An Evaluation of the Veterans Crisis Line (VCL): Immediate Outcomes, Healthcare Utilization, and Risk for Suicidal Behavior

Peter C. Britton, et. al.

VCL Evaluation Team

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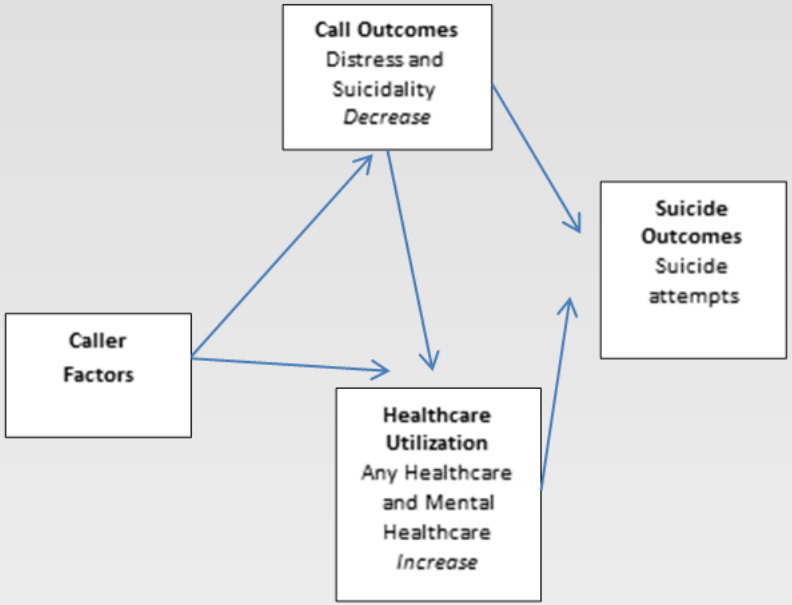
Preliminary Model for Research Plan



Data Extraction

- Extracted 2,700 core calls from 12/1/2018 to 11/30/2019 from callers who provided identifying information (SSN) and could be linked with VA administrative records.

- Core calls included Veteran calls rated as acute risk and requiring immediate care; in crisis requiring distress reduction; routine requiring education and information, and 3rd party callers calling on behalf of Veterans.

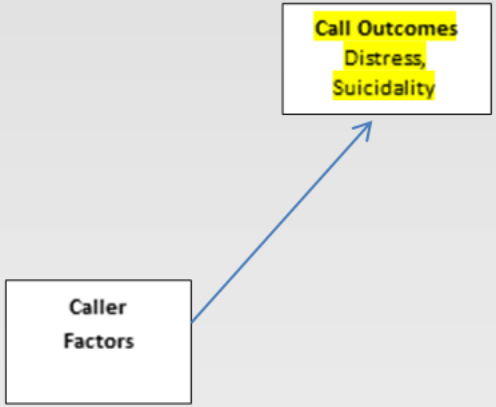
- Of the 1730 calls that the coders attempted to access, 647 (37.40%) were accurately coded as core calls from Veterans and accessible to coders. All analyses included 647 calls or fewer depending on the number with complete data.

Sample

- 60% Routine (information), 18% Crisis (distress), 21% Acute (at immediate risk)
- 82% Male, 16% Female, 2% Undetermined
- Age mean (SD) = 50.25 (16.00)
- Sub-analyses suggested this was representative of all Veteran core callers that provided identifying information.

Aim 1

Examine the impact of VCL use on immediate call outcomes including caller distress and suicidality using call recordings.



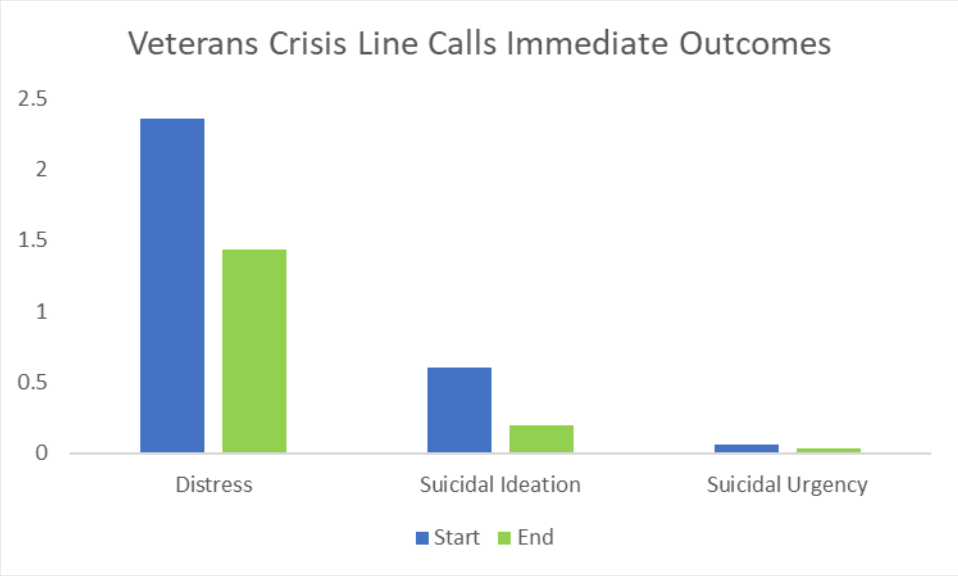
Distress/Suicidal Ideation/Urgency and Reliability

•Recordings rated for: 1) *distress* (e.g., anger/irritability, sadness/tearfulness, etc.; range 0-12), 2) *suicidal ideation* (e.g., death ideation, suicidal ideation, plan, etc.; range 0-5), 3) *suicidal urgency* (i.e., threats to harm/kill self, etc.; range 0-5) (King, et. al., 2003)

• Distress Rated on 3-point scale (0 = none, 1 = some, 2 = marked); Suicidal ideation and urgency on 2-point scale (0 = none, 1 = some)

• Coded first and last 5 mins, or first and last 2 mins if call less than 10 min

Round 1 and 2 Reliabilities			
	Round 1 Rater 1 and 2 ICC Total (N = 50)	Round 2 Rater 1, 3, and4 ICC Total (N = 50)	Cicchetti Rating
Mental State/Distress	0.72	0.71	Good
Suicidal Ideation	0.82	0.87	Excellent
Suicidal Urgency	0.44	0.50	Fair


Veterans Crisis Line Calls Immediate Outcomes
2.5
2
1.5
1
0.5
0
Distress
Suicidal Ideation
Suicidal Urgency
Start
End

Immediate Outcomes

		Distress		Suicidal Ideation		Suicidal Urgency		
			Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	F
Pre post change								
Type								
Routine	391 (60.43)							
Crisis	119 (18.39)							
Acute								
Sex								
Male	531 (82.07)							
Unknown	13 (2.01)							
Age	50.25 (16.00)			8.23[b]		0.78		0.52
Coder				3.82[b]		1.77		1.51

*** A cumulative logit function was used and calculates the odds of having a lower outcome score.**

[a] p 0.05

[b] p < 0.01

[c] p < 0.001

[d] p < 0.0001

Aim 1 Conclusions

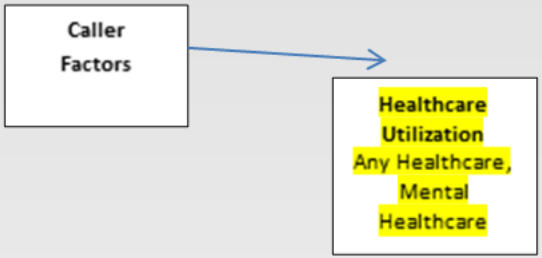
- Veteran callers exhibited less distress and suicidal ideation at the end of the call than they did at the beginning of the call.

- Veteran callers also exhibited less suicidal urgency, but reliability was only fair, likely due to low urgency in the reliability sample.

- Sample was representative of all Veteran core callers that provided identifying information over the time period.

Aim 2

Examine the impact of VCL use on post-call healthcare utilization patterns using VHA medical records.



Treatment Contact and Engagement

- **Data Sources** Data were extracted from VCL Medora Database and Corporate Data Warehouse (CDW)
- **Time frames** were the month (30-days) preceding and following the call. It was unclear whether contact beyond 30 days would have anything to do with the VCL call or motivation associated with calling it.
- **Treatment Contact** Defined as one contact with a healthcare provider, via CDW.
- **Treatment Engagement** Defined as the number of days of contact allowing for multiple modalities (e.g., inpatient hospitalization, telehealth) to be examined using the same metric, via CDW.
- **Healthcare** Defined according to Northeast Program Evaluation Center (NEPEC) definitions.
- **Mental Healthcare** Defined according to NEPEC definitions.

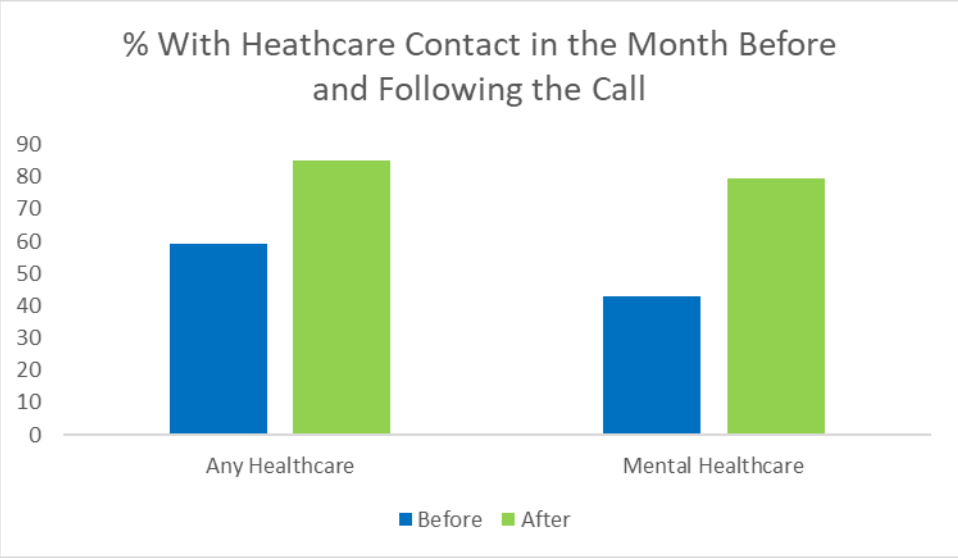
Pre-Post Results

- **Contact Healthcare** Pre 59.27% (355/599) vs. Post 84.97% (509/599)

- **Contact Mental Healthcare** Pre 43.07% (258/599) vs. 79.47% (476/599)

- **Engagement Healthcare** Pre mean (SD) of 2.55 (4.17) days of contact vs. 4.82 (5.54) days of contact

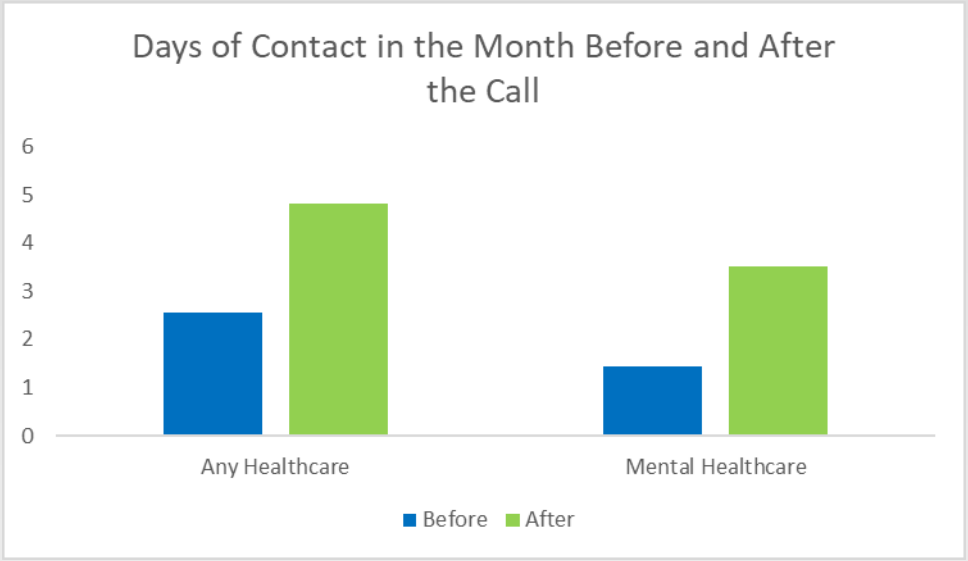
- **Engagement Mental Healthcare** Pre mean (SD) of 1.43 (2.92) days of contact vs. 3.52 (4.75) days of contact


% With Heathcare Contact in the Month Before and Following the Call
90
80
70
60
50
40
30
20
10
0
Any Healthcare
Mental Healthcare
Before
After

Treatment Contact

		Healthcare			Mental Healthcare		
	N (%) M (SD)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	F	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	F
Pre post change		6.10 (4.13 – 9.99)	6.14 (4.07-9.27)	74.97[c]	10.15 (6.63-15.54)	10.20 (6.65-15.65)	113.67[c]
Type				ns			5.80[b]
Routine	125 (20.87)						
Acute							
Sex							
Male							
Age*							

[a] **p < 0.10**
[b] **p < 0.05**
[c] **p < 0.0001**
*** Age analyzed in categories but collapsed in table for readability.**


Days of Contact in the Month Before and After the Call
6
5
4
3
2
1
0
Any Healthcare
Mental Healthcare
Before
After

Treatment Engagement

	Days with Healthcare			Days with Mental Healthcare		
	Unadjusted B (SE)	Adjusted B (SE)	F	Unadjusted B (SE)	Adjusted B (SE)	F
Change over time	0.64 (0.03)	0.65 (0.03)	385.11[b]	0.90 (0.04)	0.90 (0.04)	497.10[b]
Type			12.34[b]			22.71[b]
Routine						
Crisis						
Acute						
Sex			ns			ns
Male						
Female						
Undetermined						
Age *			2.80[a]			ns

[a] p < 0.05, [b] p < 0.0001

Aim 2 Conclusions

- Veteran callers made more contact with healthcare and mental healthcare after the call than before the call.

- Veteran callers also engaged in more days of healthcare and mental healthcare after the call than before the call.

Aims 3a, 3b, and 3c

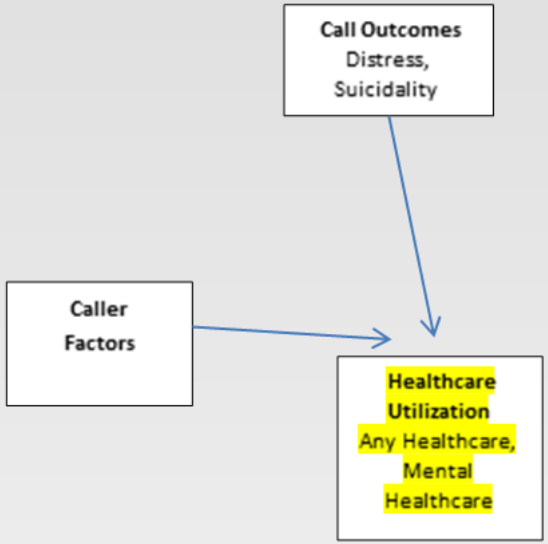
Aim 3a. Examine the impact of reductions in distress and suicidal ideation during VCL calls on healthcare utilization following the calls using VHA medical records.

Aim 3b. Examine the impact of reductions in distress and suicidal ideation during VCL calls on risk for non-fatal attempts in the year following the calls using SBOR/SPAN.

Aim 3c. Examine the impact of healthcare utilization in the month (30 days) following VCL calls on risk for non-fatal attempts in the remainder of the year (days 31-365), using SBOR/SPAN.

Aim 3a

Examine the impact of reductions in distress and suicidal ideation during VCL calls on healthcare utilization following the calls using VHA medical records.



Impact of reduction in distress and suicidal ideation on treatment engagement

		Days with Healthcare			Days with Mental Healthcare		
		Unadjusted B (SE)	Adjusted B (SE)	F	Unadjusted B (SE)	Adjusted B (SE)	F
Distress Over Time		-0.01 (0.02)	0.01 (0.02)	ns			4.52[b]
Suicidal Ideation Over Time		-0.08 (0.03)	-0.08 (0.04)	4.77[b]	-0.09 (0.04)	-0.07 (0.04)	3.43[a]
Change over Time				244.92[d]			281.60[d]
Type				9.73[d]			18.22[d]
	Routine						
	Crisis						
	Acute						
Sex				ns			ns
	Male						
	Female						
	Undetermined						
Age*				3.16[c]			ns

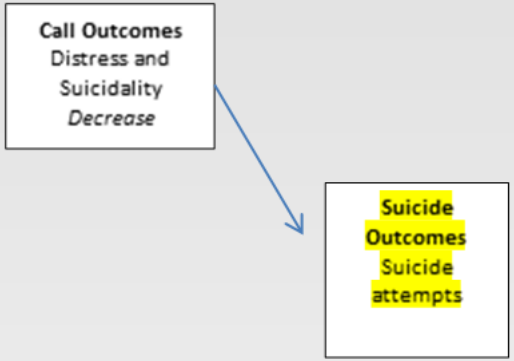
[a] p = 0.06
[b] p < 0.05
[c] p < 0.01
[d] p < 0.0001
* Age analyzed in categories but collapsed in table for readability.

Aim 3a Conclusions

- Reductions in distress and suicidal ideation were not associated with changes in treatment contact.
- Reduction in suicidal ideation was associated with increased engagement in healthcare.
- Reduction in distress was associated with increased engagement in mental healthcare.
- Attending to the reduction of distress and suicidal ideation during calls may be critical to increasing engagement in healthcare and mental healthcare following the call.

Aim 3b

Examine the impact of reductions in distress and suicidal ideation during VCL calls on risk for non-fatal attempts in the year following the calls using SBOR/SPAN.



Survival Analysis Results: Immediate Outcomes and Risk for Non-Fatal Attempts

	Non-Fatal Attempts (32/592, 0.05%)			
	Mean (SD) N%	HR (95% CI)	X^2	p
Change in Distress		1.17 (0.95-1.43)	2.29	0.13
Change in Suicidal Ideation				
Change in Suicidal Urgency	-0.02 (0.23)	0.20 (0.07-0.84)	6.13	0.01
Distress at Baseline		1.17 (0.96-1.43)	0.79	0.37
Suicidal Ideation at Baseline		1.36 (0.96-1.86)	4.30	0.04
Suicidal Urgency at Baseline			0.26	

Aim 3b Conclusions

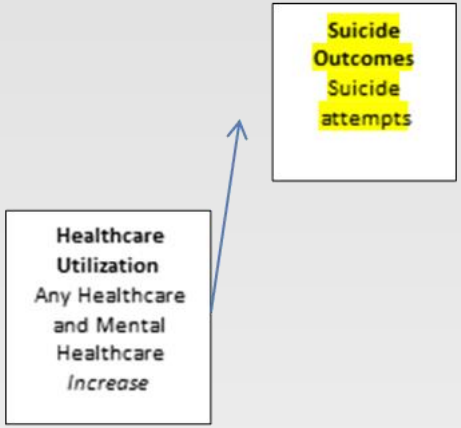
- Changes in distress and suicidal ideation during the call did not impact risk for non-fatal attempts in the year after the call.

- More severe suicidal ideation at the beginning of the call was associated with greater risk for non-fatal attempts in the year following the call.

- Reduction in suicidal urgency during the call was associated with reduction in risk for non-fatal attempt in the year following the call; however, the measure of urgency only had fair reliability and more research is needed.

Aim 3c

Examine the effect of healthcare utilization in the month (30 days) following VCL calls on risk for non-fatal attempts in the remainder of the year (days 31-365), using SBOR/SPAN.



Survival Analysis Results: Treatment Contact and Risk for Non-Fatal Attempts

	Non-Fatal Attempt		
Full Sample			
Healthcare Contact	1.02 (0.40-3.48)	0.00	
Mental Healthcare Contact			
No Pre-Call Healthcare Contact			
Healthcare Contact			
No Pre-Call Mental Healthcare Contact			
Mental Healthcare Contact			

Aim 3c Conclusions

- Treatment contact with healthcare or mental healthcare providers following the call also did not impact risk for non-fatal attempts in the year after the call.

- However, treatment contact with healthcare or mental healthcare providers following the call may reduce risk for non-fatal attempts in the year after the call among Veterans without healthcare contact in the month preceding the call, in a larger sample. More research is needed.

Next Steps

- **Funded Grant:** A Multimethod Examination of Veterans Crisis Line Emergency Dispatches (HSR&D; I01HX003236; PI: Britton)

- **OMHSP Project:** Treatment contact with any healthcare or mental healthcare providers following the call may reduce risk for non-fatal attempts in the year after the call among Veterans without healthcare contact in the month preceding the call, in a larger sample (MPI: Britton & Mohamed).

- Additional projects are in development.

Questions/Comments?

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