MINUTES OF THE CASWELL COUNTY BOARD OF HEALTH

The Caswell County Board of Health met at 7:00 P.M. on Tuesday, September 24, 2013 in the Caswell County Health Department's downstairs meeting room in Yanceyville, North Carolina.

ATTENDANCE:

Position	Name	Present	Not Present
County Commissioner	Nate Hall	X	
Pharmacist	Andrew Foster, Pharm. D, R.Ph. (Chair)	X	
Dentist	Rose Satterfield, DMD	X	
Veterinarian	Donald Fuller, DVM	X	
Physician (Gen. Pub.)	Cecil Page	X	
Registered Nurse (Gen. Pub.)	Sharon Kupit	X	
Engineer (Gen. Pub.)	Ricky McVey	X	
Optometrist (Gen. Pub.)	Carl Carroll, RS. MBA	X	
General Public	Keisha King		X
General Public	Elin Armeau-Claggett, PA-C, PhD (Vice-Chair)	X	
General Public	Sally Wallace		X

Others Present: Frederick Moore, MD – Health Director
Sharon Hendricks – Finance Officer
Jennifer Eastwood, MPH – QI Specialist

I. Call to Order

A. The September meeting of the Caswell County Board of Health was called to order by the Chair at 7:00 P.M.

II. Public Comment

A. None

III. Action Items

A. Approval of Minutes

A motion was made by Cecil Page and seconded by Donald Fuller, to approve the July 23, 2013 Minutes of the Board Of Health as distributed in the packet. The motion carried on a vote of 9 to 0.

B. Budget Amendment #1

1. Budget Amendment #1 moves funds between lines to cover expenses and reduces the state funds in Maternal Health and Family Planning by $2,925.

A motion was made by Carl Carroll and seconded by Cecil Page, to approve Budget Amendment #1 as presented in the packet. The motion carried on a vote of 9 to 0.

C. Accreditation and Tobacco Use

1. Dr. Moore explained that one of the standards for Public Health Accreditation states that "*The local health department shall make efforts to prohibit the use of tobacco in all areas and grounds within fifty (50) feet of the health department facility" (Activity 30.10).*
2. In 2008 the Board of Health approved a rule that banned all smoking in county and municipal buildings within Caswell County but that rule made no restrictions on smoking on the areas and grounds surrounding these buildings.
3. This standard requires an effort to ban smoking within fifty feet of the Health Department, including the building that houses Environmental Health.
4. State law now requires any restriction of smoking approved by the Board of Health to also be approved by the Board of County Commissioners.
5. Information was included in the packet from the state Tobacco Prevention and

Control Branch about the reasons for restricting second hand smoke and the process of enacting such a rule.

6. Dr. Moore asked for guidance from the Board of Health as to how they wanted to respond to this accreditation standard.
7. Jennifer Eastwood explained that prior to the last accreditation, the Board of Health had discussed the matter and had decided not to restrict the outdoor smoking around the Health Department.
8. Rick McVey felt strongly that the Board of Health did not have the right to tell people they could not smoke outside the Health Department. He stated that taxes on tobacco and county citizens paid for the Health Department and the Board of Health should not restrict their right to smoke if that is what they chose to do. He said that restricting outdoor smoking "crossed the line" and most people know that smoking is not good for them but that is their own choice.
9. Elin Armeau-Claggett suggested that smoking restrictions could be made within 25 feet of clinical areas to protect the patients with asthma or other respiratory problems. She also asked the board what they thought about a sign requesting that people not smoke near the Health Department. Such a sign was a request, not a regulation; it is the difference between "please don't" and "do not".
10. Nate Hall said that he had an allergy to cigarette smoke and this accreditation standard is about protecting people like him that are effected by any exposure to secondhand smoke, even out of doors. This is not about telling people what they cannot do, it is about protecting the public. He said that the Board of Health not only has the right to restrict out door smoking, it also has the responsibility to do it. He said that while most people will respond to a request but only having a formal regulation will keep everyone from smoking near the building. Some people are stubborn and will smoke just because they can. This particular accreditation standard is asking the board to address smoking not dog hair or obesity.
11. Rose Satterfield said that she was not aware of studies that showed there was harm from second hand smoke outside and she did not think we had the right to tell people they could not smoke outside. She felt that we were already over regulated and the Board of Health did not need to add to the regulations.
12. Carl Carroll said that he was concerned about secondhand smoke that made its way inside buildings from people smoking near entrances. Anything that allows smoke to enter the building where sick people are coming for care needed to be addressed.
13. Andrew Foster said that he saw both sides of the issue and he had experienced secondhand smoke at his place of business from people smoking outside and the smoke making its way inside. He agreed with those who felt like there was too much regulation but he also felt that the Board of Health was supposed to deal with health issues like this. He felt that a voluntary request to not smoke near the Health Department was adequate.
14. Dr. Moore said that some people were very sensitive to tobacco smoke and had symptoms even from the smell of smoke coming off of a smoker's clothing. Rick McVey said that that person then had the choice of moving away or asking the smoker to move away.
15. Cecil Page commented that he is a former smoker and until he stopped smoking he did not realize how the smell of smoke lingered on his clothing. He also said that he saw how smoking outside of a doorway could cause a problem for those inside the building when the door was opened.
16. Donald Fuller said that his grand daughter has asthma and if he has smoke on his

clothes when he hugs her, it could precipitate an asthma attack ending in a trip to the hospital. He felt that there needed to be a smoke free "tunnel" coming in and out of all entrances to the Health Department.

17. Rick McVey said that there are health problems with dog and horse allergies, overeating, driving cars; was the Board of Health going to try and regulate those too? Nate Hall said that there were education programs encouraging people to exercise and eat a healthy diet. Dr. Moore said that there was a difference between telling someone they cannot smoke within 50 feet of a building and telling them they cannot be obese within 50 feet of a building.
18. Dr. Moore commented that his overeating did not directly impact the health of those he came in contact with. Rick McVey said that it had an indirect effect on others because if he died from a heart attack related to overeating, the county would not get the taxes he currently paid.
19. Cecil Page asked if the board was allowed to adjust the fifty foot part of the standard. Dr. Moore said that the board could do whatever is liked and then it would go to the Board of County Commissioners for their action.
20. Dr. Moore commented that the debate was not whether the Board of Health could impose a smoking ban because the law said it could, but whether the Board of Health should impose such a rule. He also said that the issue of enforcement of such a rule often is discussed but from what he has seen, read and heard from other counties, compliance with such a ban is typically very high.
21. Cecil Page said that since the indoor smoking ban went into effect in 2008 he has only heard a few complaints about it. Rick McVey said that the point was not whether people complained about it but that the board does not have the right to restrict outdoor smoking.
22. Dr. Moore asked the Board of Health for direction about what they wanted him to prepare for the next meeting. He also said that there may need to be a public hearing on the matter and if the Board of Health eventually approved an out door smoking ban, the Board of County Commissioners would still need to address it before it could be implemented.

A motion was made by Donald Fuller and seconded by Sharon Kupit, to table the matter until the next meeting but direct Dr. Moore to prepare a draft of a rule prohibiting smoking within 50 feet of the Health Department. The motion carried on a vote of 5 to 4.

IV. Informational Items

A. Dr. Moore reviewed the informational items included in the packet.
   1. Environmental Health statistics
   2. Clinic statistics by programs and zip code
   3. Vital record statistics
      a. Elin Armeau-Claggett pointed out the high infant mortality rate seen in the report.
      b. Dr. Moore said that those numbers were often misleading, in either positive or negative directions, due to the small numbers seen in Caswell County. However, Dr. Moore said that he would look into this and bring the information back to the board.
   4. Certificate of Completion from the Public Health Quality Improvement 101 Program.
   5. Home Health statistics were reviewed and showed the impact of the staffing issues and NCTracks billing issues we have had. NCTracks has just started paying the back log of Medicaid billing. In addition, there were some internal billing issues that are being worked on.

6. Rick McVey asked if we had formal exit interviews with resigning employees. He said that a former employee had requested to talk with him about the Health Department. He will report back when he finds out more.

V. Adjournment

The chairman declared the Board of Health meeting adjourned. There was no objection from the membership.

Approved By: _____ _____

Health Director Date

_____ _____

Board of Health Date

Health Director's Report – October 22, 2013

I. **Board of Health**

A. If board members have not yet completed their online orientation, they are encouraged to do so. This can be found at the following link: *http://www2.sph.unc.edu/nciph/local_boards_of_health_training_19511_12491.html*. In addition the Institute for Public health has some training for Board of Health members. Is this something that the board would like for Dr. Moore to arrange?

B. If board members have not signed the conflict of interest and the confidentiality statement please be prepared to sign this at the meeting.

C. I have heard nothing more from Sally Wallace about her interest in serving on the Board of Health.

II. **Health Director**

A. I want to thank the Board of Health for their concern about my father over the last several months. I appreciate the board giving me the flexibility to be with him during the last few weeks of his life and to attend his memorial service.

III. **Finance Report**

A. We have now received the "final" pre-audit figures from the county for last fiscal year. The auditor often makes additional changes to these numbers. We have not had a chance to look at them closely yet but hope to within the next few weeks.

B. The report included in the packet shows how actual revenue and expense compares to the budget through the end of September (25% of the fiscal year). According to this report the Health Department is at 21% of total budgeted expenses and 17% of budgeted revenue.

C. Medicaid revenue is finally starting to come in so it appears that the NCTracks issues are finally beginning to get straightened out.

D. We have had a budgetary roller coaster ride the last few weeks with the Federal Government shut down. At one point we were told there was going to be a $94,000 cut that was going to be permanent and then we were told there would not be any cuts after the government reopened. We are still waiting to see the final answer in writing.

IV. **Health Department Accreditation and Tobacco**

A. As requested at the last meeting, I have included in the packet a draft of a Board of Health rule prohibiting smoking within fifty feet of the Health Department. This is based on a model rule provided by the state but I removed the parts not related to the fifty foot issue.

B. As a point of reference, I have also included in the packet the indoor smoking rule approved by the Board of Health in 2008.

C. At the last meeting there was discussion about any evidence to show that outdoor smoking created a health hazard via secondhand smoke.

1. There does not seem to be a lot of objective studies on this matter, but there are a few that I have included in the packet.
2. There are many variables when it comes to measuring the concentration of smoke such as wind speed and direction, number of smokers, length of exposure and other environmental conditions.
3. The bottom line seems to be that the concentration of smoke is dramatically reduced to a very low level at about 6 feet. The US Surgeon General says that no exposure is safe but at 6 feet the exposure falls below what some agencies believe is dangerous.

V. **Home Health Accreditation**

A. The unannounced accreditation site visit for Home Health began on 10/21/2013.

B. These usually last several days so hopefully we will know something within the next several weeks.

VI. Infant Mortality

A. At the last meeting there was discussion about the high infant mortality rate in Caswell County as seen on the State Vital Records statistics.

B. I have included some additional statistics in the packet to help shed some light on this matter.

VII. Miscellaneous Informational Items

A. Environmental Health Statistics

B. Personal Health Statistics

CASWELL COUNTY HEALTH DEPARTMENT (FY 2013-2014)

		Budget	Actual YTD	Balance	YTD = 25.00%
SALARY & BENEFITS SUBTOTAL		**2,061,456.00**	**469,153.61**	**1,592,302.39**	**22.76%**
Board Expenses	120	0.00	0.00	0.00	0.00%
Salary	121	1,542,167.00	361,173.06	1,180,993.94	23.42%
Call	122	44,005.00	8,838.00	35,167.00	20.08%
Longevity	127	22,295.00	0.00	22,295.00	0.00%
SS / FICA	181	125,867.00	27,254.60	98,612.40	21.65%
Retirement	182	114,509.00	25,405.61	89,103.39	22.19%
Health Insurance	183	212,613.00	46,482.34	166,130.66	21.86%
OPERATIONAL EXPENSE SUBTOTAL		**950,994.25**	**171,133.62**	**779,860.63**	**18.00%**
Contracted Services	199	458,308.00	66,445.92	391,862.08	14.50%
Food & Provisions	220	496.00	207.06	288.94	41.75%
Program Supplies	230	28,784.00	4,008.98	24,775.02	13.93%
Pharmaceuticals	238	30,230.00	6,121.51	24,108.49	20.25%
HH/CAP Med Supplies	239	188,000.00	43,202.74	144,797.26	22.98%
Office Supplies	260	16,495.00	2,970.25	13,524.75	18.01%
Small Tools & Equip.	295	34,612.00	2,504.78	32,107.22	7.24%
Mileage	311	107,255.00	17,258.27	89,996.73	16.09%
Travel Subsistence	312	4,983.00	1,156.73	3,826.27	23.21%
Telephone	321	11,960.00	2,169.89	9,790.11	18.14%
Postage	325	4,637.00	516.01	4,120.99	11.13%
Printing	340	1,670.00	513.75	1,156.25	30.76%
Maint & Repair	352	8,000.00	1,243.80	6,756.20	15.55%
Advertising	370	1,901.00	1,097.80	803.20	57.75%
Laundry	392	1,383.00	255.87	1,127.13	18.50%
Training	395	8,781.00	790.50	7,990.50	9.00%
Rental of Copier	431	9,500.00	1,477.55	8,022.45	15.55%
Rental of Post Meter	432	850.00	204.00	646.00	24.00%
Ins & Bonding	450	4,284.00	4,283.55	0.45	99.99%
Dues, Subsc. & Pub.	491	18,967.00	14,704.66	4,262.34	77.53%
Capital Outlay	500	9,898.25	0.00	9,898.25	0.00%
TOTAL EXPENSES		**3,012,450.25**	**640,287.23**	**2,372,163.02**	**21.25%**

TOTAL REVENUE		**3,012,450.25**	**504,382.53**	**2,508,067.72**	**16.74%**
STATE SUBTOTAL		**536,460.00**	**44,857.61**	**491,602.39**	**8.36%**
(101) COUNTY APPROP		371,576.00	100,607.14	270,968.86	27.08%
(103) UR FUND BAL		96,042.00	22,878.32	73,163.68	23.82%
(102) WCH FUND BAL		134,623.25	66,222.72	68,400.53	49.19%
(102) PPC FUND BAL		55,081.00	20,953.15	34,127.85	38.04%
OTHER SUBTOTAL		**657,322.25**	**210,661.33**	**446,660.92**	**32.05%**
(102) MCD – REGULAR		973,583.00	82,059.70	891,523.30	8.43%
(102) MCD – SETTLEMENT		0.00	0.00	0.00	0.00%
(103) MCR – REGULAR		704,401.00	127,311.55	577,089.45	18.07%
(103) MCR – HMO		57,437.00	17,240.22	40,196.78	30.02%
(103) PRIVATE INS		15,047.00	5,889.20	9,157.80	39.14%
(103) DIRECT FEES		68,200.00	16,362.92	51,837.08	23.99%
EARNED SUBTOTAL		**1,818,668.00**	**248,863.59**	**1,569,804.41**	**13.68%**

BALANCE	**0.00**	**-135,904.70**	

Position	Last Name	First Name	4/3/12	4/24/12	5/22/12	6/26/12	7/24/12	9/25/12	10/8/12	10/23/12	11/27/12	1/22/13	2/26/13	3/26/13	4/23/13	5/28/13	6/25/13	7/23/13	9/23/13	Absences	Present	Meetings	Missed Mtgs
General Public	Armeau-Claggett	Elin					P	P	P	P	P	P		P	A	P		P	P	1	10	11	9.09%
Optometrist (Gen. Pub.)	Carroll	Carl	P	P	P	P	A	P	P	P	P	P		A	A	P		A	P	4	14	18	22.22%
Pharmacist	Foster	Andrew					P	P	P	P	P	P		P	P	P		P	P	0	11	11	0.00%
Veterinarian	Fuller	Donald	A	P	P	P	P	P	P	A	P	P		P	P	P		P	P	12	79	91	13.19%
County Commissioner	Hall	Nathaniel										A		A	P	P		P	P	2	4	6	33.33%
General Public	King	Keisha	A	P	A	P	A	P	A	P	P	A		P	P	A		P	A	10	17	27	37.04%
Engineer (Gen. Pub.)	McVey	Rick	P	P	P	P	A	P	A	P	P	P		P	A	P		P	P	6	46	52	11.54%
Physician (Gen.Pub.)	Page	Cecil	P	P	P	A	A	A	P	P	P	A		P	P	P		A	P	7	25	32	21.88%
Dentist	Satterfield	Rose						P	A	P	P	P		P	P	P		P	P	1	9	10	10.00%
General Public	Wallace	Sally	P	A	P	P	P	P	P	P	A	P		A	A	A		A	A	9	11	20	45.00%
Registered Nurse (Gen Pub)	Kupit	Sharon																P	P	0	2	2	0.00%

Stanford Report, May 2, 2007

Exposure to secondhand tobacco smoke in outdoor settings a risk, study shows

BY MARK SHWARTZ

L.A. Cicero

Wayne Ott and Neil Klepeis were members of a team of Stanford researchers who conducted the first in-depth study on how smoking affects air quality at sidewalk cafés, park benches and other outdoor locations.

Tens of thousands of Americans die each year from secondhand tobacco smoke, according to a 2006 report by the U.S. Surgeon General. While the health risks associated with indoor secondhand smoke are well documented, little research has been done on exposure to toxic tobacco fumes outdoors.

Now, Stanford University researchers have conducted the first in-depth study on how smoking affects air quality at sidewalk cafés, park benches and other outdoor locations. Writing in the May issue of the *Journal of the Air and Waste Management Association* (*JAWMA*), the Stanford team concluded that a non-smoker sitting a few feet downwind from a smoldering cigarette is likely to be exposed to substantial levels of contaminated air for brief periods of time.

"Some folks have expressed the opinion that exposure to outdoor tobacco smoke is insignificant, because it dissipates quickly into the air," said Neil Klepeis, assistant professor (consulting) of civil and environmental engineering at Stanford and lead author of the study. "But our findings show that a person sitting or standing next to a smoker outdoors can breathe in wisps of smoke that are many times more concentrated than normal background air pollution levels."

Klepeis pointed to the 2006 Surgeon General's report, which found that even brief exposures to secondhand smoke may have adverse effects on the heart and respiratory systems and increase the severity of asthma attacks, especially in children.

"We were surprised to discover that being within a few feet of a smoker outdoors may expose you to air pollution levels that are comparable, on average, to indoor levels that we measured in previous studies of homes and taverns," said Wayne Ott, professor (consulting) of civil and environmental engineering at Stanford and co-author of the *JAWMA* study. "For example, if you're at a sidewalk café, and you sit within 18 inches of a person who smokes two cigarettes over the course of an hour, your exposure to secondhand smoke could be the same as if you sat one hour inside a tavern with smokers. Based on our findings, a child in close proximity to adult smokers at a backyard party also could receive substantial exposure to secondhand smoke."

Unlike indoor tobacco smoke, which can persist for hours, the researchers found that outdoor smoke disappears rapidly when a cigarette is extinguished. "Our data also show that if you move about six feet away from an outdoor smoker, your exposure levels are much lower," Klepeis added.

The public has become increasingly concerned about the effects of outdoor smoking, Ott noted. More than 700 state and local governments have passed laws restricting outdoor smoking at playgrounds, building entrances and other public areas, according to the American Nonsmokers' Rights Foundation. Some of the strictest ordinances are in California. The city of Santa Monica, for example, recently banned smoking at parks, beaches, automatic teller machines, theater lines, open-air restaurants and other outdoor locations.

"Throughout the country, cities and counties are looking at various laws against outdoor smoking, and some of the proposals are pretty drastic," Ott said. "The problem is that until now, there have been virtually no scientific data to justify such restrictions. In fact, our paper is the first study on outdoor smoking to be published in a peer-reviewed scientific journal."

Particulate matter

In the study, the researchers used portable electronic monitors to make precise measurements of toxic airborne particles emitted from cigarettes at 10 sites near the Stanford campus. "We wanted to quantify the potential level of exposure to outdoor tobacco smoke that could occur in everyday settings," Klepeis said. "To do this, we used five different, state-of-the-art instruments to measure secondhand smoke at parks, open-air cafés, sidewalks and outdoor pubs where smokers were present."

Each instrument was calibrated to measure an airborne pollutant known as particulate matter-2.5 (PM2.5), which consists of thousands of microscopic particles that are less than 2.5 micrometers in width—about 30 times narrower than a human hair.

"PM2.5 is a toxic pollutant produced by cigarettes, wood-burning stoves, diesel engines and other forms of combustion," Ott explained. "It contains benzo(a)pyrene, a carcinogen, and many other toxic chemicals that can penetrate deep inside the lungs."

According to the Environmental Protection Agency, exposure to PM2.5 can lead to serious health problems, including asthma attacks, chronic bronchitis, irregular heartbeat, nonfatal heart attacks and even premature death in people with heart or lung disease. The current EPA ambient air standard for PM2.5 is 35 micrograms per cubic meter of air averaged over 24 hours. Levels that exceed 35 micrograms are considered unhealthy. "However, since tobacco smoke contains many toxic components, including carcinogens, it may be even less healthy than typical ambient air pollution," Klepeis noted.

Test results

To measure PM2.5 levels in secondhand smoke, the researchers placed the instruments near actual smokers in different open-air environments. "We also performed controlled experiments with burning cigarettes, which allowed us to make precise measurements of PM2.5 levels at different distances," Klepeis said.

The results were clear: The closer you are to an outdoor smoker, the higher your risk of exposure.

"A typical cigarette lasts about 10 minutes," Klepeis said. "We found that if you're within two feet downwind of a smoker, you may be exposed to pollutant concentrations that exceed 500 micrograms of PM2.5 over that 10-minute period. If you're exposed multiple times to multiple cigarettes over several hours in an outdoor pub, it would be possible to get a daily average of 35 micrograms or more, which exceeds the current EPA outdoor standard."

Outdoor tobacco smoke consists of brief plumes that sometimes exceed 1,000 micrograms, Klepeis added. "On the other hand, clean air typically contains less than 20 micrograms of PM2.5," he said. "Therefore, a person near an outdoor smoker might inhale a breath with 50 times more toxic material than in the surrounding unpolluted air."

However, the researchers found that air quality improved as they moved away from the smoker. "These results show what common sense would suggest—when you're within a few feet downwind of a smoker, you get exposed," Ott explained. "But likewise, when you go a little distance or stay upwind, the exposure goes way down. If there's just one smoker, and you can sit six feet away, you would have little problem. At the same time, if there are a lot of smokers nearby, you may be exposed to very high levels of secondhand smoke. So this thing that critics have been dismissing as trivial is not."

Added Klepeis: "If people realize that being near outdoor smokers can result in potentially large exposures to toxic air pollution, they may decide they do not wish to be exposed in a variety of outdoor settings. This realization may lead to an increased number of smoking bans in public locations."

The study also was co-authored by Paul Switzer, professor of statistics and of geological and environmental sciences at Stanford. The research was supported by grants from the State of California and the Flight Attendant Medical Research Institute in Miami.

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Outdoor Smoking Areas
Does the Science Support a Ban?

Inhaling secondhand cigarette smoke (SHS), also known as passive smoking, can cause cancer and respiratory and cardiovascular disease.[1] Indoor smoking is banned at many public places and worksites; at others, smoking areas have been moved outdoors. But is keeping cigarette smoke outdoors enough to dissipate the health risks associated with SHS exposure? A review in this issue of *EHP* explores the current state of knowledge about outdoor SHS exposure.[2]

"Outdoor SHS is an emerging topic in the tobacco control community," says review coauthor Esteve Fernández, an epidemiologist at the Institut Català d'Oncologia–ICO in Barcelona, Spain. Surveys indicate that public support for banning outdoor smoking has increased in recent years,[3] although some opponents argue that such bans are unsustainable, unduly restrictive, and unsupported by the evidence to date.[4,5] To impose outdoor smoking laws, tobacco control advocates need "evidence-based results from valid and representative epidemiological studies about levels of SHS in different outdoor areas," says Fernández.

For the current review Fernández and colleagues analyzed data from 18 scientific papers published between 2005 and 2012, which measured SHS exposure at outdoor settings in Europe, the United States, Canada, Australia, and New Zealand. Sites included hospitality venues (e.g., restaurants and bars), airports, parks, streets, entrances to buildings, and college campuses.[2]

In most of the studies reviewed, the main marker for SHS was fine particulate matter ($PM_{2.5}$). Measured average levels of $PM_{2.5}$ ranged from 8.32 μg/m³ to 124 μg/m³ at outdoor hospitality venues where smokers were present, and from 4.6 μg/m³ to 17.8 μg/m³ at other outdoor settings. Individual point measurements exceeded 1,000 μg/m³ in some cases. Densely packed smokers, partially enclosed outdoor areas, low wind speeds, and closeness to people smoking all contributed to high levels of outdoor SHS. Smoke-free indoor settings near outdoor smoking areas also had elevated $PM_{2.5}$ levels, with mean concentrations ranging from 4 μg/m³ to 120.51 μg/m³.

Measured levels exceeded the median level for irritation from secondhand smoke $PM_{2.5}$ reported for brief exposures.[6] Most studies detected outdoor concentrations of $PM_{2.5}$ exceeding 10 μg/m³, the annual outdoor average that the World Health Organization sets as the lowest cutoff at which lung cancer and cardiopulmonary deaths are likely to increase[7]—a particular concern for chronically exposed hospitality workers. "Although outdoor SHS levels are more transient than indoor levels, and can quickly drop to background levels in the absence of active smoking," the authors wrote, "potential health effects of these exposures merit consideration and need to be further studied."

The review shows that "depending on the microenvironment, you can get very high levels of secondhand smoke outdoors. A cigarette is a point source of outdoor pollution," says Stanton Glantz, director of the Center for Tobacco Control Research and Education at the University of California, San Francisco. Fernández's compilation of data scattered across different journals "will be useful to policy makers. The evidence points to banning outdoor SHS where smokers congregate," Glantz says.

The compiled data also highlight the need for better standardized methods in future studies. $PM_{2.5}$, although cheap and easy to measure, is a common traffic pollutant and not specific to SHS. More precise and sensitive markers such as salivary cotinine (a metabolic by-product of nicotine) better reflect personal exposure to SHS.[2] An ideal study would combine both environmental markers such as airborne nicotine and biological markers such as cotinine in saliva. "Such studies, although more complicated to implement, would be of extreme relevance," says Fernández.

SHS contains more than 7,000 chemicals, including about 70 known and probable carcinogens, as well as toxicants and irritants.[1] In the United States, an estimated 46,000 premature deaths from heart disease and 3,400 lung cancer deaths in nonsmokers are caused by SHS exposure yearly.[1] Gene microarray scans of cells lining the small airways suggest there are no safe levels of SHS exposure. One study showed that even very low exposure was associated with changes in gene expression that may reflect early smoking-induced damage, potentially setting the stage for lung disease and cancer.[8]

Carol Potera, based in Montana, has written for *EHP* since 1996. She also writes for *Microbe*, *Genetic Engineering News*, and the *American Journal of Nursing*.

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Although more transient than indoor levels, outdoor levels of secondhand smoke can be quite high, depending on the setting.
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Study Raises Concerns About Outdoor Second-Hand Smoke

Nov. 19, 2009 — Indoor smoking bans have forced smokers at bars and restaurants onto outdoor patios, but a new University of Georgia study in collaboration with the Centers for Disease Control and Prevention suggests that these outdoor smoking areas might be creating a new health hazard.

The study, thought to be the first to assess levels of a nicotine byproduct known as cotinine in nonsmokers exposed to second-hand smoke outdoors, found levels up to 162 percent greater than in the control group. The results appear in the November issue of the *Journal of Occupational and Environmental Hygiene*.

"Indoor smoking bans have helped to create more of these outdoor environments where people are exposed to secondhand smoke," said study co-author Luke Naeher, associate professor in the UGA College of Public Health. "We know from our previous study that there are measurable airborne levels of secondhand smoke in these environments, and we know from this study that we can measure internal exposure.

"Secondhand smoke contains several known carcinogens and the current thinking is that there is no safe level of exposure," he added. "So the levels that we are seeing are a potential public health issue."

Athens-Clarke County, Ga., enacted an indoor smoking ban in 2005, providing Naeher and his colleagues and ideal environment for their study. The team recruited 20 non-smoking adults and placed them in one of three environments: outside bars, outside restaurants and, for the control group, outside the UGA main library. Immediately before and after the six-hour study period, the volunteers gave a saliva sample that was tested for levels of cotinine, a byproduct of nicotine and a commonly used marker of tobacco exposure.

The team found an average increase in cotinine of 162 percent for the volunteers stationed at outdoor seating and standing areas at bars, a 102 percent increase for those outside of restaurants and a 16 percent increase for the control group near the library.

Naeher acknowledges that an exposure of six-hours is greater than what an average patron would experience but said that employees can be exposed for even longer periods.

"Anyone who works in that environment -- waitresses, waiters or bouncers -- may be there for up to six hours or longer," Naeher said. "Across the country, a large number of people are occupationally exposed to second-hand smoke in this way."

Studies that measured health outcomes following indoor smoking bans have credited the bans with lowering rates of heart attacks and respiratory illness, but Naeher said that the health impacts of outdoor second-hand smoke are still unknown.

In Naeher's study, cotinine levels in the volunteers at the bar setting saw their levels increase from an average pre-exposure level of 0.069 ng/ml (nanograms per milliliter) to an average post-exposure level of 0.182 ng/ml. The maximum value observed, however, was 0.959 ng/ml. To put that number into context, a widely cited study has determined that an average cotinine level of 0.4 ng/ml increases lung cancer deaths by 1 for every 1,000 people and increases heart disease deaths by 1 for every 100 people.

Still, the researchers caution that it's too early to draw policy conclusions from their findings. Cotinine is a marker of exposure to tobacco, Naeher said, but is not a carcinogen. The team is currently planning a study that would measure levels of a molecule known as NNAL, which is a marker of tobacco exposure and a known carcinogen, in people exposed to second-hand smoke outdoors.

"Our study suggests that there is reason to be concerned about second-hand smoke levels outdoors," said study co-author Gideon St. Helen, who is pursuing his Ph.D. through the university's Interdisciplinary Toxicology Program, "and our findings are an incentive for us to do further studies to see what the effects of those levels are."

Story Source:

The above story is based on materials provided by University of Georgia, via EurekAlert!, a service of AAAS.

Note: Materials may be edited for content and length. For further information, please contact the source cited above.

HUMAN NATURE | SCIENCE, TECHNOLOGY, AND LIFE. | SEPT. 17 2009 10:30 AM

Secondhand Smokescreen

Are outdoor smoking bans scientifically justified?

By William Saletan

Smokers in New York

Do studies of secondhand smoke justify bans on outdoor smoking?

In response to Tuesday's article about the crackdown in New York, many of you made good arguments for and against the proposed restrictions. The best post came from James Repace, a biophysicist and former EPA staff scientist who does actual research on secondhand smoke. He's offering what we need much more of on the Internet: facts.

In Slate's Fray, Repace says I'm wrong about outdoor smoke:

> Mr. Saletan states in part: "Studies have proved that secondhand smoke is harmful. But those studies aren't conducted in wide-open spaces." Sorry, Mr. Saletan, you have not done your homework. The State of California's Air Resources Board (ARB) that regulates California's outdoor air did a massive report in 2006 which resulted in secondhand smoke [SHS] being declared a "toxic air contaminant." There are several published scientific studies of SHS in the outdoor air in addition to this report, and they are reviewed in a paper listed on my website < www.repace.com > under recent reports. These reports show that outdoor SHS may often be as high as indoor SHS in proximity to smokers. ... I suggest that you revisit this issue, and see if you want to retract your erroneous statement.

So let's revisit the issue. Let's look at those studies.

In a fact sheet summarizing the studies, Repace writes:

> The California Air Resources Board study (CARB, 2006), measured OTS [outdoor tobacco smoke] nicotine concentrations outside an airport, college, government center, office complex, and amusement park. CARB found that at these typical outdoor locations, Californians may be exposed to OTS levels as high as indoor SHS concentrations. ...
>
> Klepeis, et al. (2007) measured OTS respirable particle concentrations in outdoor patios, on airport and city sidewalks, and in parks. They also conducted controlled experiments of SHS indoors and OTS outdoors. Klepeis et al. (2007) found that mean SHS particle concentrations outdoors can be comparable to SHS indoors.

Both studies were done in California. Let's start with the CARB report. Here are some relevant passages:

> 1) It is difficult to measure ETS removal rates in outdoor settings since outdoor conditions are highly variable and change rapidly. (Page III-13)
>
> 2) [C]igars and cigarettes, the primary source of ETS [environmental tobacco smoke], are smaller sources that emit pollutants near people and thereby exposures to ETS are very localized. (Page II-4)
>
> 3) Overall, the results indicate that concentrations of nicotine correspond to the number of smokers in the smoking areas, although factors such as the size of the smoking area and wind speed affected the results. (Page II-3)
>
> 4) For each sampling period, two samplers were situated adjacent to the outdoor smoking area, with a third sampler located away from the smoking area as a background sampler in the expected upwind direction. ... At most sites, the location of the background monitors, due to physical obstacles and/or meteorological conditions, were close to the smoking areas. ... However, even at the background site locations, background concentrations were substantially lower than measured in the smoking areas. (Pages V-7 to V-8)

So Repace is correct that secondhand smoke has been studied outdoors. But the CARB study underscores what I wrote: "[T]hose studies aren't conducted in wide-open spaces. They can't cover the whole atmosphere." The passages quoted here confirm that 1) it's hard to measure smoke dynamics outdoors because conditions change rapidly; 2) exposure levels are "very localized"; 3) wind, area size, and number of smokers affect the degree of exposure; and 4) even close to a designated smoking area, you can avoid exposure by being upwind. At the amusement park, for example, the difference in exposure was a factor of 25.

Now let's look at the Klepeis study:

> 1) average OTS concentrations measured ... during visits to outdoor patios that were enclosed by fences or walls ... were 50% and 43% higher, respectively, than those observed in more open areas. ... (Page 10)
>
> 2) We observed a clear reduction in OTS levels as the distance from a tobacco source increased. Generally, average levels within 0.5 m from a single cigarette source were quite high and comparable to indoor levels, and OTS levels at distances greater than 1 or 2m were much lower. (Page 12)
>
> 3) At distances larger than 2 m, levels near single cigarettes were generally close to background. ... [If] one spends time downwind from a smoker, then moving to a distance of more than 2m can reduce the likelihood of experiencing elevated particle exposure due to OTS. (Page 14)

Again, the data confirm common sense. The more open the space and the farther away you are, the lower your smoke exposure. To get the kind of exposure you'd suffer indoors, you have to stand within two feet of the smoker. Move seven feet away, and you're "close to background," i.e., breathing normal air. I recommend greater distance than that, just to be safe. But you don't need to ban smoking throughout Central Park.

Repace offers additional arguments for outdoor smoking bans. He points out that "there are millions of asthmatics in this country" and says outdoor smoke levels can be "high enough to trigger an asthmatic attack in susceptible persons." He also contends that "most nonsmokers find SHS to be a nuisance. Just as noise and dog droppings are regulated in public spaces, governments have the right and the obligation to protect the susceptible from the stupid."

If you want to argue for parkwide smoking bans based on asthma or on an analogy to noise pollution, go ahead and make that case. But let's not cloud that debate by invoking the general harm of secondhand smoke. Studies of secondhand smoke have indeed moved outdoors. Their findings support restrictions on lighting up within a few feet of other people. But they don't warrant more than that.

CASWELL COUNTY BOARD OF HEALTH RULE
A RULE TO PROHIBIT SMOKING WITHIN FIFTY (50) FEET OF THE CASWELL COUNTY HEALTH DEPARTMENT

WHEREAS, according to the Centers for Disease Control and Prevention (CDC), tobacco use and secondhand smoke exposure are leading preventable causes of illness and premature death in North Carolina and the nation; and

WHEREAS, in 2006, a report issued by the United States Surgeon General stated that the scientific evidence indicates that there is no risk-free level of exposure to secondhand smoke and that secondhand smoke has been proven to cause cancer, heart disease, and asthma attacks in both smokers and nonsmokers; and

WHEREAS, research indicates that, during active smoking, outdoor levels of secondhand smoke may be as high as indoor levels and may pose a health risk for people in close proximity (such as those sitting beside someone on a park bench or children accompanying a smoking parent or guardian); and

WHEREAS, on January 2, 2010, "An Act To Prohibit Smoking In Certain Public Places And Certain Places Of Employment," Session Law 2009-27, became effective, authorizing local governments to adopt and enforce ordinances "that are more restrictive than State law and that apply in local government buildings, on local government grounds, in local vehicles, or in public places;" and

WHEREAS, pursuant to G.S. 130A-39(a), local boards of health have the responsibility to protect and promote the public's health and to adopt rules necessary for that purpose; and

WHEREAS, the Caswell County Board of Health is committed to providing a safe and healthy workplace for Health Department employees and a safe and healthy environment for the visiting public; and

WHEREAS, the Caswell County of Board of Health provides support to employees and residents who want to quit the use of tobacco products. Employees and residents are also encouraged to talk to their health care provider about quitting, ask about appropriate pharmacotherapy available through their health insurance plan or employee's insurer, and to use the free quitting support services of the North Carolina Tobacco Use Quitline at 1-800-QUIT-NOW (1-800-784-8669); and

WHEREAS, the Caswell County Board of Health previously adopted a rule in July 2008 prohibiting smoking inside all county government and municipal buildings and vehicles that is not changed by this rule; and

WHEREAS, the Caswell County Board of Health finds and declares that, in order to protect the public health and welfare, it is in the best interests of the citizens of Caswell County to adopt a Rule expanding the prohibition of smoking to include the area and grounds within fifty (50) feet of the Caswell County Health Department.

NOW, THEREFORE, THE CASWELL COUNTY BOARD OF HEALTH ADOPTS THE FOLLOWING RULES:

Section 1. Authority

This Rule is enacted pursuant to G.S. 130A-498 and 130A-39(a).

Section 2. Definitions

The following definitions are applicable to this Rule.

1. "Caswell County Health Department". – Any building owned, leased as lessor, or the area leased as lessee and occupied by employees of the Caswell County Health Department.
2. "Grounds". – An unenclosed area owned, leased or occupied by the Caswell County Health Department.
3. "Smoking". – The use or possession of a lighted cigarette, lighted cigar, lighted pipe, or any other lighted tobacco product.

Section 3. Areas in Which Smoking and the Use of Tobacco Products are Prohibited

1. This rule extends the area where smoking is prohibited to the grounds within fifty (50) feet of the Caswell County Health Department.

Section 4. Implementation Requirements

The Caswell County Health Department shall:

1. Post signs that meet all the requirements in Section 5 of this Rule.

2. Remove all ashtrays and other smoking receptacles from the area in which smoking is prohibited, except for ashtrays and receptacles for sale and not intended for use on the premises.
3. Direct a person who is smoking in a prohibited area to extinguish the lighted tobacco product and, if the person does not comply, ask the person to leave the premises.
4. Contact the County sheriff department if a person in violation refuses to leave the premises.

Section 5. Signage

The signs required by Section 4 must:

1. State in English that smoking is prohibited and include the universal "No Smoking symbol.
2. Be of sufficient size to be clearly legible to a person of normal vision, and be conspicuously posted.
3. Be posted at each entrance to the Caswell County Health Department and in other locations reasonably calculated to inform employees and the public of the prohibition.
4. Be posted on County grounds in locations and at intervals reasonably calculated to inform employees and the public of the prohibition.

Section 6. Enforcement and Penalties

1. Violations by persons smoking in prohibited areas. Following oral or written notice by the person in charge of an area described in Section 3 or his or her designee, failure to cease smoking or tobacco use constitutes an infraction punishable by a fine of not more than fifty dollars ($50.00). A citation may be issued by a sworn law enforcement officer. Conviction of an infraction under this section has no consequence other than payment of a penalty, and no court costs may be assessed.
2. Additional sanctions for employees. In addition to any penalty under subsection (a), employees of the Caswell County Health Department who violate this Rule shall be subject to disciplinary action consistent with their respective employer's human resources policies.

Section 7. Public Education

The Caswell County Health Department shall engage in an ongoing program to explain and clarify the purposes and requirements of this Rule to citizens affected by it, and to guide operators and managers in their compliance with it.

Section 8. Effective Date

These rules shall become effective _____ upon adoption by the Caswell County Board of Health and approval of rules by an ordinance adopted by the Caswell County Board of County Commissioners.

Adopted this _____ day of _____, 20___.

_____
Chairperson, Caswell County Board of Health

ATTEST:

_____
Clerk to the Caswell County Board of Health

Approved as to form:

_____
Caswell County Attorney

Caswell County Board of Health Rule

Regulation of Smoking Products in local Government Buildings and Vehicles

Section I. Title

This regulation shall be entitled Smoking Control Rules In Caswell County/Municipal Buildings

Section II. Findings and Purpose

WHEREAS, tobacco use is the number one preventable cause of premature death in North Carolina and the nation; and

WHEREAS, secondhand smoke has been proven to cause cancer, heart disease, and asthma in both smoker and nonsmoker; and,

WHEREAS, the 2006 Surgeon General's Report on the health consequences of involuntary exposure to tobacco smoke states that the scientific evidence indicates that there is no risk-free level of exposure to secondhand smoke; and,

WHEREAS, the 2006 Surgeon General's Report documents that separating smokers from nonsmokers, cleaning the air and ventilating smoke cannot eliminate exposure to secondhand smoke, and only eliminating indoor smoking can fully protect nonsmokers from exposure to secondhand smoke; and,

WHEREAS, the Centers for Disease Control and Prevention advises that all individuals with coronary heart disease or known risk factors for coronary heart disease should avoid all indoor environments that permit smoking; and,

WHEREAS, exposure to secondhand smoke is expensive, costing the nation $10 billion per year, $5 billion in direct medical care costs, and $5 billion in indirect costs according to the 2005 Society of Actuaries; and,

WHEREAS, local governments, including Boards of Health, have authority under G.S. 130A-498 to adopt local ordinances, laws, or rules restricting all smoking in local government buildings and public transportation vehicles; and,

WHEREAS, the Caswell County Board of Health recognizes the health risks of smoking and secondhand smoke and determines that the purpose of this rule regulating smoking is to minimize the harmful effects of tobacco smoke among staff and the public and eliminate secondhand smoke exposure for staff and the public in those buildings controlled by Caswell County and the towns of Yanceyville and Milton;

NOW, THEREFORE, THE CASWELL COUNTY BOARD OF HEALTH ADOPTS THE FOLLOWING RULES:

Section III. Definitions

"Smoker" – A person who is smoking.

"Smoking" – The use or possession of a lighted cigarette, lighted cigar, lighted pipe, or any other lighted tobacco product.

Section IV. Smoking Prohibited Inside Local Government Buildings and Transportation Vehicles

Smoking is prohibited in all of the following:

(a) Buildings that are owned by Caswell County or any municipality within Caswell County.

(b) Buildings that are leased as lessor by Caswell County or any municipality within Caswell County.

(c) Buildings or areas of buildings that are leased as lessee and occupied by Caswell County or any municipality within Caswell County.

(d) Public transportation vehicles used by the public and owned or leased by Caswell County or any municipality within Caswell County.

Section V. Signage

(a) Persons in charge of buildings identified in Section IV shall post signs at all entrances and exits explaining the prohibition of smoking. Signs may be posted in other areas of the buildings as well. For example, signs may be posted in other areas in the building where smoking is likely, such as restrooms and dining areas.

(b) Persons in charge of vehicles identified in Section IV shall post signs in the vehicles explaining the prohibition of smoking. The signs must be displayed in areas where passengers will be able to see the signs but the placement of the signs must not interfere with the safe operation of the vehicle.

(c) The signs required by subsections (a) and (b) of this Section must use clear and unambiguous language to convey the prohibition of smoking. The signs may include language such as "SMOKING IS PROHIBITED IN THIS BUILDING," or "SMOKING IS PROHIBITED IN THIS VEHICLE."

(d) Persons in charge of buildings where smoking is prohibited by this rule shall remove all publicly available ashtrays from the building.

(e) Persons in charge of buildings and vehicles identified in Section IV must determine whether signs should be posted in languages other than English.

Section VI. Compliance and Penalties

The person in charge of a building or vehicle identified in Section IV or his or her designee who sees an individual (other than an employee) smoking in violation of this ordinance, must ask that individual to stop smoking. If, after having been asked to stop smoking, the individual continues to smoke, the person in charge shall issue a formal warning and must ask the individual to leave the building.

The second and subsequent violations are Class 1 misdemeanors pursuant to G.S. 130A-25 [Note: G.S. 14-3 provides that all unclassified misdemeanors are Class 1 misdemeanors.] and are punishable by a fine not to exceed $200.00 per violation.

Employees who violate this rule may be subject to sanctions consistent with Caswell County or Municipality human resources policies.

Section VII. Effective Date

These rules shall become effective August 11th, 2008.

Adopted this 29th day of July, 2008 by the Caswell County Board of Health.

_____
Caswell County Health Director

_____
Caswell County Board of Health

ENVIRONMENTAL HEALTH MONTHLY STATISTICAL REPORT
SEPT 2013

ACTIVITY DESCRIPTION	#	COMMENTS
FOOD, LODGING, AND INSTITUTIONAL		
Field Visits	33	
Inspections	19	
Permits Issued-New or Revised Business		
Permits Suspended/Revoked-Business Closed		
Food Service Plan Review		
Consultation Contacts	37	
Complaints		
ON SITE WASTE WATER PROGRAM		
Field Visits	39	
Soil/Site Evaluations	8	
Improvement Permits	4	
Construction Authorizations	5	
Operation Permits	2	
Denials	1	
Failing System Evaluations	1	
IP, CA, & OP Permits-Repairs	1	
Existing System Inspections/Authorizations	9	
OSWW Violations Notices	1	
Consultation Contacts	41	
Migrant Housing Inspections		
Pending Applications-Not Addressed		
Complaints	3	
WATER SAMPLES		
Field Visits	31	
Bacteria Samples	15	
Chemical Samples	10	
Petroleum Samples		
Pesticide Samples		
Nitrate/Nitrite Samples	4	
Consultation Contacts	27	
Migrant Housing Inspections		
WELL PERMITS		
Well Site Field Visits	30	
Number of Permits (New)	11	
Number of Permits(Repair)	6	
Grout Inspections	16	
Well Head Inspections	8	
Well Abandonment Inspections		
Bore Hole Camera Inspections	5	
Consultation Contacts	38	
Complaints		
SWIMMING POOLS		
Permits/Inspections		
OTHER		
Clerical Time (hours)	35	
Phone Contacts (Documented)	194	
Office Consults (Documented)	31	
Intern Preparation (Matt Maness)	24	
On-Site Program Evaluation	1 day	
Hydraulic Oil Spill Cleanup		
Matt Maness CIT	2 wks	
Donnie Powell & Will Shields-EH Food Code Training	1 day	

Caswell County Environmental Health Statistics - FY 2013-2014								
Service	**JUL**		**AUG**		**SEP**		**YTD TOTAL**	
	#	$	#	$	#	$	#	$
Improvement Permit / Site Evaluation (< 600 gpd & less than 4 bedrooms)	4	600	1	150	7	1,050	12	1,800
Improvement Permit / Site Evaluation for each additional bedroom over 3	1	75			1	75	2	150
Improvement Permit / Site Evaluation (> 600 & < 3000 gpd)							0	0
Improvement Permit / Site Evaluation (> 3000 gpd)							0	0
New Construction Authorization & Operating Permit (Type I & II)	2	300	3	450	3	450	8	1,200
New Construction Authorization & Operating Permit (Type III)							0	0
New Construction Authorization & Operating Permit (Type IV)							0	0
New Construction Authorization & Operating Permit (Type V)							0	0
Expansion or Repair of OSWW Treatment System (< 600 gpd)	1	50	4	200	2	100	7	350
Expansion or Repair of OSWW Treatment System (> 600 & < 3000 gpd)							0	0
Expansion or Repair of OSWW Treatment System (> 3000 gpd)							0	0
Inspection of Existing OSWW Treatment System (Type I & II Addition)	3	150	1	50	3	150	7	350
Inspection of Existing OSWW Treatment System (Type I & II Change Out)	1	100	2	200	6	600	9	900
Inspection of Existing OSWW Treatment System (5 yr Type IIIb Inspection)							0	0
Inspection of Existing OSWW Treatment System (3 yr Type IV Inspection)							0	0
Inspection of Existing OSWW Treatment System (Annual Type V Inspection)							0	0
Well Permit	5	1,500	6	1,800	6	1,800	17	5,100
Well Camera Evaluation							0	0
Well Repair Permit	2	400	2	400	5	1,000	9	1,800
Bacteria Water Sample					3	150	3	150
Chemical Water Sample	1	50			1	50	2	100
Petroleum Water Sample			1	50			1	50
Pesticides Water Sample							0	0
Nitrate/Nitrite Sample							0	0
Water Sample Revisit							0	0
Swimming Pool Annual Permit							0	0
Swimming Pool Plan Review							0	0
Restaurant Plan Review	1	200					1	200
Tattoo Artist Permit Annual Fee							0	0
Five Sample Package	1	170	1	170			2	340
Water Sample Revisit-additional test							0	0
Bad Check							0	0
Temporary Food Stand	1	75			1	75	2	150
Returned Check							0	0
	23	3,670	21	3,470	38	5,500	82	12,640

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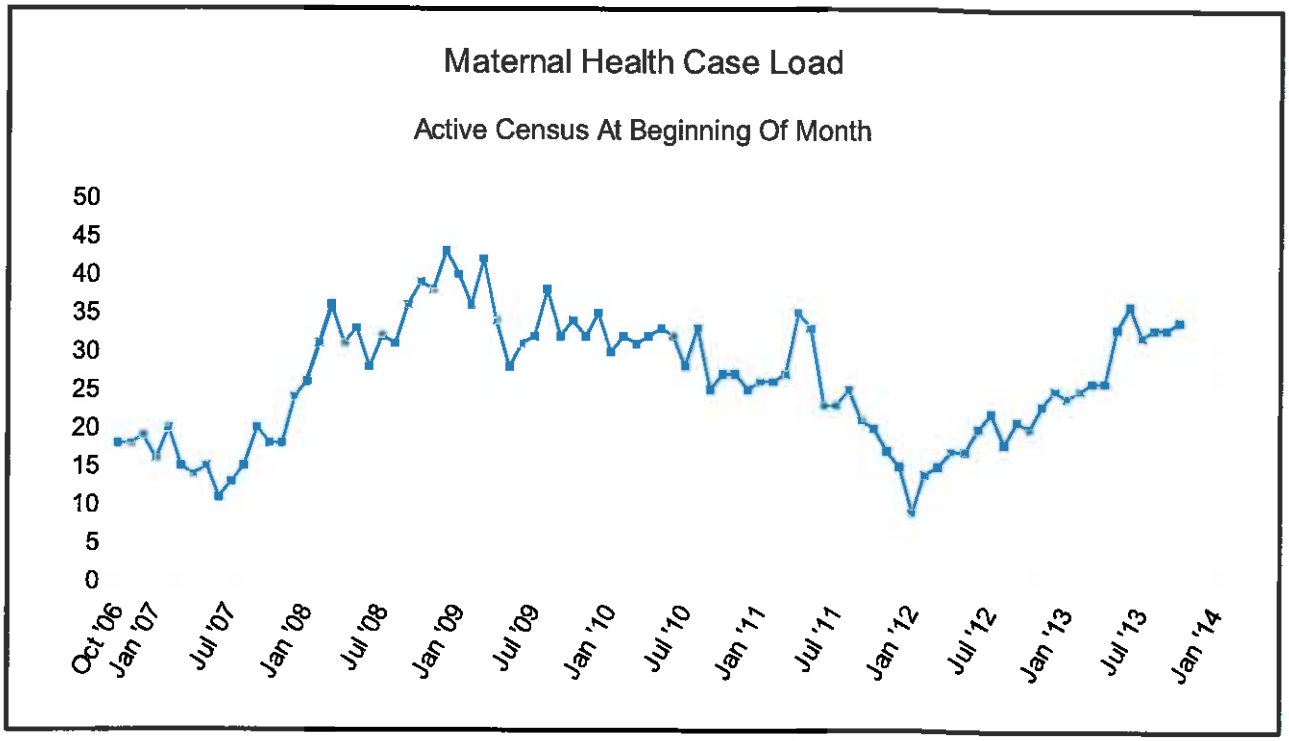
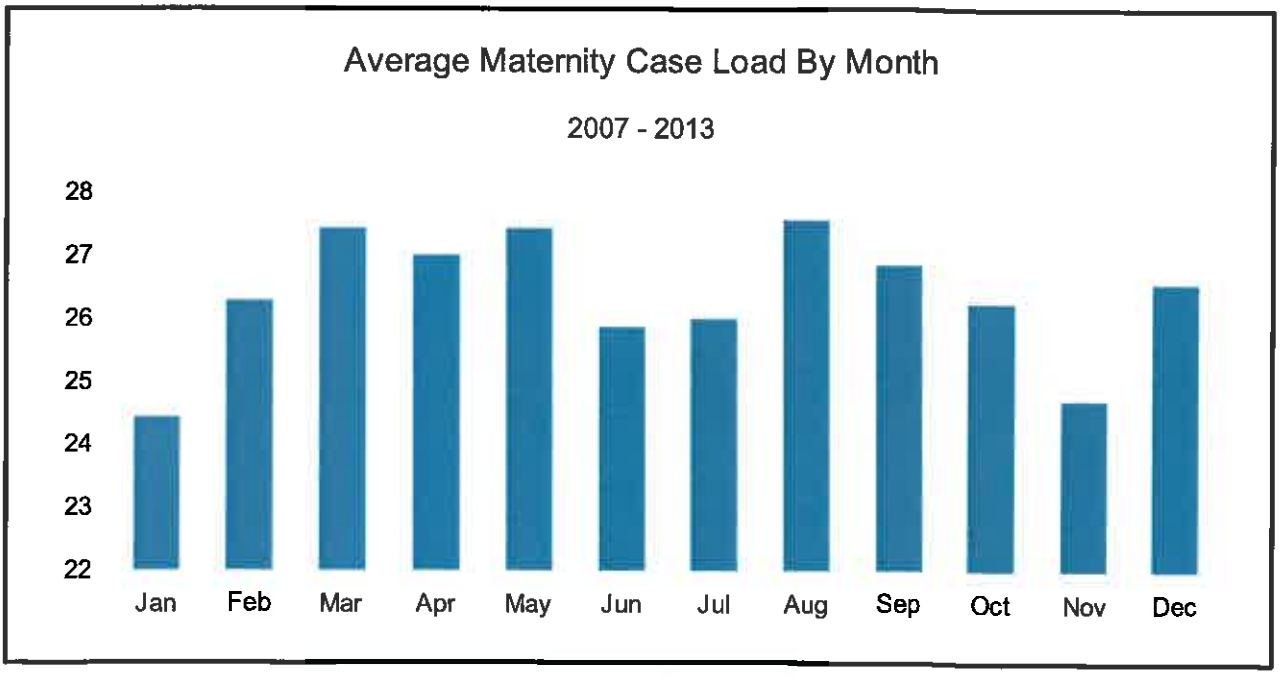
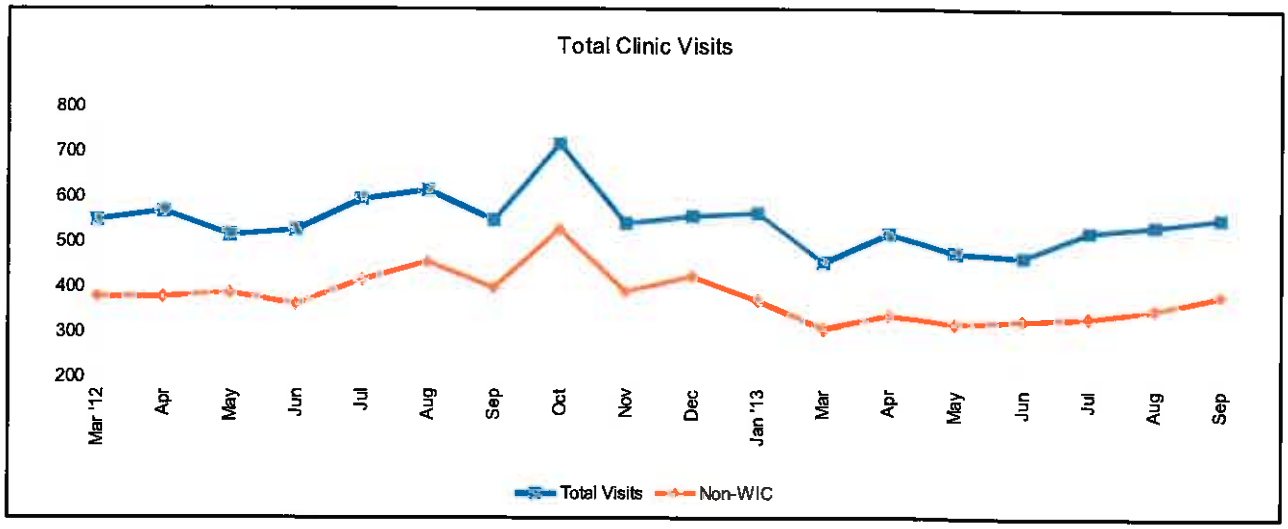
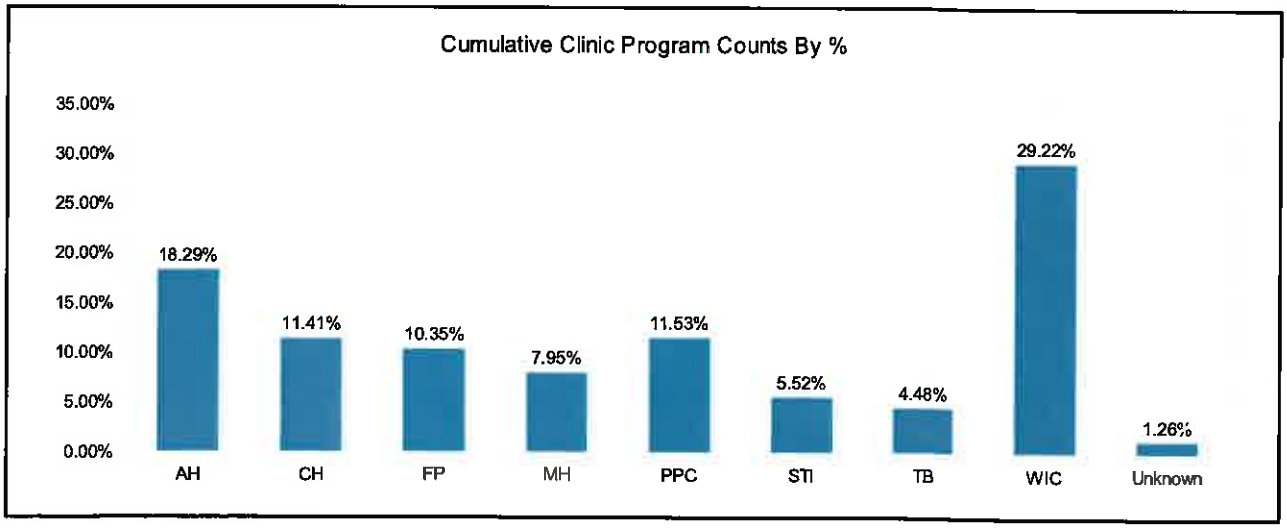

Maternal Health Case Load
Active Census At Beginning Of Month
50
45
40
35
30
25
20
15
10
5
0
Oct '06
Jan '07
Jul '07
Jan '08
Jul '08
Jan '09
Jul '09
Jan '10
Jul '10
Jan '11
Jul '11
Jan '12
Jul '12
Jan '13
Jul '13
Jan '14


Average Maternity Case Load By Month
2007 - 2013
28
27
26
25
24
23
22
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Caswell County Health Dept Clinic Counts By Program And Month

Area	Mar '12	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	%
AH	99	102	93	98	90	119	123	179	116	116	83	62	81	85	90	85	85	90	1796	18.29%
CH	56	57	52	50	76	96	71	69	63	71	70	36	35	38	50	56	85	89	1120	11.41%
FP	57	76	77	68	70	59	52	67	48	67	29	38	45	52	64	56	44	47	1016	10.35%
MH	33	31	36	34	45	53	47	41	38	26	42	41	55	51	47	61	50	50	781	7.95%
PPC	63	55	51	53	61	54	56	96	69	100	102	72	57	54	41	40	46	62	1132	11.53%
STI	37	31	41	31	31	33	21	30	29	28	23	27	25	26	31	30	28	40	542	5.52%
TB	33	26	35	27	41	40	27	45	25	14	21	31	38	13	3	5	12	4	440	4.48%
WIC	171	190	130	165	180	161	151	159	152	135	181	137	179	153	137	183	168	137	2869	29.22%
Unknown								31	1		13	10	2	4	4	7	18	34	124	1.26%
Total Visits	**549**	**568**	**515**	**526**	**594**	**615**	**548**	**717**	**541**	**557**	**564**	**454**	**517**	**476**	**467**	**523**	**536**	**553**	**9,820**	
Non-WIC	378	378	385	361	414	454	397	527	388	422	370	307	336	319	326	333	350	382	6827	



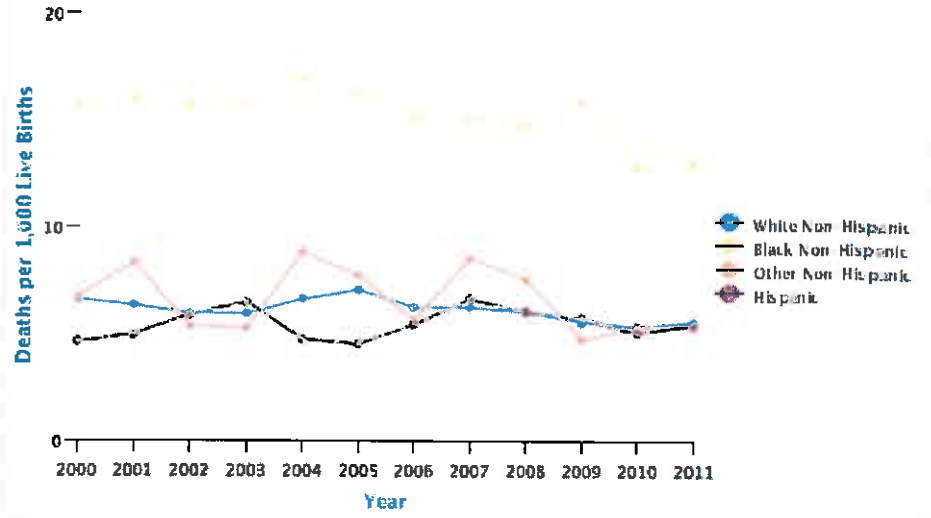


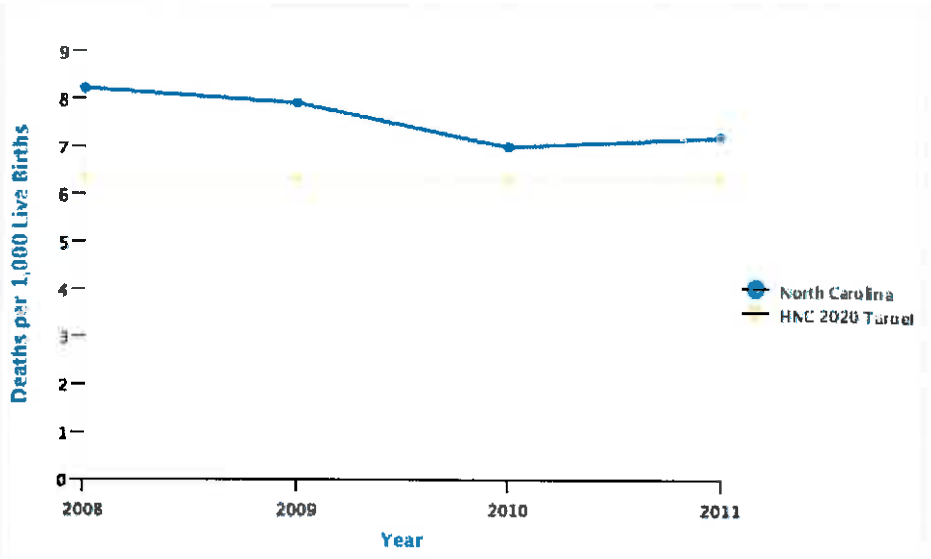
Caswell County Health Department Clinic Counts By Zip Code And Month

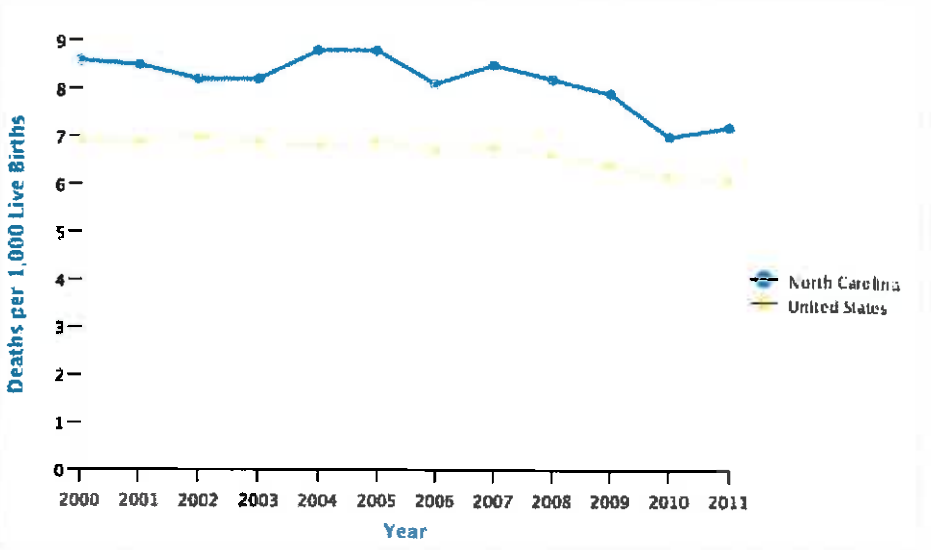
Area	Zip	Mar '12	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	%
Alamance	27201											1								0	0.00%
Ashboro	27203									2					1					3	0.03%
Ashboro	27204						1													1	0.01%
Ashboro	27205														1					1	0.01%
Blanch	27212	29	31	32	28	24	20	25	31	28	25	23	20	24	14	27	22	23	30	456	4.62%
Bonlee	27213																		1	1	0.01%
Brown Summit	27214					1		1	1											3	0.03%
Burlington	27215	1	1	2	2	3	1	4	3	3		2	1	2	4	2	1	1	2	35	0.35%
Burlington	27216	2														1				3	0.03%
Anderson	27217	10	14	16	16	24	29	9	38	14	16	22	14	35	25	20	29	22	22	375	3.80%
Bynum	27228																	1		1	0.01%
Cedar Falls	27230			1																1	0.01%
Cedar Grove	27231			2																2	0.02%
Denton	27239												1							1	0.01%
Eagle Springs	27242								3											3	0.03%
Elon	27244	11	26	16	8	20	7	18	20	15	6	24	19	21	20	11	20	18	11	291	2.95%
Ether	27247																	1		1	0.01%
Gibsonville	27249	11	18	14	22	19	19	17	21	10	17	14	9	13	13	8	13	5	13	256	2.60%
Graham	27253				1	2	2		2				2				1		1	11	0.11%
Haw River	27258								1											1	0.01%
Hillsborough	27278			1																1	0.01%
Eden	27288			1																1	0.01%
Leasburg	27291	12	16	27	9	27	18	16	22	23	15	22	19	27	18	14	21	23	27	356	3.61%
Linwood, NC	27299			1								1								2	0.02%
McLeansville	27301																	2		2	0.02%
Mebane	27302	6	14	8	11	9	7	10	18	8	9	6	13	8	13	17	10	10	17	194	1.97%
Milton	27305	46	32	28	55	46	39	50	65	31	56	37	42	40	32	30	29	35	57	750	7.61%
Mt. Gilead	27306																		1	1	0.01%
Oak Ridge	27310							1												1	0.01%
Pelham	27311	84	88	87	66	94	91	84	113	82	93	79	57	69	85	59	75	71	64	1441	14.61%
Pittsboro	27312			1					2									1		4	0.04%
Prospect Hill	27314	9	16	7	3	9	6	6	10	2	5	14	3	10	5	2	11	6	7	131	1.33%
Providence	27315	39	37	34	41	45	54	29	53	41	43	53	29	29	33	38	46	40	31	715	7.25%
Randleman	27317				1	1				1										3	0.03%
Reidsville	27320	31	33	28	41	37	39	35	36	35	34	47	21	24	21	27	28	40	26	583	5.91%
Robbins	27325							1												1	0.01%
Ruffin	27326	34	17	28	17	22	26	21	30	32	26	26	24	25	14	20	26	22	23	433	4.39%
Sedalia	27342					1														1	0.01%
Semora	27343	11	11	5	10	5	5	4	13	10	6	12	7	7	7	5	9	13	12	152	1.54%
Snow Camp	27349				2		1				1									4	0.04%
Summerfield	27358	1																		1	0.01%
Welcome	27374										1					1				2	0.02%
Wentworth	27375																	1		1	0.01%
Whitsett	27377						1													1	0.01%
Yanceyville	27379	202	200	164	186	194	234	207	222	192	191	198	161	171	156	171	165	189	196	3399	34.47%
Greensboro	27401							1												1	0.01%
Greensboro	27403									2		1				2	1	1	1	8	0.08%
Greensboro	27405	1									1				1					2	0.02%
Greensboro	27406			1					1									1		3	0.03%
Greensboro	27407			1	1			1	2			1				1				7	0.07%
Greensboro	27455								1	1			1		1					4	0.04%
Rougemont	27572											1								1	0.01%
Roxboro	27573	3	1	1	1	2	2	1			1						2		2	16	0.16%
Roxboro	27574				1					3		1				2		1		8	0.08%
Raleigh	27620														1		2			3	0.03%
Durham	27711															1				1	0.01%
Durham	27712						2			1										3	0.03%
Camden	27921														1					1	0.01%
Shelby, NC	28152		1																	1	0.01%
Virginia	24***	6	12	12	4	13	8	7	7	10	14	5	9	9	4	6	11	9	5	151	1.53%
	Unknown			4		2					1	2	1	2	6	1	1		4	24	0.24%
	Total	549	568	522	526	600	612	548	715	546	561	592	453	516	476	466	523	536	553	9,860	100.00%

79% Of Visits Come From The 7 Caswell County Zip Codes That Are Highlighted Above

Infant Mortality Data For North Carolina







2012 NORTH CAROLINA INFANT MORTALITY REPORT, TABLE 2
North Carolina Infant Death Rates (per 1,000 live births) by Perinatal Care Region (PCR) and County of Residence: 2011, 2012, and 2008-2012

	2011 Infant Deaths	2011 Rate	2012 Infant Deaths	2012 Rate	2008-2012 Infant Deaths	2008-2012 Rate
RESIDENCE:						
NORTH CAROLINA	866	7.2	883	7.4	4,675	7.5
PCR I	49	6.5	43	5.7	227	5.8
PCR II	186	7.3	199	7.7	1,088	8.2
PCR III	139	5.8	143	6.0	773	6.3
PCR IV	189	7.3	193	7.5	913	6.8
PCR V	152	8.1	137	7.6	799	8.5
PCR VI	151	8.0	168	8.9	875	9.1
ALAMANCE	11	6.6	15	8.5	67	7.3
ALEXANDER	2	6.3	2	5.2	10	5.3
ALLEGHANY	0	0.0	0	0.0	2	4.2
ANSON	1	3.5	4	16.4	10	7.2
ASHE	0	0.0	2	7.8	5	3.9
AVERY	3	21.1	1	7.0	8	10.3
BEAUFORT	3	6.1	4	7.9	17	6.3
BERTIE	0	0.0	3	16.8	15	14.1
BLADEN	3	8.8	3	8.1	15	8.0
BRUNSWICK	8	7.6	10	9.7	38	7.0
BUNCOMBE	13	5.1	13	5.0	70	5.3
BURKE	7	8.1	4	4.5	39	8.4
CABARRUS	10	4.4	10	4.4	52	4.3
CALDWELL	5	6.2	6	7.7	41	10.0
CAMDEN	1	11.8	0	0.0	4	8.8
CARTERET	4	6.3	5	8.3	22	7.2
CASWELL	4	17.4	0	0.0	9	8.6
CATAWBA	9	5.1	6	3.3	59	6.3
CHATHAM	5	7.8	4	6.6	17	5.1
CHEROKEE	3	12.6	1	4.8	10	8.4
CHOWAN	3	17.3	1	6.9	7	8.4
CLAY	1	12.7	0	0.0	4	9.5
CLEVELAND	13	11.9	8	7.3	51	8.9
COLUMBUS	6	9.2	2	3.2	37	11.0
CRAVEN	12	7.3	15	9.2	69	8.2
CUMBERLAND	44	7.2	43	7.8	253	8.6
CURRITUCK	2	8.6	2	9.6	10	8.8
DARE	2	5.5	2	5.1	8	4.1
DAVIDSON	9	5.2	23	13.8	78	8.6
DAVIE	3	7.9	2	4.9	10	4.8

Note: Rates based on less than 10 deaths are unreliable and should be interpreted with caution.
Source: NC Department of Health & Human Services State Center for Health Statistics, 21AUG2013

2012 NORTH CAROLINA INFANT MORTALITY REPORT, TABLE 2
North Carolina Infant Death Rates (per 1,000 live births) by Perinatal Care Region (PCR) and County of Residence: 2011, 2012, and 2008-2012

	2011 Infant Deaths	2011 Rate	2012 Infant Deaths	2012 Rate	2008-2012 Infant Deaths	2008-2012 Rate
DUPLIN	3	3.7	6	8.0	36	9.1
DURHAM	27	6.4	34	7.9	150	6.9
EDGECOMBE	6	9.2	5	7.4	31	8.7
FORSYTH	46	10.0	47	10.2	238	10.0
FRANKLIN	5	7.6	8	11.9	29	8.4
GASTON	13	5.1	24	9.6	112	8.5
GATES	0	0.0	0	0.0	4	7.1
GRAHAM	0	0.0	1	10.4	3	6.5
GRANVILLE	4	7.2	4	7.1	14	4.7
GREENE	2	8.5	0	0.0	12	10.1
GUILFORD	45	7.4	49	7.9	278	9.0
HALIFAX	9	15.6	7	11.9	37	11.9
HARNETT	11	6.2	16	9.0	72	8.3
HAYWOOD	0	0.0	4	7.3	11	3.9
HENDERSON	3	2.8	7	6.6	28	5.0
HERTFORD	2	8.2	3	12.9	20	14.7
HOKE	8	7.9	6	6.4	33	7.1
HYDE	3	57.7	0	0.0	3	11.7
IREDELL	8	4.6	10	5.8	59	6.4
JACKSON	5	12.7	3	8.2	16	7.9
JOHNSTON	13	5.7	17	7.7	77	6.6
JONES	4	33.9	0	0.0	9	18.5
LEE	12	14.5	8	9.7	38	8.7
LENOIR	3	4.5	6	9.2	35	10.0
LINCOLN	8	10.1	4	5.4	34	8.2
MCDOWELL	3	6.6	2	4.4	11	4.6
MACON	4	12.9	0	0.0	10	5.8
MADISON	2	11.0	1	5.0	8	8.6
MARTIN	0	0.0	1	4.3	12	9.0
MECKLENBURG	80	5.8	74	5.3	418	5.9
MITCHELL	0	0.0	0	0.0	1	1.3
MONTGOMERY	6	17.0	4	12.3	21	12.2
MOORE	7	7.2	3	3.1	27	5.6
NASH	7	6.4	11	9.9	55	9.3
NEW HANOVER	9	4.0	9	4.0	52	4.5
NORTHAMPTON	1	5.7	2	9.5	8	7.6
ONSLOW	31	7.1	34	7.7	144	6.9
ORANGE	8	6.1	7	5.4	36	5.5

Note: Rates based on less than 10 deaths are unreliable and should be interpreted with caution.
Source: NC Department of Health & Human Services State Center for Health Statistics, 21AUG2013

2012 NORTH CAROLINA INFANT MORTALITY REPORT, TABLE 2
North Carolina Infant Death Rates (per 1,000 live births)
by Perinatal Care Region (PCR) and County of Residence: 2011, 2012, and 2008-2012

	2011 Infant Deaths	2011 Rate	2012 Infant Deaths	2012 Rate	2008-2012 Infant Deaths	2008-2012 Rate
PAMLICO	0	0.0	2	20.4	7	13.6
PASQUOTANK	3	6.2	2	4.2	27	10.4
PENDER	3	4.9	3	5.1	18	6.1
PERQUIMANS	1	7.5	1	7.9	11	16.7
PERSON	4	9.8	4	10.8	14	6.5
PITT	21	9.8	25	11.5	124	11.2
POLK	0	0.0	0	0.0	5	7.1
RANDOLPH	6	3.8	12	7.3	52	6.2
RICHMOND	8	13.3	7	13.5	26	8.6
ROBESON	19	10.1	18	9.8	127	12.5
ROCKINGHAM	11	12.4	13	13.7	51	10.5
ROWAN	9	5.9	9	5.7	56	6.9
RUTHERFORD	6	8.5	4	6.0	27	7.6
SAMPSON	13	15.5	6	7.0	52	11.9
SCOTLAND	7	15.3	7	15.4	28	11.5
STANLY	2	3.1	5	7.9	24	7.1
STOKES	5	12.5	1	2.5	18	8.5
SURRY	7	9.1	3	3.8	38	9.2
SWAIN	4	20.4	2	10.3	7	7.5
TRANSYLVANIA	2	7.6	3	12.3	9	6.5
TYRRELL	0	0.0	0	0.0	2	8.9
UNION	12	5.0	14	5.9	72	5.7
VANCE	4	7.0	3	5.2	25	8.3
WAKE	91	7.3	87	7.1	427	6.7
WARREN	1	5.8	2	11.9	10	10.6
WASHINGTON	1	7.2	0	0.0	10	13.9
WATAUGA	1	2.8	0	0.0	4	2.2
WAYNE	20	11.6	17	9.5	90	10.5
WILKES	8	11.9	6	8.6	28	7.9
WILSON	7	7.0	14	15.3	46	8.8
YADKIN	2	5.0	3	7.3	14	6.6
YANCEY	3	17.5	2	11.5	7	8.0

Note: Rates based on less than 10 deaths are unreliable and should be interpreted with caution.
Source: NC Department of Health & Human Services State Center for Health Statistics, 21AUG2013

2012 NORTH CAROLINA INFANT MORTALITY REPORT, TABLE 7
2012 Infant Deaths (<365 days) by Cause of Death

	RACE/ETHNICITY									
	White Non-Hispanic		Af. Am. Non-Hispanic		Other Non-Hispanic		Hispanic		TOTAL	
	Infant Deaths		Infant Deaths		Infant Deaths		Infant Deaths		Infant Deaths	
	#	%	#	%	#	%	#	%	#	%
CAUSE OF DEATH:										
Congenital Malformations, deformations & chromosomal abnormalities (Q00-Q99)	91	24.7	56	14.2	10	23.3	25	32.9	182	20.6
Prematurity & Low Birth Weight (P05-P07)	69	18.7	123	31.1	8	18.6	10	13.2	210	23.8
Respiratory Distress & other Respiratory conditions (P22-P28)	15	4.1	18	4.6	2	4.7	2	2.6	37	4.2
Infections & Parasitic Diseases (A00-B99; P35-P39)	16	4.3	14	3.5	0	0	4	5.3	34	3.9
Other conditions originating in the perinatal period (P00-P04; P08-P21; P29-P34; P40-P96)	64	17.3	84	21.3	11	25.6	17	22.4	176	19.9
Sudden Infant Death Syndrome (R95)	17	4.6	6	1.5	4	9.3	1	1.3	28	3.2
Unintentional Injuries/Accidents (V01-X59; Y85-Y86)	14	3.8	17	4.3	4	9.3	2	2.6	37	4.2
Homicide/Assault (X85-Y09; Y87.1)	4	1.1	6	1.5	0	0	1	1.3	11	1.2
Other Ill-Defined and unknown causes of death (R96-R99)	44	11.9	40	10.1	4	9.3	4	5.3	92	10.4
All Other Causes of Death (Residual)	35	9.5	31	7.8	0	0	10	13.2	76	8.6
TOTAL, ALL CAUSES	369	100.0	395	100.0	43	100.0	76	100.0	883	100.0

Source: NC Department of Health & Human Services State Center for Health Statistics, 21AUG2013