	39	.85
800	66.67	74	.90
1600	133.33	142	.94

While a high occupancy rate, and busy staff, may seem desirable, maintaining service at 94% is not realistic, sustainable, or desirable. A high occupancy rate like this can negatively impact staff, leading to staff feeling over-

worked and stressed which in turn impacts call quality and job satisfaction. In addition, a low occupancy rate can also impact staff who can feel bored an unchallenged in an environment where there is little for them to do. **The challenge is to balance desired service levels with occupancy rates.** Although an 85%-90% range may be desirable, not every call center can reach that number. Small centers may not be able to achieve occupancies above 70% or 80%. Larger centers have the opposite problem. Their large group efficiencies may allow them to staff for the same service level and have occupancy numbers over 95%. In such cases, these providers have to add extra workers to bring occupancy down to a tolerable level.

A NOTE ON OCCUPANCY RATE

Occupancy rates can also vary by staff groupings. **When assessing, it can be good to look at how levels change with different staff members, days of the week, or over different shifts** (night shift vs. day shift, hard worker vs. unmotivated worker, shrinkage due to weekly meetings / staff training). The goal is to increase overall efficiencies for the team as a whole.

Some ACDs supply direct occupancy numbers, but others do not. If occupancy is not provided, it can be calculated by dividing workload hours by the number of agents on the phones.

RESOURCE UTILIZATION: STAFF SHRINKAGE (EM-5)

Staff shrinkage is commonly referred to as the percentage of paid time that staff are unavailable to answer calls. It is classified as "non-productive time" and can involve a range of "off-line" activities such as bathroom/meal breaks, team meetings, training, paid time off, general absenteeism, or unexplained time off the phones.

There is no industry average for staff shrinkage. Percentages can be in the 50% range for centers where staff undertake a variety of tasks in addition to answering the phones. On the other hand, in centers where the sole role of staff is to respond to incoming calls, shrinkage may be 20% or less (NAQC, 2010).

When calculating the number of crisis counselors needed to cover any given shift, it is important to remember the concept of shrinkage and factor it into your planning. Crisis centers in the Lifeline network and traditional contact centers have reported shrinkage rates of between 10% and 40%. This percentage can vary by day, but figuring out a base estimate for the types of activities that can take crisis counselors off-line during the day is important.

It is also important to apply the shrinkage calculation correctly. If your shrinkage rate is 30%, you would not take the number of staff you need for the hour and add 30% of that number—doing this would leave you short. To get the correct calculation, the formula you need is:

Staff Required = Staff Demand / (100 – Percent Shrinkage/100)

So for example if your Erlang C calculation shows that you need 30 crisis counselors to cover the forecasted calls, and your shrinkage rate is 25% the calculation would look like this:

Staff required = 30/(100 – 25/100) = 30/(1 – 0.25) = 30/0.75 = 40 staff

A NOTE ON STAFF SHRINKAGE

Crisis centers need to not only be aware of the concept of shrinkage, and factor it into staffing calculations but might need to consider adding additional time for debriefing or stress relief-related activities due to the nature of the work. (Debriefing may also be accounted for in your after-call work time depending on your center's practices, just be sure not to double count this time.)

Centers should also consider seasonal variation in shrinkage and plan accordingly—think about summer vacations and end of the year holidays if those are times your crisis counselors tend to ask for time off.

Shrinkage can also vary by time of day—does your center plan meetings or trainings mostly in the morning, afternoon or evening?

RESOURCE UTILIZATION: SCHEDULE EFFICIENCY (EM-6)

Schedule efficiency refers to the degree of overstaffing and understaffing that exists as a result of scheduling design.

Schedule efficiency is a central measure of productivity and a continuous miscalculation of need can significantly impact service levels and add unnecessary costs. Measuring schedule efficiency, like ASA, is best done in intervals—looking at how many specific intervals throughout the day were staffed at an acceptable level. Depending on the size of the center, the range of acceptable over/under staffing could range from small (+/- 1 or 2 staff) to large (+/-5 staff). Measuring in intervals allows for a more accurate assessment of need than a measure for the overall day—for example, an overstaffing of five people in one hour does not balance out an understaffing of five people in another hour. Rather than the "net zero" for those two hours that would be obtained by averaging, the important finding is that neither interval met the schedule efficiency goal.

RESOURCE UTILIZATION: SCHEDULE ADHERENCE (EM-7)

Schedule Adherence refers to how closely staff adhere to their schedule. Specifically, how much time a counselor is "working" compared to their paid time. This is a metric used to analyze staff performance.

Schedule adherence is measured by taking the total time a crisis counselor is available and dividing it by the time they are scheduled to work. It can take into account time spent on breaks or doing non-call related work. Most traditional commercial call centers that measure schedule adherence define a target level allowing for these types of activities.

Schedule adherence takes into consideration all of the little things that can add up to poor outcomes for callers. While some flexibility must be built in to any scheduling plan to allow for "other" work, ongoing lack of adherence to planned schedules can have a significant impact on services. Seemingly small activities add up–for example, late arrivals, chatting or reading emails before logging on, not returning on time after lunch, or frequently leaving phone system setting to "busy."

LIFELINE SURVEY FINDINGS

SCHEDULE ADHERENCE

34
CENTERS
reported measuring
SCHEDULE ADHERENCE

CENTERS USE TIME SHEETS / TIME CLOCKS OR OTHER REPORTS TO TRACK ABSENCES

The following may help improve Schedule Adherence at your center (adapted from www.talkdesk.com)

1. Optimizing staff training

Optimizing schedule adherence within the crisis center should start from day one—during training. One of the most important topics to cover during crisis counselor training sessions is the importance of adhering to their assigned schedule. Most contact center staff have no idea that they can negatively impact the center's service level, service quality, operational costs and revenue just by taking a break whenever they feel the need, sleeping in after the long weekend, and calling in sick five minutes before their shift starts. Crisis center leadership should take the time to explain this to them. Empowering them with this helpful information will make it more probable that they make more informed decisions that will have a measurable impact on schedule adherence in the crisis center.

2. Promoting an efficiency-centric culture

Once you hire the right team and train them optimally, promoting the right organizational culture is of utmost importance. Creating an organizational culture centered on using time and resources as efficiently as possible can go a long way to increasing adherence to schedule. If efficiency is a team value, something they strive for, is included in their evaluation and training, they will be more likely to complete non-call related tasks more quickly and will be more aware of how they spend their time while on the clock. This can have a major impact on schedule adherence and their overall productivity in the crisis center.

3. Providing coaching to crisis counselors who do not adhere to assigned schedules

In every contact center there is always that one crisis counselor who performs well but just isn't very adherent to their assigned schedule. That's where you come in. It is the responsibility of crisis center leadership to make sure that the counselor is aware that there is an issue, understands the impact it has on the crisis center, has a game plan about how to resolve the issue and is provided coaching and feedback based on their progress towards changing their behavior.

4. Giving recognition and rewards to crisis counselors who adhere to their schedules

It is not enough to just identify crisis counselors who are non-compliant with scheduling. In order to have a lasting impact, managers must also recognize those who are adherent and provide ensure that crisis counselors who are adherent stay adherent and those who have some room for improvement feel motivated to be more adherent. Providing recognition and rewards to the team members who are most adherent to their schedule is a great way to keep them adherent and motivate others to follow suit.

COST EFFICIENCY: COST PER CALL (EM-8)

Cost per call is a key performance indicator for most call center operations. Regardless of whether it is tracked as only a labor cost or a fully loaded cost (including all telecommunications, facilities and other service costs), the cost-per-call figure is used to evaluate how efficiently the agency's financial resources are being used and the center return on investment.

Centers in the Lifeline network vary tremendously in their structure, funding and staffing. A stand-alone crisis center might have a higher cost per call than a center that is part of a larger agency where admin costs are spread among different departments. Operational costs can vary widely from region to region (rent, utilities, telephony costs, average pay rate for staff, etc.). Is one crisis center providing better quality service than the other because it has a lower cost per call? Cost per call is not a measure of effectiveness when compared to other centers–its greatest usefulness is in a year by year comparison for a single organization (provided they measure it the same way each year).

See *Appendix D* for information on Hidden Center Costs that can influence cost per contact.

See *Appendix E* for ICMI Cost of Contact Worksheet—this provides terms and definitions to choose to include in cost calculations. Consistency is important.

SETTING GOALS FOR STAFF ADHERENCE TO SCHEDULE

What should your % goal be?

Depends on:

- **How closely you want to track exceptions (be careful of the "Big Brother" syndrome)**
- **How often supervisors alter agents' schedules in real-time**
- **How accurately you can track it**

It's more important to educate agents on the importance of adherence than to track every second of login time! Likely no other agency staff outside of a call center are monitored so closely throughout the day and too great a focus can lead to poor moral and high turnover.

LIFELINE SURVEY FINDINGS

FROM 2015

How do Lifeline Centers determine cost per call? While many centers calculate cost-per-call by dividing their annual budget by total calls/activities, others use different methods:

Calculating overhead...

"**Cost per activity is total operational expenses divided by total contacts.** Our expenses include labor (paid staff), employee taxes and benefits, telecommunication costs, marketing, office supplies, maintenance contracts on major systems and miscellaneous expenses. Our direct expenses do not include building related expenses such as rent, maintenance, or utilities. Our direct costs do not include support functions such as Human Resources, accounting, legal, public relations etc. These costs are absorbed by our agency and shared with other divisions within our large agency."

Volunteer costs....

"**We isolate crisis center support staff payroll from total payroll, direct helpline expenses and allocate office space etc.** We do not include a cost for volunteers, although their in-kind donation of time is valued at close to $1M per year. If we were paying for their time, the cost per call would double. We look at cost per call and cost per call answered."

Or only staff costs....

"We just include staff time, no other operating costs."

Units vs. per call calculations....

"**We track agency cost per unit of service.** Unit is 60 minutes of direct service which includes talking with caller, documenting call, any calls out on their behalf, and closing the record (clinical review)."

Phone hours as measurement....

"**We first calculate the total direct annual expense for each line that we answer by including all dedicated staff hours and fringe, telephony fees, and any additional required costs (specialized training, accreditation etc.).** The agencies indirect expenses (administration, fundraising, and general operating costs) are then allocated to each line we answer based on that lines per-centage of our total annual phone hours (phone hours = time spent talking to callers). The Lifeline had 2,036 phone hours and our total phone hours for the call center was 12, 470, meaning the Lifeline is allocated 16.33% of the agencies indirect expenses. The total cost identified for the line is then divided by the number of calls answered to obtain the cost-per-call."

OPTIMIZING CRISIS CENTER OPERATIONS

Every crisis center can improve operations in one way or another. While some centers may have detailed well thought out procedures, their emphasis on staff may be lacking, others may have high end technology but ineffective reporting mechanisms. There are always ways that crisis center performance can be improved.

The first step in improving call center operations involves pinpointing where the specific problem lies and then identifying ways to change. The key performance indicators identified in this document can be used to gauge your crisis center performance, assess problems, and identify potential solutions. When choosing performance indicators for your particular center, consider the following:

- **Which indicators should we monitor?**
  The indicators you can track depend on budget, staff scheduling, the type of indicator, and the availability of automated systems to capture data. But, some indicators—such as average handle time, average speed of answer, and abandonment rates—are routinely monitored in crisis centers and can be used as a starting point.

- **What should be considered in the broader picture?**
  Crisis center performance cannot be measured in isolation—indicators should also reflect the strategic direction of the entire organization.

The Marketplace Survey Improvement Guide, developed by the Centers for Medicare & Medicaid Services (CMS) with support from American Institutes for Research (AIR), is based on a consumer experience survey authorized by the Affordable Care Act (ACA) to measure consumer experience with the Health Insurance Marketplaces (American Institutes for Research (AIR), 2015). This guide suggests evaluating call center performance through the lens of three essential performance drivers: people, processes, and technology:

- **People:** Empowering call center agents can reduce staff turnover and increase customer focus
- **Processes:** Implementing well designed call center processes such as workflow management and call routing strengthens an organizations ability to deliver services effectively
- **Technology:** Implementing technology with a focus on the customer can enable organizations to quickly and efficiently respond to callers despite fluctuations in call volume

The following table provides some examples of ways to optimize performance based on these three areas:

PEOPLE

- Hire and retain the right staff
- Involve staff in designing and reviewing performance targets
- Use performance data to identify development needs but not to punish
- Diversify tasks
- Increase staff control by reducing the use of scripts and offering flexible schedules
- Structure monitoring to improve all systems and processes, not just performance of call agents. Avoid intensive performance monitoring

PROCESSES

- Forecast workload, manage staffing levels, and work to improve scheduling
- Establish procedures for adjusting triaging and processes during high-volume periods
- Use staffing techniques to meet peak period demands (e.g., part- or full-time, office or home based, permanent, or temporary staff, flexible hours)
- Route calls effectively
- Establish handoff procedures
- Document policies and procedures
- Identify and mitigate factors leading to increased call volume
- Provide training scripts for routine encounters
- Monitor call center performance regularly

TECHNOLOGY

- Manage staffing and workflow. For example, use automated workforce management
- Implement technology to route calls; For example, use an automated call distributor and interactive voice response system
- Capture, view, track, and integrate information; For example, document encounters and issues through caller relationship management systems and content document management
- Integrate technologies to provide call center agents with quick and accurate access to necessary information
- Explore what content can be placed online to have agents review with callers

Source: Air, 2015

MANAGING WORKFORCE

The type of staffing plan adopted by a crisis call center will significantly influence many of the metrics discussed in this paper. Optimizing staffing patterns can be one of the most impactful changes a center can undertake. It can also, initially, be one of the most disruptive. The rewards in operational efficiencies, however, are many.

Crisis hotlines can face a unique challenge in addressing staffing patterns. Centers, for example, may have staff schedules in place since operations involved a handful of staff providing basic coverage. As services grow and staff are added, systems of coverage are often maintained. Add to that the need to adapt to availability of volunteers and student interns and the staffing schedule can become a patchwork of coverage. Any manager charged with ensuring 24/7 coverage can attest to the challenges involved. But what if the system that has evolved no longer meets the call center need? Crisis center managers must explore alternative scheduling strategies that can maintain service levels, contain cost, and ultimately ensure call center survival.

In addition to basic shift changes, deciding on the right staffing involves call forecasting, understanding occupancy rates, after-call work time, and other metrics reviewed in this paper. It also involves thinking outside the box and utilizing strategies effective for general contact center operations—considering the pros and cons of having off-site staff—an option increasingly accessed throughout multiple industries for the financial benefits and flexibility telecommuting provides. Detailed approaches in this area are beyond the scope of this paper. For an excellent resource that provides a thorough and thoughtful review of essential elements to consider in the development of a cohesive staffing plan see NAQC (2010b).

ENHANCING SERVICE LEVELS

The following list of tips and techniques for enhancing service levels—from **TalkDesk** (www.talkdesk.com)—provides a useful summary of elements discussed in this document.

1. Optimize workforce management

Workforce management involves forecasting call volumes, scheduling the optimal number of staff to work at any given day or period of time throughout the day, creating schedules for each counselor, and making adjustments to the workforce as needed. This is a complex task that involves taking into account:

- Historical call volume trends
- Target service level
- The number of staff available (i.e. accounting for lateness, absenteeism, sick days, vacation)
- Upcoming campaigns or promotions, current events that can impact volume
- Time staff spend on calls and after-call work
- Time spent providing support on different channels (i.e. chat, email, phone, social media)
- Breaks, trainings and meetings

It is also essential that managers build in some flexibility when scheduling staff and anticipate that unplanned events will happen (i.e. counselors call in sick, have to leave early, take longer breaks than expected, require more training, etc.) and that call volumes will fluctuate as they are somewhat unpredictable.

When workforce management is not optimized, it can have a large impact on service level and, for many, funding requirements and an agency's bottom line. Understaffing results in fewer counselors fielding calls, longer wait times, and a decline in service level. Overstaffing results in more available staff, shorter wait times, and an increase in service level, however overstaffing is more costly and can negatively impact the budget. Thus, optimizing workforce management is the key to enhancing service level. [See *Appendix A* for some key steps in workforce management planning].

2. Optimize occupancy rates

Occupancy rates are typically inversely proportional to service level. High occupancy rates indicate that staff are less available to field calls, callers wait longer, and service level declines. Low occupancy rates indicate that staff are more available to field calls, calls are answered immediately, and service level increases.

Occupancy rates that are too high (i.e. over 90%) are indicative of an extreme workload for counselors. This typically results in increased counselor stress, decreased effectiveness, decreased satisfaction, and increased staff turnover. Occupancy rates that are too low are typically indicative of less than optimal workforce management and can increase costs, increase boredom, and decrease counselor satisfaction. Thus, management should strive to create a balance between optimizing occupancy rates and service level.

3. Increase schedule adherence

While workforce management is essential to ensuring that the optimal number of counselors are scheduled to answer calls, service level will not improve unless the staff adhere to their designated schedules. When staff take

longer on breaks, take their lunch at an unscheduled time, or spend time at their desk on non-work related tasks, fewer counselors will be available to field calls, and service level will decline.

It is essential that managers constantly monitor schedule adherence and make staffing adjustments accordingly. Management should also expect that staff will not completely adhere to their schedule 100% of the time and should take this into account when making staffing decisions. These changes will positively impact both occupancy rates and service level.

4. Improve call forecasting

Predicting the overall volume and the arrival patterns of calls throughout the day can be a challenging task. This involves analyzing historical ACD data (i.e. call volume, handle times, arrival patterns, etc.) as well as taking into account:

- Upcoming campaigns or PSAs
- Repeated events (e.g. suicide prevention month)
- News coverage (particularly around sudden loss)
- Weather patterns, natural disasters, power outages, major events
- Holidays, days of the week, time of the day

The more comprehensive your call forecasting, the more accurate your workforce management, and scheduling and service levels will improve.

Crisis centers can manage high call volume by developing processes for triaging calls based on level of need and using information technology systems on their local lines (such as IVRs) to quickly route callers to the group best equipped to handle the caller's concerns. In surges related to disaster response, it is important to ensure the capacity to share accurate and up-to-date information with staff quickly. In these situations, and when call volume is high, it is even more important to get callers the needed information as quickly as possible. It is helpful to develop flow diagrams, checklists, and resource lists as needed to efficiently manage crisis calls during a disaster response.

5. Reduce agent attrition

Staff attrition is the percentage of staff that leave their position (i.e. quit, fired or promoted) during a period of time. Decreasing attrition rates will ensure that your team remains proficient in managing calls, working with high risk callers, engaging support services, completing documentation, and providing follow-up—all of which will increase their overall efficiency and positive caller outcomes. Engaging employees effectively can reduce burnout and significantly impact attrition rates. Staff loss means time lost in training and retraining—particularly in assessment and intervention skills specific to Lifeline needs. To reduce burnout, agencies can take steps to counter the challenging work environment that is typical of a call center.

According to AIR (2015), one way to cultivate engagement is to increase employees' control over their work. For call centers, this might mean:

- Varying the work (e.g., cross-training agents to cover multiple call types)
- Allowing control over time (e.g., offering flexibility in scheduling and breaks or the opportunity to "bid" on specific shifts)

- Increasing control over how the work is carried out (e.g., reducing the required use of rigid scripts and increasing skills and trust to handle a variety of situations using best judgment)
- Involving agents in planning and decision-making (e.g., including agents in selection and review of performance metrics and goals)
- Providing a clear path for promotion (e.g., developing clear rating criteria and offering constructive performance feedback)

Another approach is to improve intrinsic motivation. Marketplaces can develop creative ways to help agents recognize the greater purpose of their work, such as the following examples:

- "Genius Hour." Set aside a routine time where agents are asked to leave the phones in order to come up with improvements in processes, new ways to handle workflow, or other ideas that could make the call center run more smoothly
- Showcase inspiration. Showcase caller cases through photos, asking agents to share their stories and describe their own positive experiences with callers. (AIR, 2015)

6. Enable call-backs

When waiting time is increasing and service level is declining, a quick, in the moment solution to increasing service level and caller satisfaction is to enable staff call-backs. Call center software that informs the caller of the anticipated wait time and provides them the option to opt out of waiting in the queue and receive a call-back from staff can dramatically improve service levels. When implementing this tool, it is important for managers to correctly classify the call (i.e. answered vs. abandoned) so their service level performance metric is accurate. **THIS OPTION DOES NOT APPLY TO LIFELINE CALLS, though centers that provide additional call center services with no associated risk could consider this option.**

7. Enhance first call resolution (FCR)

Enhancing FCR can significantly increase service level. When callers are routed to the most appropriate staff person to meet their needs and the responder resolves their issue without transferring them, not only are they more satisfied (and less likely to callback about the same issue) but the staff within the team will be more available to take additional calls. This is particularly relevant for crisis centers that also respond to their local 211 system.

8. Enhance caller satisfaction

Callers that are not satisfied with the service they receive are more likely to callback about the same issue, to ask to be transferred to an agent with more experience or to ask to speak with a supervisor. All of which can lead to an increase in average handle time as well as the volume of calls.

9. Provide multi-channel support

Offering support via email, chat, online resources and FAQ can reduce the volume of inbound calls to your call center. When offering multi-channel support, it is important to respond to support request via chat and email in a timely manner.

10. Enhance staff competency

Staff competency has a direct effect on service level. Competent staff are more likely to resolve the caller's issue quickly and comprehensively, increase caller satisfaction, decrease the likelihood that the caller will callback and

decrease the likelihood that the call will transferred or escalated to a manager. Additionally, competent staff are more efficient and accurate with data entry, thus reducing after-call work time, increasing their availability to field calls and enhancing FCR when the caller calls back about another issue (as the information in the system will be up-to-date for the next counselor).

11. Employ on-call counselors

No matter how comprehensive your workforce management strategy, there is inherent variability in call volume and schedule adherence within a call center. Managers should prepare for this by employing a workforce of on-call staff, or cross-training staff within the center to field different types of calls. Hiring an at-home workforce of on-call call center staff can be a very cost-effective solution to this problem.

12. Accurately measure and track service level

Only when service level is carefully defined and accurate measured is it useful. It is important to analyze how your team measures service level and make changes when necessary. The key to making data-driven decisions to enhance service level is to track changes in service level, both in the moment and over time. Having call center software that allows you to customize your service level time threshold, track service level over discrete time periods that are most meaningful to your company and monitor changes in service level in real-time is essential to this process.

13. Educate your entire team about service level

It is essential that you train your team about what a service level is, how it is defined and calculated, ways in which they can meet objectives, what happens when the center fails to meet their service level objectives (i.e. recruit more staff; ask staff to stagger their breaks, etc.), and what can happen when they meet their service level objectives (i.e. bonus, leave early, longer lunch break, etc.). By doing so you are increasing the likelihood that they will make in the moment decisions that will enhance service level and may also lead to an increase in schedule adherence as they will develop more insight into workforce management.

14. Equip staff with access to a dashboard

Once staff understand the importance of reducing average speed of answer in the call center and have been trained to do so, they must be equipped with the tools they need to execute. If your center has an ACD, make sure that staff have access to an agent dashboard that displays the ASA in real-time as well as in their historical metrics. This will allow them to have a true understanding of this metric and will empower them to make data-driven decisions so their team's ASA remains in an acceptable range.

15. Tie feedback to service level

If you measure counselor or team performance based on service levels, giving them concrete evidence to support your feedback is extremely effective in eliciting change in their behavior or when offering a reward. Staff that know what is expected of them (i.e. service level objectives are clear), who can make changes in their approach to answering calls based on readily available service level data and who's performance evaluation is tied to concrete data (such as service level) will be better equipped to make strategic changes that will positively influence service level for their department and your center as a whole.

16. Enhance self-service options

Allowing callers to help themselves can significantly increase service levels as it will reduce call volume and free up more staff to answer calls quicker. As mentioned earlier in this document, while it is not allowable for Lifeline centers to use an IVR for Lifeline calls, using an IVR for local lines can help increase caller satisfaction and staff efficiencies. You can upload pre-recorded messages that may answer some of the most common (and simple) questions. Another strategy is to enhance your FAQ, resource library, and user-friendliness of your website. When your callers can easily find the answers to their questions online, they will be less likely to call. Taken together, these two methods will significantly reduce call volume and free up staff to field more important calls, thereby increasing service level.

17. Optimize call center software

Optimizing your call center software can go a long way in increasing service level. By implementing software that has:

1. A comprehensive ACD to accurately measure call volume, handle time, calls received and calls abandoned
2. An effective IVR to partially automate the support process and decrease call volume
3. Skills-based routing to increase caller satisfaction and enhance FCR
4. Real-time and historical reporting so staff and managers can keep track of changes in service level
5. An easy to use interface so staff have the most relevant information at their fingertips
6. Integrated tools so staff don't have to waste time updating the same information into different business tools
7. Browser-based technology so on-call staff can work from home

APPENDIX A: WORKFORCE MANAGEMENT

FIVE STEPS IN WORKFORCE MANAGEMENT PLANNING

STEP 1—Forecast call volume (or "traffic load") for 15- to 30-minute intervals

- Access detailed historical call data, including the number of calls and handle times
- Account for correlating events that affect call volume, such as holidays, deadlines, and marketing efforts
- Account for staff absences, which impact the call center's ability to respond to calls
- Use automated workforce management system tools that combine these historical data with correlating events to establish trends and more accurately predict future call volume

STEP 2—Determine staffing levels for each interval (number and types of agents)

- Calculate the number of staff needed. Calculators use the number of calls coming in per minute, the average handle time, and the average wait time. Tools such as Erlang calculators can be accessed online. See www.erlang.com/calculator/ and www.gerkoole.com/CCO/ (See also *Appendix B*)
- Match agent skills and availability with each 15–30 minute interval

Source: AIR, 2015

- Plan for available space and technology infrastructure
- Plan for backup, if needed
- Consider available budget

STEP 3—Schedule call center agents

- Use automated systems to match call center agents based on their preferences

STEP 4—Monitor and manage performance in real time, as needs fluctuate

- During slow times, reassign agents to other tasks, such as handling email communication
- Supplement agents who are absent or when there are unpredicted high call volumes

STEP 5—Evaluate strategy by asking questions such as:

- Is software functionality adequate?
- Is the software being used appropriately?
- Were shifts covered?
- Were performance measures met?
- Are there any interesting trends in call volume data?
- Which agents excelled in both efficiency and service quality? Can their actions be duplicated?
- What new and re-occurring issues came up for agents?
- Is additional information or agent training needed?

THE IMPORTANCE OF ACCURATE FORECASTING

Call forecasting is core component of call center operations. Developing a forecast to determine scheduling can only go so far, however, if an ongoing assessment of accuracy is neglected. Accurate forecasting–defined here as the variance (%) between the contacts forecasted and the contacts actually received—is a critical objective in all call center environments. In calculations this translates to: (Forecasted contacts – Actual contacts) / Number actual contacts.

Poor forecasting and underestimating call volume leads to understaffing, which in turn, leads to long wait times, frustrated callers, staff burned-out, and high phone costs (due not only to the long hold times, but also to the longer call times that might result from caller complaints about hold times). Overestimating call volume leads to overstaffing, wasted resources, and under stimulated staff who have too much idle time.

Forecasting accuracy should not be reported as a summary statistic across a day, week or month—this can be misleading. Instead, accuracy should be reviewed for each reporting interval, typically half-hours. Consider Table 2, on the next page, how well do you think staff performed?

Source: ICMI, 2017b

TABLE 2:

FORECAST vs. ACTUAL CALL VOLUME

INTERVAL	FORECAST	ACTUAL	DIFF.	%
8:30–9	342	291	51	17.5%
9–9:30	399	343	56	16.3%
9:30–10	461	499	-38	-7.6%
10–10:30	511	582	-71	-12.2%
10:30–11	576	649	-73	-11.2%
11–11:30	605	578	27	4.7%
11:30–12	572	513	59	11.5%
12–12:30	505	412	93	22.6%
12:30–1	456	540	-84	-15.6%
TOTAL	**4427**	**4407**	**20**	**0.5%**

The summary score in Table 2 indicates an overall forecast with less than 1% variance. A positive outcome in any call center. It is not, however, an accurate representation of staff workload and center efficiency. Broken down by 30-minute intervals, we can see that between 12–12:30pm for example, staff were likely overloaded with calls while at 12:30–1pm far fewer calls came in than forecast and staff were likely idle.

Source: ICMI, 2017b

APPENDIX B: ERLANG B AND ERLANG C

What exactly is the Erlang B and the Erlang C and how can it help me?

One of the clearest descriptions of the Erlang B and Erlang C concepts comes from an introductory statement written by Angus (2001, July-August). The following is a summary of that short document (you can find the full at www.tarrani.net/linda/ErlangBandC.pdf). In this summary, Angus first gives the example:

"Hey, it's simple arithmetic! We get 3,200 calls a day. That's 400 calls an hour. Each call lasts three minutes, so each person can handle 20 calls an hour. So we'll need 20 incoming lines and 20 people to answer the phones."

Sounds right? While that logic sounds reasonable, it just doesn't work. Why? Because calls bunch up at different times throughout the day, they overlap or there are none at all, they take varying amounts of time to manage, and certainly do not follow an even distribution pattern that would make calculating center needs easy. In addition to this, there is the human factor—the staff involved in taking the calls. No one can take 20 calls an hour with no break and continue like that throughout their shift. What about after-call worktime, consultations, call backs. All of these factors must be built in to your model.

Accordingly, the only approach that works uses mathematical formulas associated with "traffic engineering." Some of these formulas can be straightforward, others extremely complicated—but luckily now there are online programs available that can do the work for us. Plug in the numbers and your staffing needs emerge.

Even with online assistance, it is important to understand the basic requirements and concepts.

ERLANG

The basic unit of telecom traffic intensity. One erlang is usually defined as 60 minutes of traffic. If you receive 300 two-minute calls in an hour, then you received 600 minutes, or 10 erlangs, of traffic in that hour.

Minutes of traffic in the hour = number of calls (30) x duration (5mins) = 150
Hours of traffic in the hour = 150 / 60 = 2.5
Traffic figure = 2.5 Erlangs

BUSY HOUR

Because "calls bunch up," all traffic planning has to focus on peak periods. The typical approach is to take the busiest hour of each day for five or 10 days during the busiest time of year, then calculate the average of those hours' traffic load. That average is then used to determine the maximum number of trunks or people needed.

GRADE OF SERVICE

This refers to the percentage wait time—for example, knowing there is a 2% probability of having to wait to speak to a human—getting a busy signal.

PROBABILITY FORMULAS

There are many traffic formulas, appropriate to many different situations, but two of them, both developed by A.K. Erlang, cover the most common business telecom requirements: Erlang B and Erlang C.

ERLANG B

This is the formula to use when a blocked call is really blocked—for example, when somebody calls your phone number and gets a busy signal or tries to access a tie trunk and finds it in use. It is built around three variables: Servers, Traffic, and Grade of Service. If you know any two of those, the formula will calculate the third one.

The Erlang B essentially answers the question: **How many lines do I need?** How many trunks are needed to carry your toll-free calls, how many tie trunks between two offices, how many ports into your voice mail system, or some similar question. Erlang B handles that relatively easily, in four steps:

1. **Collect traffic data**
   You need to know how much traffic will try to use the trunk group, each hour, for five or 10 business days. You may be able to use phone bills, call detail reports, carrier traffic studies, or even manual counts—or you may just have to make educated guesses. The objective is to produce an hour-by-hour spreadsheet, showing the number of minutes of traffic in each hour. Divide those numbers by 60 to get Erlangs per hour. Bear in mind that the traffic on your trunks may be greater than actual conversation time—you must allow for dialing time on outgoing calls, and for ringing time on incoming calls, for example.
2. **Determine the Average Busy Hour**
   Select the busiest hour of each business day, total the traffic, and then divide by the number of days.
3. **Choose a target Grade of Service**
   Choose a target wait time.

4. **Use Erlang B**

   Calculate the number of trunks you need to carry that amount of traffic with your target Grade of Service. At this point, you need to decide whether the answer is acceptable. Usually, that means deciding whether you can afford the number or trunks or ports required. If not, try reducing the number of trunks and see what the effect is on the Grade of Service. You may discover that the difference is negligible—or you may decide that you have to get a budget increase or find some way to reduce the amount of traffic.

Average call duration (minutes):	15	Calculate
Number of calls in peak hour:	8	*Busy probability:*
Number of lines available:	6	1 %

www.shamrock-software.eu/erlang.htm

ERLANG C

This is the most common call center formula—used to calculate **how long callers will have to wait** before being connected to a human or **how many counselors you would need to answer your calls** within a certain acceptable wait time. It is calculated based on basic information, like the expected number of calls and how many call center employees are available at a center. To calculate the Erlang C:

Reynolds (2012) provides a detailed and accessible description of how to use the Erlang C for **center staffing**.

1. **Obtain General Call Forecast**

   Look at historical data and trends, as well as seasonal patterns, to arrive at a monthly estimate, then using day of the week and hour of the day to break down the numbers into hourly and half-hourly forecasts (see *Reynolds article of Forecasting Fundamentals* for more information).

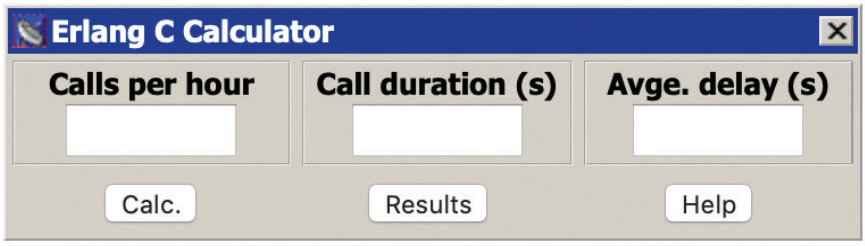
2. **Obtain Average Handle Time (AHT)**

   This is made up of the actual call time plus the wrap up (after-call time) associated with a call.

3. **Decide on an acceptable Speed of Answer**

   What delay can be tolerated in the queue, what does your funder require?

   The Erlang C is a complicated formula but, thankfully, no one expects you to use it. If you have a workforce management tool this calculation will be built in. If you don't, there are many free Erlang C calculators online—one example can be found here: www.erlang.com/calculator/erlc/.



This calculator can tell you how many counselors you need during any given hour. To calculate this, you need to know your general incoming call volume, the average handling time of those calls, and the average delay you will tolerate in answering all your calls.

Below are sample results (using the Erlang C calculator) that demonstrate how staffing needs can change given same number of incoming calls. In the chart, call lengths of both 30 minutes (1800 secs) and 20 mins (1200 secs) are presented with varying seconds of delay. That is, if calls typically take 30 minutes, and you can tolerate a delay of 60 seconds before answering, you will need 20 staff to answer your 30 call an hour volume. If you can only tolerate a 15-second wait, you will need 23.

CALLS PER HOUR	CALL DURATION (SECONDS)	AVERAGE DELAY (SECONDS)	STAFF REQUIRED
30	1800	15	23
30	1800	30	22
30	1800	60	20
30	1200	15	16
30	1200	30	15
30	1200	60	14

APPENDIX C: STAFFING PATTERNS AND SERVICE LEVELS

THE POWER OF ONE*

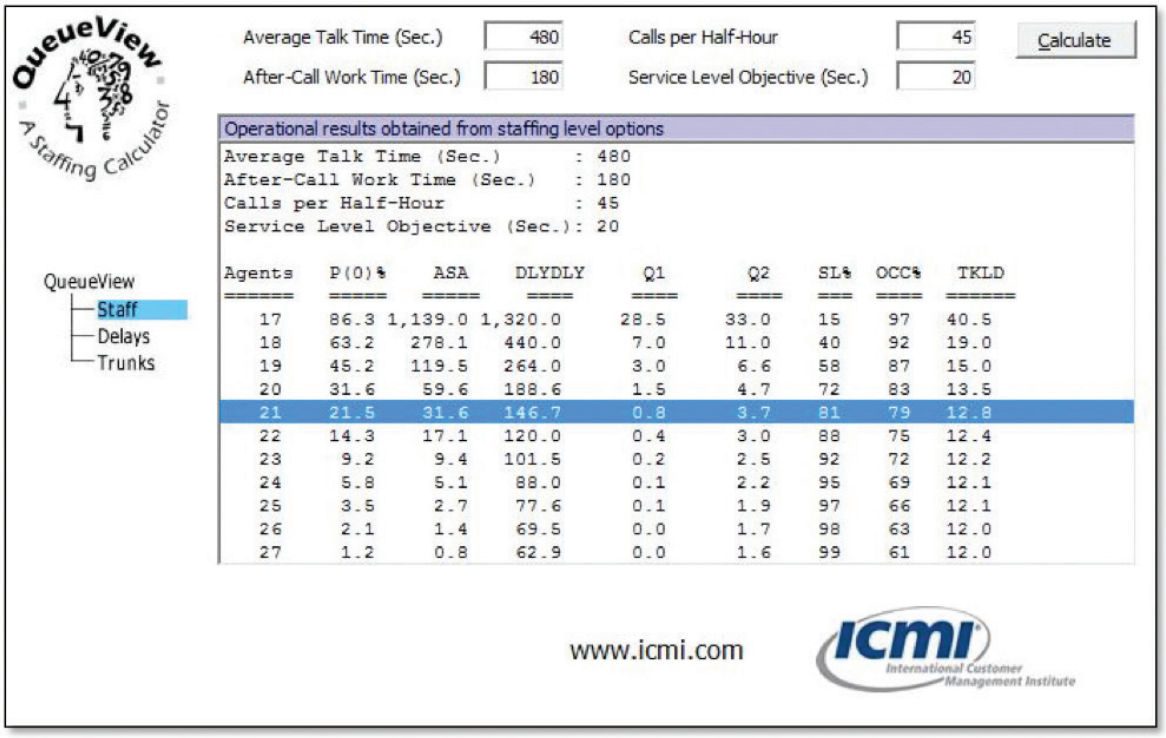
Each agent within a call center plays a significant role in both the caller experience and call center success. In this context, the "power of one" refers to the impact of staff on call center queues and caller wait times. Call center operations, no matter the industry, are dynamic. Calls arrive randomly, they "bunch up," and individual staff affect service levels far more than they may realize.

Using QueueView from ICMI (which uses the Erlang C formula), staffing requirements were derived from the following inputs: 45 calls that have an average of 480 seconds (or 8 mins) talk time and 180 seconds (or three mins) after-call work time.

P (0)%—Probability of delay greater than 0 secs—or the probability of not getting an immediate answer
ASA—Average speed of answer
DLYDLY—Average delay only of these calls that are delayed
Q1—Average number of calls in queue at any time, incl. when there is no queue
Q2—Average number of calls in queue when all agents are busy, i.e. when there actually is a queue
SL%—Percentage of calls that should be answered in the number of seconds specified
OCC%—Percentage of time agents either in Talk or After-Call Work mode (and not in Available waiting for the next call)
TKLD—Erlangs (hours) of trunk traffic, calculated as (Talk Time + ASA) x Number of Calls in one hour

*Adapted from Cleveland, 2017

STAFFING TRADEOFFS

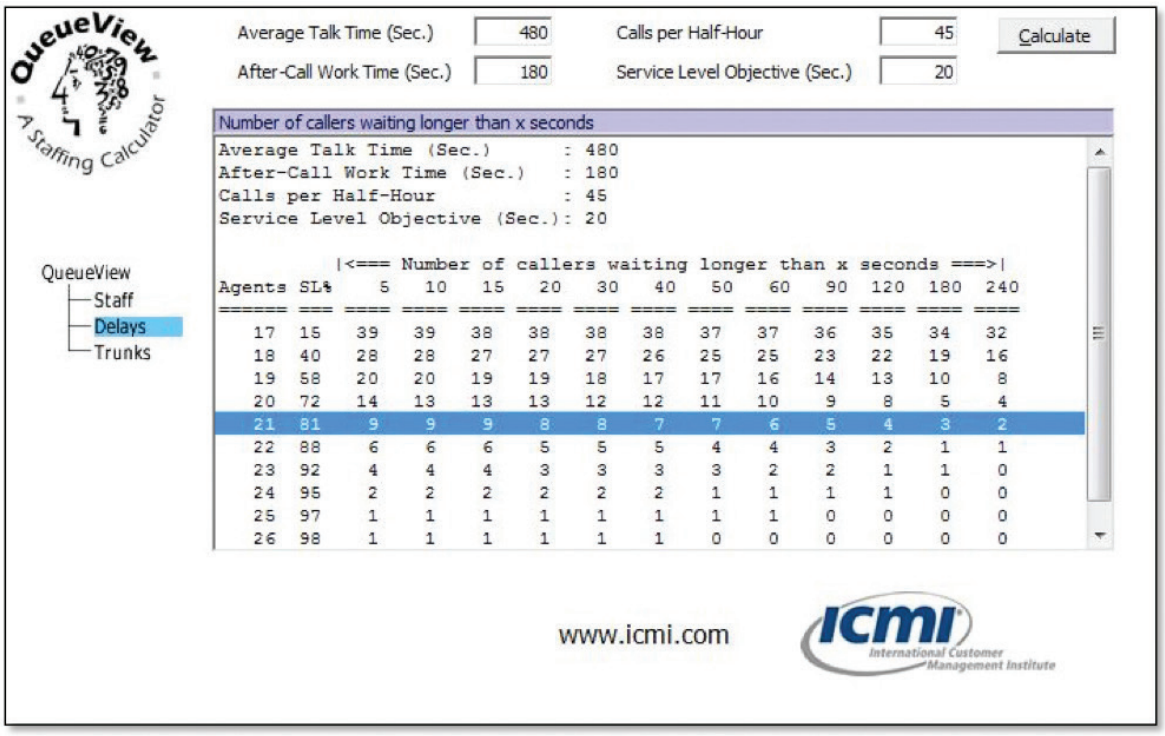


As you can see, 17 agents will provide a service level of 15 percent in 20 seconds. With 18 agents, things improve dramatically, with service level jumping to 40 percent and ASA from 1,139 secs (19 mins) to 278.1 secs (4.6 mins). Adding one more person yields another vast improvement. In fact, adding only four or five people takes service level from really bad to levels that are a lot more acceptable to customers. It is also important to note occupancy rates. With 17 staff, occupancy is at 97%—a level that is largely unsustainable and which will lead very quickly to staff burnout and turnover—a fact that itself results in lost calls for employee training. **As indicated, 21 staff achieves close to target service levels at a more reasonable occupancy rate with an average speed of answer at 31.6 seconds.**

But what happens to those calls that don't get answered in Y seconds? Programs that also calculate delay can be very useful in answering this question. (The following is also part of ICMI's QueueView program.)

Source: ICMI Queue View, Staffing calculator based on Erlang C

CALLER DELAY



As you can see, using the same input variables, 21 agents will result in a service level of 81 percent of calls answered in 20 seconds. But here we get additional insight into what happens to individual callers (the callers experience) at different staffing levels. With 21 agents handling calls, nine callers are waiting 15 seconds or longer over the desired service level. Then we answer one of them in the next five seconds, so eight are still waiting 20 seconds or longer than desired. Then we answer another two, so only six are waiting 60 seconds or longer, and so forth. There are still two people waiting 240 seconds or more. You can also see that with additional staff (two), no one waits more than four minutes. It is very different, however, if there are only 17 agents handling calls—32 callers (71% of incoming calls) are waiting four minutes or longer. Even adding one additional agent reduces that by half–now 16 callers (35.5% of incoming calls) wait that long.

The relationship between staff and service level is not linear– it's exponential.

The following steps are recommended to reinforce this principle and the importance of being in the right places at the right times:

- Educate staff on how much impact they have on the queue
- Establish concrete service level and response time objectives that are understood by all
- Develop reasonable expectations for adherence to schedule and a culture that understands and supports it
- Educate all on the core steps involved in forecasting and resource planning so that they know how schedules are produced, and where they come from
- Develop appropriate priorities for the full range of tasks that your agents handle and guidelines for how to respond to evolving conditions

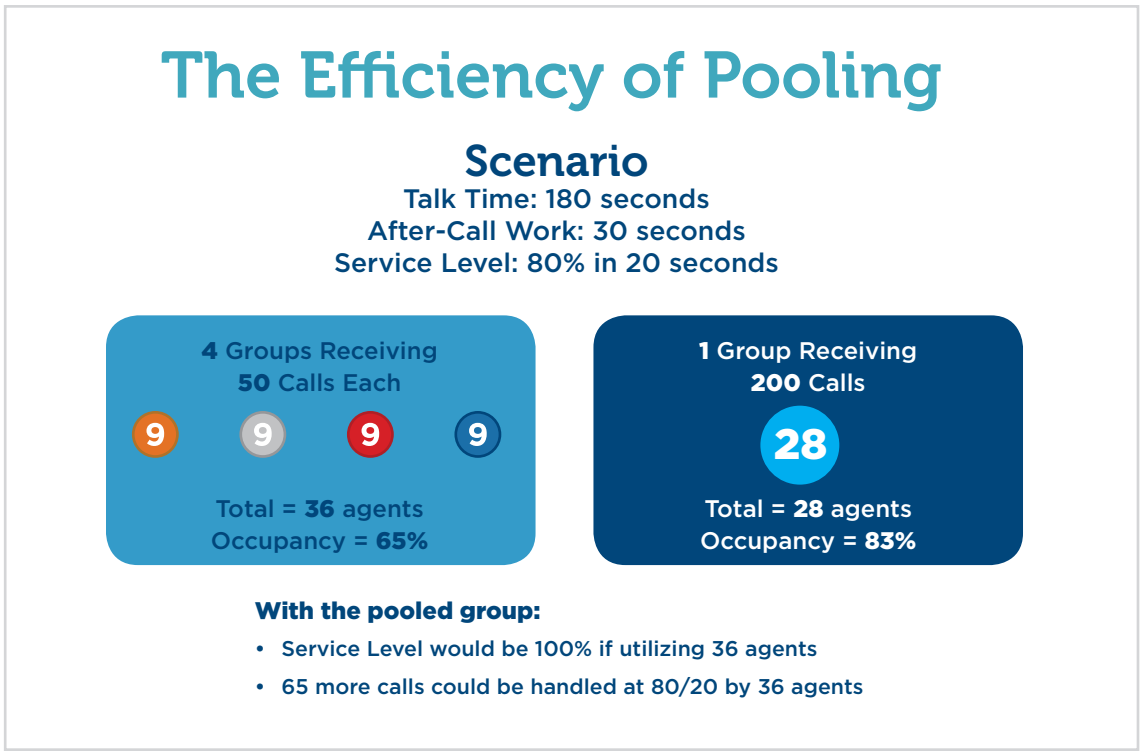
Source: ICMI Queue View, Staffing calculator based on Erlang C

THE POWER OF POOLING

Small centers are often far more challenging to manage than large environments. Workload tends to be proportionally more volatile, with fewer agents to absorb shifts in caller. And each agent in a small center has an outsized impact on service level—if one or two are unexpectedly absent or away from their desks, things spiral quickly.

Cleveland (2018) describes the "powerful pooling principle," and its impact on small centers: consolidation of resources will result in improved workload-carrying efficiency. Conversely, creating small specialized groups will yield reduced workload-carrying efficiency. Figure 1 below illustrates this:

FIGURE 1:
THE EFFICIENCY OF POOLING



As illustrated, one group of 28 agents can do the work of four groups of nine agents (36 total), all other things equal. In other words, if you take small, specialized agent groups, cross-train them and put them into combined groups, you'll have a more efficient environment. (If you're really small, e.g., you have just a handful of agents, go with a combined group from the get-go and do everything possible to make sure they can cover for each other.)

Source: Cleveland, 2018

APPENDIX D: HIDDEN CENTER COSTS

THE COST OF WAIT TIME

At low service levels, the impact of one or two staff can be highly significant. In addition, the cost of may not be as much as you think. In adding staff, the cost should be balanced against the cost of the phone bill (while callers remain on hold) and the programmatic impact of low service levels. The following example (from QueueView) illustrates this. With 30 staff, the total cost per half-hour interval is $912 with a very low service level (23.5%). With this low answer rate, many people remain on hold causing the phone costs to escalate. Adding two more staff significantly increases service levels (now 61.3%) with operating costs actually lowered. With four more staff service levels are high with only a slight increase in costs.

AVERAGE TALK TIME (SEC)	180	**A: COST PER HOUR FOR AGENTS**	$25
AFTER-CALL WORK TIME (SEC)	30	**B: COSTS PER HOUR TOLL-FREE SERVICE**	$3
CALLS PER HALF-HOUR	250		

Source: ICMI, 2017a

TABLE 3:
THE COST OF WAIT TIME*

AGENTS	LABOR COST	ASA	SL	TKLD	TELECOM COSTS	TOTAL
30 (x A)	$750	208.7	23.5%	54.0 (x B)	$162.00	$912.00
31	$775	74.7	45.2%	35.4	$106.20	$881.20
32	$800	37.6	61.3%	30.2	$90.60	$890.60
33	$825	21.3	73.0%	28.0	$84.00	$909.00
34	$850	12.7	81.5%	26.8	$80.40	$930.40
35	$875	7.8	87.5%	26.1	$78.30	$953.30
36	$900	4.9	91.7%	25.7	$77.10	$977.10
37	$925	3.1	94.6%	25.4	$76.20	$1,001.20
38	$950	1.9	95.5%	25.3	$75.90	$1,025.90
39	$975	1.2	97.8%	25.2	$75.60	$1,050.60
40	$1,000	0.7	98.6%	25.1	$75.30	$1,075.30
41	$1,025	0.5	99.2%	25.1	$75.30	$1,100.30
42	$1,050	0.3	99.5%	25.0	$75.00	$1,125.00

THE REAL COST OF STAFF ATTRITION**

Keeping staff engaged in what is often a high stress environment can be challenging and it is often difficult to quantify what staff disengagement ultimately does to call center operations and the agency bottom line. The following should be taken into account when calculating the concrete cost for every staff member that leaves a position:

Separation Costs

For every person that leaves a position, other staff must take time out of their own work to process the termination. This involves paperwork processing from HR—closing out employee files and building access; IT revoke access to internal systems; and Payroll processing final payments and closing out files.

Sourcing Costs

The next step involves replacement. If the agency uses a recruiter, that fee must be taken into account (possibly fixed fee or salary percentage). If the agency sources internally, through advertising, then time spent reviewing applications, conducting interviews, undertaking background checks, developing HR packet etc. must all be considered. Each method has associated costs and these should all be included in an assessment of staff replacement costs (including all employees' salaried time that is spent on this).

* Source: ICMI, 2017a
** Adapted from: Davis, 2017

Hiring Costs

Once hired, each individual needs to be added to the HR system, put on payroll, given an agency ID, and given security access. This includes any reporting to the state or employment bureaus and anything else that needs to be done to get each person ready to begin his or her first day of training. The costs associated with all this must be added to the running tally (so far we have separation, sourcing, and now hiring/processing the hires).

Training Costs

Perhaps more than any other, the time spent training new staff is probably one of the biggest costs associated with employee attrition. First, there is the overall training period—likely 3-4 weeks. What does it cost to pay the instructors? This includes the cost for employees who are taken away from other productive work and their benefits and payroll taxes. Following is the price of software and materials. Reproducing training materials can be costly and should be accounted for, as should any costs associated with adding users to center software systems. All elements associated with conducting a training class should be considered—then assess how many classes you hold annually and multiply your total cost per class by the number of classes to get the annual cost.

Experience Costs

Meanwhile, all new hires receive a salary through the entire training process. Once trained and ready to take calls, they are usually placed in a provisional status—actively taking calls at a diminished rate with a lot of supervision and feedback. This can last for several weeks and several additional costs must be accounted for:

- First, any teaching or support provided during the provisional period by salaried employees
- Second, wasted salary due to the fact that new staff receive pay, but can be highly unproductive and answer very few calls
- Third, the cost to cover for this loss by any overtime or hourly staff brought in to answer calls during this time

Most importantly, staff attrition means a less tenured workforce. Which directly leads to longer calls, slower call resolution, more mistakes, increased overall support and supervision and likely lower caller satisfaction.

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