# Evaluating Knowledge of Standing Order Implementation for Overdose Prevention

*2015 Survey of Local Health Department Directors*

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# Background

In North Carolina, the rate of unintentional medication/drug overdose deaths has increased by 333% since 1999, putting poisoning deaths on track to surpass motor vehicle deaths as the leading cause of injury death by 2017 (NC IVPB, 2013). The public health burden of drug overdose is immense for both the medical system and wider community. In 2008, for every prescription pain medication death in North Carolina there were 10 treatment admissions for abuse and 32 emergency department visits for misuse. Nationwide, the number of emergency department visits for prescription pain medication abuse has doubled in only five years, costing more than $55.7 billion (CDC, 2014).

Naloxone, a non-addictive prescription medication that can reverse an opioid drug overdose, has the potential to partially alleviate this public health burden. Thirty states and the District of Columbia have passed a law or developed a pilot program to allow for the administration of naloxone by professional or laypeople on a larger scale (ncsl.org, 2014). North Carolina's Good Samaritan/Naloxone Access Law was signed into law on April 9, 2013[1] (North Carolina General Assembly, n.d.). The law has two major impacts: (1) increase access to naloxone by allowing community based organizations to dispense naloxone under the guidance of a medical provider, and protecting medical practitioners who prescribe and bystanders who administer naloxone from civil liability; (2) reduce fear of repercussions and thus increases 911 calls for overdoses by limiting prosecution for small amounts of drugs or paraphernalia for individuals who experience a drug overdose or witness an overdose.

One way to increase access to naloxone is through the adoption of standing orders. A standing order is a written order from a doctor with prescriptive authority that allows for naloxone distribution by designated people, such as trained employees of a health department or harm reduction program, to those who meet the criteria outlined in the order, without an individual prescription. Standing orders can be written and utilized through public health departments, law enforcement and emergency responders, or community groups. This model for organizational policy and distribution has effectively increased naloxone access in urban areas in both California and Massachusetts (Open Society Foundations, 2013). Ultimately, building capacity through the use of standing orders may be an effective strategy for naloxone distribution, especially in semi-urban and rural counties that rely on public health infrastructure for the provision of medical care.

Capitalizing on the opportunity following the passing of the Good Samaritan/Naloxone Access Law, the NC Board of Pharmacy added naloxone to the state public health nurse dispensary formulary list in order to allow local health departments (LHDs) to dispense naloxone. Despite these policy level changes, naloxone standing orders have not been adopted statewide, with only a small number of LHDs establishing standing orders and distribution programs. This study seeks to capture a baseline of current awareness, prioritization, utilization, and support needs surrounding the Good Samaritan/Naloxone Access Law among NC's 85 LHDs and explore the opportunity for LHD naloxone standing orders to reach NC's 100 counties.

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[1] Good Samaritan/Naloxone Access Law was Session Law 2013:23 as revisions to statutes 18B, 90 (Chapters); 18B-302.2, 90-106.2, 90-96.2 (Sections).

# Methods

This survey is one part of a larger process and outcome evaluation being conducted by UNC Injury Prevention Research Center to assess the impact of Project Lazarus on overdose fatalities and injuries across the state. This year, IVPB's Capstone team added seven questions to the existing survey to assess awareness and support needs specific to standing orders for naloxone distribution by LHDs – an intervention especially suited to LHDs and their current infrastructure. Two multiple choice questions assessed LHD's awareness and health priorities, three multiple choice questions identified actions taken or being planned by LHDs to implement naloxone standing orders, and two questions solicited technical assistance needs by health departments to implement naloxone standing orders using check-all that apply and free response options. Survey questions can be found in Appendix A.

In January 2015, the Qualtrics survey was sent via email to the 85 health directors who serve North Carolina's 100 counties by the current President of the NC Association of Local Health Directors. To encourage responses, the Capstone team followed up with phone calls and additional emails. At the close of the survey 82 (96.5%) of 85 LHD directors responded. First, data was cleaned in Excel to account for any duplicate responses and missing data. For example, one county had two staff members respond to the survey. In these cases, responses from the health director were used, as this was the target respondent. In another instance, a health director took the survey multiple-times. In this case, the most recent response data was utilized. Close-ended responses were then analyzed for frequency and geographic patterns, and open-ended responses were analyzed for repetition and trends. County-level data were also mapped in order to consider regional trends.

This study was approved by the University of North Carolina's Institutional Review Board (IRB). Typically UNC IPRC reports annual survey data in statewide aggregate, though the IRB approved reporting county-level data for the additional seven questions added by the Capstone team. County-level data is important because it allows community partners to have a better understanding of LHD experiences with naloxone standing orders and it enables partners to follow up on technical assistance needs expressed.

# Results

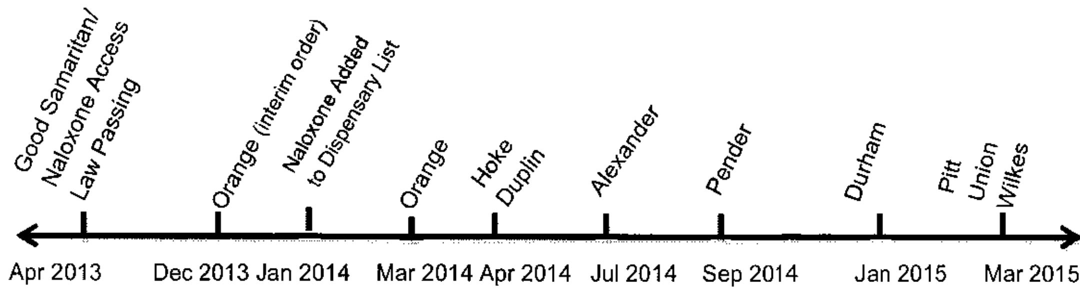
## *Opportunities*

Health director responses demonstrated several opportunities across NC to strengthen overdose prevention programming through LHDs.

### Leveraging Early Adopters to Support Interested Neighboring Counties

Nearly all (96%) of health directors were aware of the passing of the Good Samaritan/Naloxone Access Law and of the subsequent opportunity for LHDs and medical directors to adopt standing orders, allowing designated staff to dispense naloxone (93%). Over the past two years, nine counties have adopted their own naloxone standing orders. Figure 1 shows naloxone standing order adoption by county in North Carolina since the passing of the law.

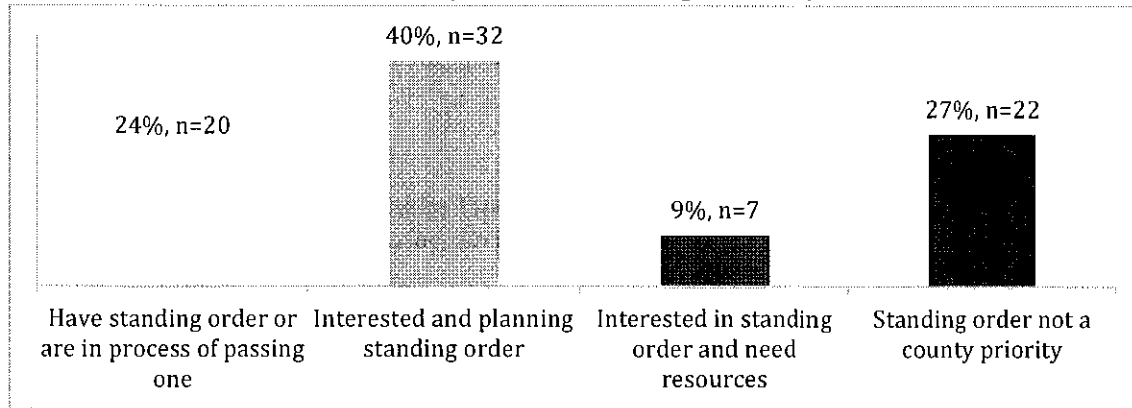
**Figure 1: Timeline of Standing Orders Adopted by LHDs in North Carolina since Good Samaritan/Naloxone Access Law Passage[2]**




These counties are geographically diverse, representing all regions of North Carolina. This creates the opportunity for a spillover effect, in which counties interested in the process of adopting naloxone standing orders (n=44, 55%) can reach out to those who have successfully adopted or are further along in the process of adoption and programming to provide resources and support. IVPB and community organizations can also leverage these early adopters as models to assist those interested.

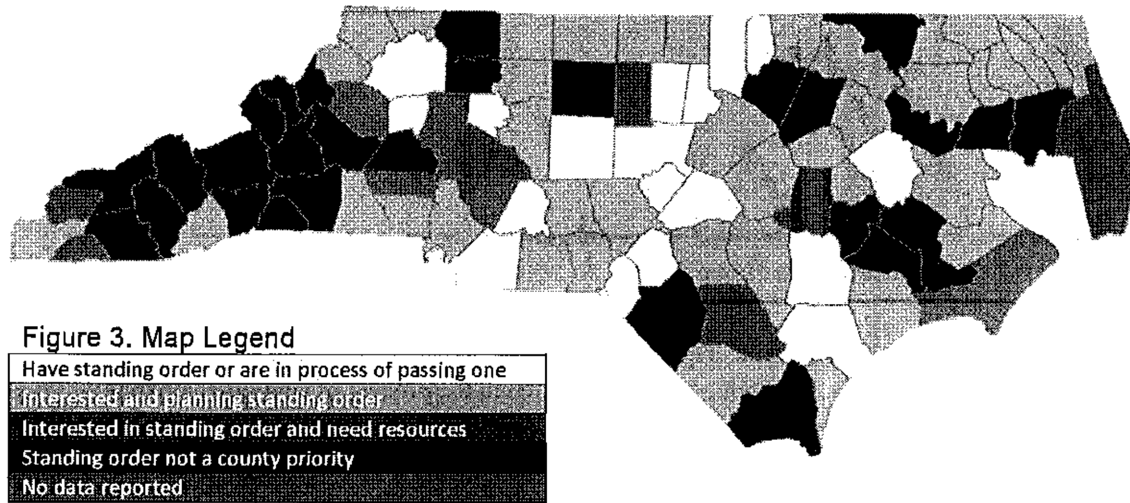
LHDs also report varying levels of interest in naloxone standing orders (Figure 2). The following map (Figure 3) depicts levels of action and interest visually to illustrate regional trends.

**Figure 2: Progress Towards Adopting Naloxone Standing Orders by LHDs**




[2] Reflects survey results as of February 2015

**Figure 3: County-Level Map of Actions Taken Towards Naloxone Standing Orders by LHDs[3]**




Each region of North Carolina has counties at different stages of readiness, planning, and action. This creates an opportunity for peer-to-peer training and sharing of lessons learned at the local or regional level.

## Using Health Department Priorities to Frame Standing Orders

Active priorities of LHDs, shown in Table 1, span a variety of issue areas important in overdose prevention.

**Table 1: Active Priorities of LHD**

| | Percent | Number of health directors responses |
|---|---|---|
| Access to care | 89% | 73 |
| Chronic disease | 88% | 72 |
| Substance abuse | 55% | 45 |
| Mental health | 39% | 32 |
| Injury | 33% | 27 |
| Poisoning, including drug overdose | 24% | 20 |
| Suicide | 15% | 12 |

While poisoning and drug overdose specifically were only a priority for 24% of health directors, access to care (89%) and chronic disease (88%) also encompass overdose prevention. For example, opioid prescriptions are commonly used in chronic disease management, and in NC, overdose from opioid analgesics (e.g. methadone, oxycodone, hydrocodone) are the most common causes of unintentional

[3] An interactive version of this map can be found here (click on counties to display county name and survey response).

poisoning deaths (Austin & Finkbeiner, 2013). Thus, increased access to naloxone, and passage of a standing order, is also relevant for counties prioritizing access to care and chronic care.

Utilizing county level priorities, IVPB can support overdose prevention efforts, including increasing interest in naloxone standing orders, by connecting overdose prevention to identified community priorities, such as access to care and chronic disease. Likewise, LHDs can leverage tailored messaging to engage county stakeholders to adopting naloxone standing order and support overdose prevention programming.

Overall, health director responses identified bright spots for collaboration between counties and persuasive messaging and framing that can be leveraged to increase overdose prevention programming across North Carolina.

## *Support Needed*

While the Good Samaritan/Naloxone Access Law made the passing of standing orders possible for LHDs, many health directors identified barriers and technical assistance needs regarding implementation and utilization of standing orders.

### Implementation Needs of LHD's to Adopt Naloxone Standing Order

Funding was the most commonly (60%) identified area of support needed to adopt naloxone standing orders by their LHD. Funding opportunities and resources for supplying naloxone kits should be identified by statewide community organizations and IVPB to best support health directors and LHDs. Additionally, LHDs should partner to share lessons learned and resources to meet these needs.

Other common areas of support requested included assistance in crafting and passing the policy itself, developing programming, and assistance in engaging community members and increasing stakeholder buy-in, as seen in Table 3. Open-ended responses by health directors reiterated these needs with additional requests for data surrounding overdose and naloxone success rates, resources and funding, and staff training (n=7).

**Table 3: Overdose Prevention Support Needed by LHDs**

| | |
|---|---|
| Funding/Sustainability | 60% |
| Data collection and/or analysis (for assessment, surveillance, and/or evaluation) | 43% |
| Program development | 38% |
| Policy development | 38% |
| Community engagement (e.g. awareness raising and outreach) | 37% |
| Communications (e.g. marketing/media/social media) | 34% |
| Capacity building (e.g. coalition development and maintenance) | 32% |
| Implementation or development of naloxone distribution program | 32% |
| Implementation (program and policy) | 30% |
| Strategic planning and problem analysis | 28% |
| Advocacy | 24% |
| Our agency does not need technical assistance at this time. | 21% |
| Other | 4% |

Expounding on the need for support in development and implementation of naloxone distribution programs, three health directors noted challenges with access to a pharmacy. Respondents requested additional information and support in problem solving for LHDs without pharmacies to distribute naloxone, and potentially using of a contracted pharmacy in the county for distribution. Lastly, for counties interested in adopting standing orders and requesting support for policy or program development, creating and disseminating county case studies can spread local knowledge and catalyze peer collaboration.

### Interest and Prioritization of Naloxone Standing Orders in LHDs

While nine counties reported passing naloxone standing orders, as previously shown in Figure 2, only Orange and Alexander County report actively utilizing their standing order to distribute naloxone in their communities. This shows a gap between policy development and implementation that needs to be addressed at a statewide level. Further research can assess specific barriers hindering active utilization of standing orders and assist counties to operationalizing the policy into implementation.

Furthermore, while nearly half of health directors noted interest in naloxone standing orders, more than a quarter (n=22, 27%) of health directors stated that naloxone standing orders were not a current priority for their LHD or county. The majority of these counties are clustered in the western region of the state, where the rates of unintentional poisoning deaths are predominantly higher (Austin & Finkbeiner, 2013). One potential reason for this mismatch of high need and low prioritization is that high-need counties may be collaborating with community organizations or other agencies to address the issue of overdose prevention rather than addressing it through their own naloxone standing order. The North Carolina Harm Reduction Coalition has a large presence in the western part of the state, which may account for a large portion of these counties not considering a LHD naloxone standing order a priority. In open-ended responses, three health directors noted collaborating with coalitions, EMS, and law enforcement to provide naloxone in their community and thus deprioritized having a distribution program at their LHD.

Respondent awareness of the Good Samaritan/Naloxone Access Law also showed a geographic clustering. While the majority of health directors were aware of the passing of the Law, the three counties who were unaware span the southeast area of North Carolina. Training and increased information dissemination could target this area and further investigate the reasons for a gap in information and awareness particularly in this region.

## Strengths & Limitations

This research captured county-level awareness and actions taken surrounding the Naloxone Access/Good Samaritan Law and LHD naloxone standing orders across a geographically large and diverse state. To our knowledge, this survey is the first to assess knowledge and priorities related to naloxone standing orders in NC. Additionally, with an extremely high response rate (96.5%), this report provides a nearly complete picture of statewide health department overdose prevention activities following the passing of the law.

Despite these informative results, the study should be interpreted within the following limitations. First, NC has 100 counties, yet is served by only 85 LHDs and directors. This means that some health director's responses represented multiple counties at one time. For this reason, while surveying health directors is the most efficient way to gain statewide data, it may not provide the most in-depth or accurate picture at the county level. One health director noted that it was very difficult to generalize for all three counties

when answering this survey. Additionally, in larger counties or multi-county regions, health directors may not be fully aware of the programming that their staff are considering and thus may misreport their county's planning stage of naloxone standing orders in survey responses.

Another challenge to survey response collection was health director turnover. During the month of the survey data collection, several health director positions were in flux, resulting in new health directors responding to questions about county-level trends and priorities of which they may not have been entirely familiar.

Finally, overdose prevention and Good Samaritan/Naloxone Access policy programming is new and quickly evolving, and as such, it is possible that several questions may have been misunderstood. For example, standing orders for law enforcement and EMS are frequently discussed either in addition to or in place of LHD standing orders. Similarly, many LHDs collaborate with other organizations to distribute or co-prescribe Naloxone using another organization's standing order. Thus, it is possible the number of and/or actions taken towards standing orders may have been misreported due to a misunderstanding of standing order definitions. Additionally, the technical assistance question referred to support for overdose prevention in general and not to LHD naloxone standing order passing and implementation specifically. Thus, barriers and requested assistance may not be fully indicative of barriers to LHD naloxone standing orders, but rather barriers to the larger issue of overdose prevention.

## Conclusion

Since the passing of the Good Samaritan/Naloxone Access Law two years ago, 25 percent of North Carolina LHDs have passed or are in the process of passing a naloxone standing order allowing for increased distribution of naloxone in their county. Additionally, half of the remaining health directors (n=32) showed interest in passing a naloxone standing order in their LHD. This presents a potential opportunity for counties, IVPB, and overdose prevention organizations such as Project Lazarus of Community Care North Carolina and North Carolina Harm Reduction Coalition to increase access to naloxone statewide, evaluate the effectiveness of naloxone standing orders, and decrease overdose deaths in North Carolina.

To support LHDs implementation of the Good Samaritan/Naloxone Access Law, IVPB and community organizations should address identified barriers and needed support, such as access to funding/sustainability, access and awareness of data for naloxone and standing order successes, program and policy creation, and community awareness. Resources and information should be widely disseminated to LHDs and reflect lessons learned thus far. For example, the successes and lessons learned of early adopters could inform the development of a checklist of processes required to pass a standing order. A resource toolkit could include this checklist, as well as model standing order policy language, community engagement trainings and resources, tailored messaging, naloxone kit creation and funding sources, and various solutions identified by LHDs without pharmacy services on site, to distribute naloxone from counties with naloxone standing orders. Early adopters should also present their models and their lessons learned at state health director meetings and Injury and Violence Prevention State Advisory Committee meetings.

Acknowledging North Carolina's large geographical size, number of counties, and large county control, counties at interested and planning stages of action should identify neighboring counties to provide

resources and support throughout the process. Additionally, IVPB should consider utilizing model counties to provide support across the state, instead of providing one-on-one technical assistance.

Finally, while this survey assessed knowledge and actions towards naloxone standing orders in LHDs, distribution of naloxone by LHDs are not the only method, nor have they been proven as the most effective method for distribution of naloxone and prevention of overdoses. Several health directors noted that other organizations, coalitions, and departments effectively provide this service in their county. The North Carolina Harm Reduction Coalition has a large presence in the Mountain, Triad, and Piedmont and in Fayetteville/Cumberland area of the state, which may account for a large portion of these counties not considering LHD standing orders priority. More research is needed to evaluate the effectiveness of standing orders in LHDs in North Carolina. North Carolina's wide range of stages of adoption presents a unique opportunity for research and monitoring of standing orders in LHDs.

## Appendix A: Survey Questions

Q1 Thank you for taking 5-8 minutes to fill out this survey. Your responses are an important part of our statewide efforts to prevent prescription drug abuse, misuse and overdose. What is your name?

Q2 What is your current position?

- ○ County Health Director
- ○ County Medical Director
- ○ Other ____________________

Q3 Which county(ies) do you serve? Please only list county(ies) for which you are responsible. Check all that apply.

- ☐ Alamance
- ☐ Alexander
- ☐ Alleghany
- ☐ Anson
- ☐ Ashe
- ☐ Avery
- ☐ Beaufort
- ☐ Bertie
- ☐ Bladen
- ☐ Brunswick
- ☐ Buncombe
- ☐ Burke
- ☐ Cabarrus
- ☐ Caldwell
- ☐ Camden
- ☐ Carteret
- ☐ Caswell
- ☐ Catawba
- ☐ Chatham
- ☐ Cherokee
- ☐ Chowan
- ☐ Clay
- ☐ Cleveland
- ☐ Columbus
- ☐ Craven
- ☐ Cumberland
- ☐ Currituck
- ☐ Dare
- ☐ Davidson
- ☐ Davie
- ☐ Duplin
- ☐ Durham
- ☐ Edgecombe
- ☐ Forsyth
- ☐ Franklin
- ☐ Gaston
- ☐ Gates
- ☐ Graham
- ☐ Granville
- ☐ Greene
- ☐ Guilford
- ☐ Halifax
- ☐ Harnett
- ☐ Haywood
- ☐ Henderson
- ☐ Hertford
- ☐ Hoke
- ☐ Hyde
- ☐ Iredell
- ☐ Jackson
- ☐ Johnston
- ☐ Jones
- ☐ Lee
- ☐ Lenoir
- ☐ Lincoln
- ☐ Macon
- ☐ Madison
- ☐ Martin
- ☐ McDowell
- ☐ Mecklenburg
- ☐ Mitchell
- ☐ Montgomery
- ☐ Moore
- ☐ Nash
- ☐ New Hanover
- ☐ Northampton
- ☐ Onslow
- ☐ Orange
- ☐ Pamlico
- ☐ Pasquotank
- ☐ Pender
- ☐ Perquimans
- ☐ Person
- ☐ Pitt
- ☐ Polk
- ☐ Randolph
- ☐ Richmond
- ☐ Robeson
- ☐ Rockingham
- ☐ Rowan
- ☐ Rutherford
- ☐ Sampson
- ☐ Scotland
- ☐ Stanly
- ☐ Stokes
- ☐ Surry
- ☐ Swain
- ☐ Transylvania
- ☐ Tyrrell
- ☐ Union
- ☐ Vance
- ☐ Wake
- ☐ Warren
- ☐ Washington
- ☐ Watauga
- ☐ Wayne
- ☐ Wilkes
- ☐ Wilson
- ☐ Yadkin
- ☐ Yancey

(Note: Questions 4-11 were part of the larger survey and evaluation effort by the Injury Prevention Research Center at UNC and were not included in our analysis)

This next set of survey questions is from our close partner, the Division of Public Health (DPH) Injury and Violence Prevention Branch, and focus on health department standing orders for naloxone (or Narcan), a medication that can reverse opioid overdose.

In contrast to the data collected above by UNC IPRC that are only reported in aggregate (unless requested otherwise by the health director), the county-level data from these questions is being collected by DPH and may be shared with our community partners to understand experiences of local health departments; and to provide technical assistance and follow-up as needed. Individual respondent names will not be published.

Q12 Are you aware of the April 2013 passing of the Good Samaritan and Naloxone Access Law Senate Bill 20which in part:

- Allows prescribers (in this case your department's medical director) to write a standing order for naloxone, i.e., a medication order (prescription) that is not specific to a particular patient
- Provides legal immunity to practitioners who prescribe naloxone, so long as they act in good faith and exercise reasonable care
- Provides legal immunity to any person who receives naloxone pursuant to the law and exercises reasonable care in administering it to someone who appears to be having a drug-related overdose; Provides limited legal immunity to anyone who seeks medical assistance in good faith for a person experiencing a drug-related overdose.

- ❍ Yes, I am aware.
- ❍ No, I am not aware.

Q13 Are you aware that your health department's medical director can create a standing order that allows designated staff within your department (including nurses, health educators, home visitors, etc.) to dispense naloxone to clients and community members (regardless of where they may get their opioid prescriptions) and train these recipients on how to recognize and reverse an opioid overdose?

- ❍ Yes, I am aware; my LHD 1) has an organizational policy that allows the use of a naloxone standing order AND 2) my medical director has written a standing order for naloxone.
- ❍ Yes, I am aware, BUT either 1) my Health Department does NOT have an organizational policy OR 2) my medical director has NOT written a standing order for naloxone.
- ❍ No, I am not aware.

Q1 What actions has your health department taken towards having your medical director write a standing order to prescribe naloxone and having your designated staff dispense naloxone and train recipients?

- ○A standing order/organizational policy is in place and being utilized.
- ○A standing order/organizational policy is in place and has yet to be utilized.
- ○We are in the process of passing a standing order/organizational policy or working towards the development of a policy.
- ○We are interested and are planning to take steps in the future.
- ○We are interested but do not know how to pass a standing order for naloxone.
- ○This standing order is not currently a priority for our LHD.

Q15 What is the effective date for your standing order? Enter the effective date as MM/DD/YYYY

Q16 Which of the following areas are active priorities for your health department's jurisdiction? Check all that apply

- ❑ Access to care
- ❑ Chronic disease
- ❑ Injury
- ❑ Mental health
- ❑ Poisoning, including drug overdose
- ❑ Substance abuse
- ❑ Suicide

Q17 The DPH has some resources to provide technical assistance to local health departments in terms of overdose prevention. Think about your current technical assistance needs specific to overdose prevention. What areas of technical assistance would be helpful to you? Please check all that apply

- ❑ Capacity building (e.g. coalition development and maintenance)
- ❑ Strategic planning and problem analysis
- ❑ Community engagement (e.g. awareness raising and outreach)
- ❑ Data collection and/or analysis (for assessment, surveillance, and/or evaluation)
- ❑ Program development
- ❑ Policy development
- ❑ Implementation (program and policy)
- ❑ Communications (e.g. marketing/media/social media)
- ❑ Advocacy
- ❑ Funding/Sustainability
- ❑ Implementation or development of naloxone distribution program
- ❑ Other, Please write in what other technical assistance would be helpful in the space below: ____________________
- ❑ Our agency does not need technical assistance at this time.

Q18 Is there anything else you would like to share

# References

Assessing Implementation of Naloxone Access/Good Samaritan Law (2015). UNC Capstone Team.

Austin, Anna; Finkbeiner, Stephanie (2013). The Burden of Unintentional Overdoses. The Department of Health and Human Services: Injury and Violence Prevention Branch. http://injuryfreenc.ncdhhs.gov/About/UnintentionalPoisoningDoc2013.pdf

Centers for Disease Control and Prevention. (2014). Prescription Drug Overdose in the United States: Fact Sheet. http://www.cdc.gov/homeandrecreationalsafety/overdose/facts.html

Childs, R. (2014). NC Harm Reduction Coalition's Overdose Prevention Program Shows Successful Impact, Receives National Attention. http://www.bluenc.com/content/nc-harm-reduction-coalition%E2%80%99s-overdose-prevention-program-shows-successful-impact-receives.

National Conference of State Legislatures (2014). Drug Overdose Immunity "Good Samaritan" Laws. http://www.ncsl.org/research/civil-and-criminal-justice/drug-overdose-immunity-good-samaritan-laws.aspx#2

North Carolina General Assembly. (n.d). Senate Bill 20. http://www.ncleg.net/gascripts/BillLookUp/BillLookUp.pl?Session=2013&BillID=s20.
North Carolina Harm Reduction Coalition. (2013). 911 Good Samaritan/Naloxone Access Law Passes NC General Assembly. http://www.nchrc.org/news-and-events/news/911-good-samaritan-naloxone-access-law-passes-nc-general-assembly/.

North Carolina Harm Reduction Coalition (n.d.) NCHRC's North Carolina Community Based Overdose Prevention Project. http://www.nchrc.org/programs-and-services/overdose-prevention-project/

North Carolina Injury and Violence Prevention Branch. (2012). Prescription & Drug Overdoses. http://injuryfreenc.ncdhhs.gov/About/PrescriptionFactSheet2012FINAL.pdf

North Carolina Injury and Violence Prevention Branch. (2013). The Burden of Unintentional Poisonings in North Carolina. http://injuryfreenc.ncdhhs.gov/About/UnintentionalPoisoningDoc2013.pdf

Open Society Foundations. (2013). Naloxone Standing Orders Case Studies. http://naloxoneinfo.org/case-studies/standing-orders

Project Lazarus. (2013). The Overdose Epidemic. http://projectlazarus.org/doctors/overdose-epidemic

Project Lazarus. (n.d). Naloxone OD Antidote. http://projectlazarus.org/naloxone-od-antidote