



# Oklahoma City Federal Building Bombing

Memories and Milestones

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“The day of the bombing is a standard by which all Oklahomans now measure time... “We are simply not the same people we were before.”

Stephen Jones,  
Timothy McVeigh’s lead defense attorney

## A.P. Murrah Bombing

Wednesday 19 April 1995 at 9:02 Central Time

- 46% fatality rate inside the Murrah Building (92% combined)
- 167 deaths in blast
- Nine children under the age of 6 killed
- One first responder killed
- 683 people injured
- 800+ people sought medical care



Oklahoma City Bombing Injuries . Shariat, Mallonee, Stidham, Injury Prevention Service Oklahoma State Department of Health. December 1998.

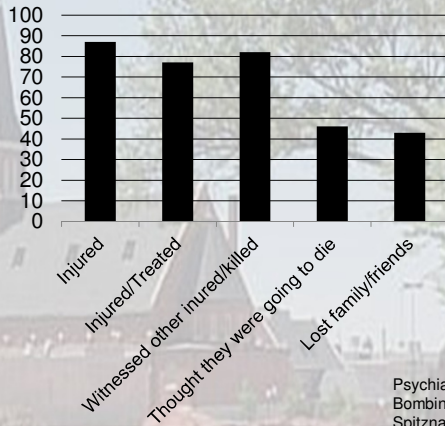
## A.P. Murrah Bombing



- 324 buildings within a sixteen-block radius destroyed or damaged
- 258 additional nearby buildings had shattered glass
- 86 cars destroyed or burned<sup>14</sup>
- \$652 million damage<sup>15</sup>

## OKC Federal Building Bombing Survivors

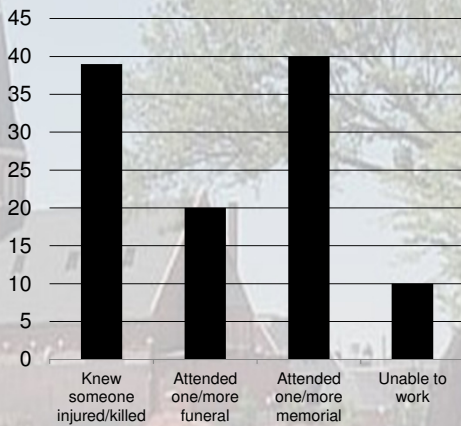
Percentage of approximately 550 employees



Psychiatric disorders among survivors of the Oklahoma City Bombing. (1999) North, Nixon, Shariat, Mallonee, McMillen, Spitznagel, Smith. *JAMA* 1999 282:755-62.

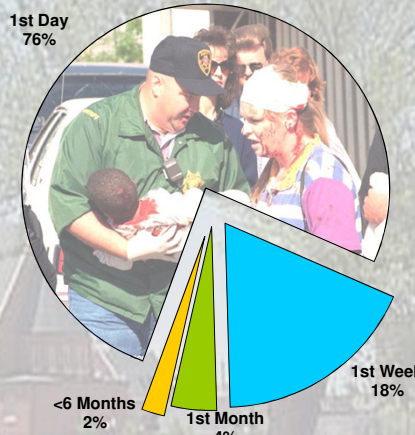
## OKC community impact immediately after bombing

Percentage



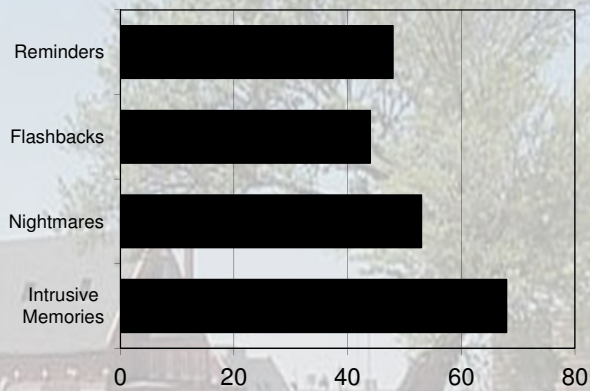
North, et al., (1999) *JAMA* 1999 282:755-62.

## Survivors of 1995 OKC Bombing Reported onset of "PTS" Symptoms



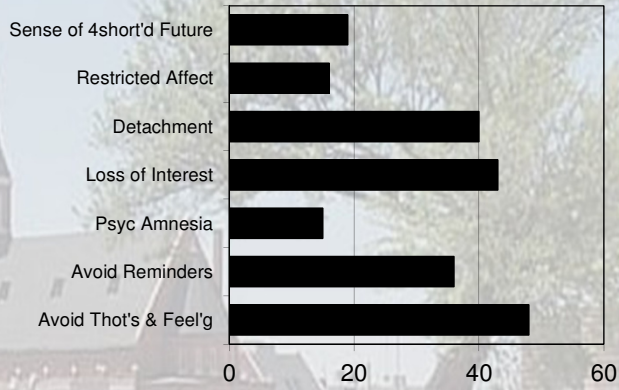
North, et al., (1999) JAMA 1999 282:755-62.

## PTSD Symptoms (Criterion B) Oklahoma City Bombing (N= 182)



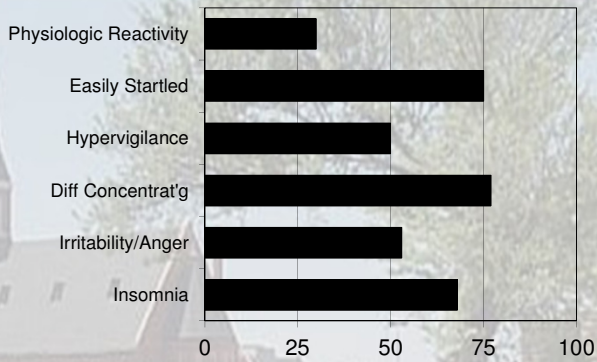
North, et. al., [JAMA](#) 1999 282:755-62.

## PTSD Symptoms (Criterion C) Oklahoma City Bombing (N= 182)



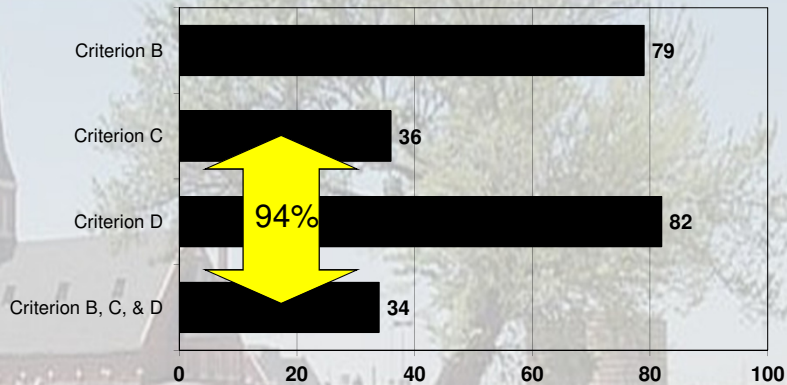
North, et. al., [JAMA](#) 1999 282:755-62.

## PTSD Symptoms (Criterion D) Oklahoma City Bombing (N= 182)



North, et. al., [JAMA](#) 1999 282:755-62.

## Association to PTSD diagnosis Oklahoma City Bombing (N= 182)



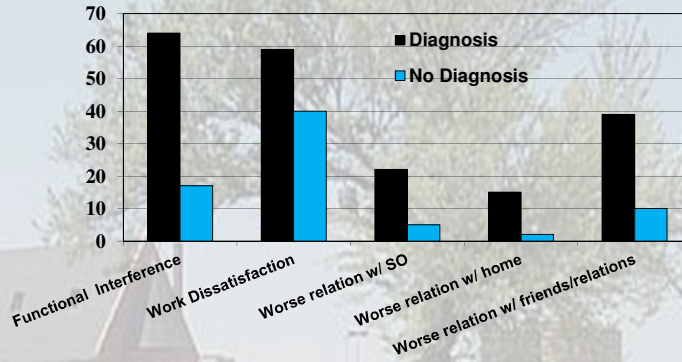
North, et. al., *JAMA* 1999 282:755-62.

## PTSD Symptom Follow-up Data

- 137 survivors assessed at approximately 6 and 17 months post disaster
- Combined index and follow-up data yielded a higher (41%) incidence of PTSD than detected at index (32%) or follow-up (31%)
- All PTSD was chronic (89% unremitted at 17 months) with no delayed-onset cases
- Criterion C, unlike B and D alone, was pivotal to current PTSD status
- The findings at index were sustainable

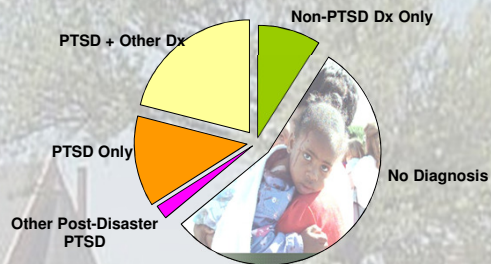
The course of posttraumatic stress disorder in a follow-up study of survivors of the Oklahoma City bombing. (2004)  
North, Pfefferbaum, Tivis, Kawasaki, Reddy, Spitznagel. *Ann Clin Psychiatry*. Oct-Dec;16(4):209-15.

## PTSD Symptoms (Criterion F) Oklahoma City Bombing (N= 182)



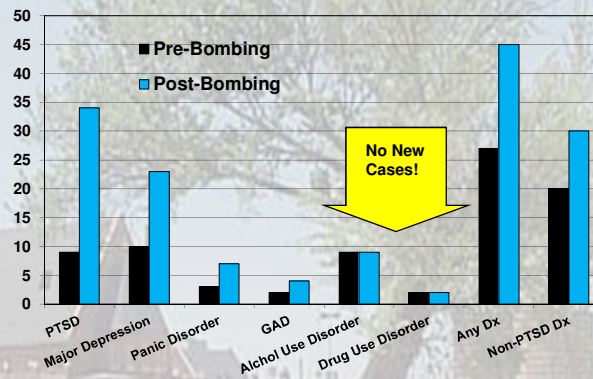
North, et. al., *JAMA* 1999 282:755-62

## Post-Disaster Psychiatric Diagnoses Oklahoma City Bombing (N= 182)



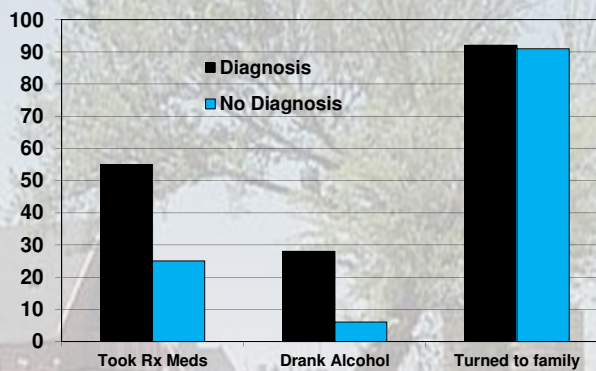
North, et. al., *JAMA* 1999 282:755-62.

## Prevalence of Pre - & Post- Disaster Disorders Oklahoma City Bombing (N= 182)



North, et. al., *JAMA* 1999 282:755-62.

## Survivors of 1995 OKC Bombing Reported coping measures



North, et. al., *JAMA* 1999 282:755-62.



## Survivors of 1995 OKC Bombing Alcohol Use Revisited

- Acknowledged alcohol users from sample of OKC bombing survivors seeking counseling ( $N=43$ )
- Reported increased alcohol use related to
  - Injury
  - Retrospective report of initial reaction
  - Grief
  - PTS symptoms
- Increased alcohol use related to functional impairment

Pfefferbaum & Doughty (2001). Increased alcohol use in a treatment sample of Oklahoma city bombing victims. *Psychiatry*, 64(4):296-303



"Time heals nothing, "It makes it a little more bearable, but it heals nothing"

Debi, whose brother, a U.S. Department of Housing and Urban Development worker, was killed in the OKC Bombing

## Physiologic Reactivity Seven Years After Exposure to Terrorist Event

- Sixty survivors
- Sixty age- and gender-matched "controls"
- Compared on both psychometric and physiologic assessments
  - Heart rate and systolic, diastolic, and mean arterial blood pressures were
- Measured before, during, and after bombing-related interviews
- Posttraumatic stress was significantly more prevalent in the survivor group
- Survivors had significantly greater autonomic reactivity to trauma reminders on all measures than comparison subjects.
- The results suggest that physiologic assessment may capture long-term effects of terrorism that are not identified by psychometric instruments.

Tucker, Pfefferbaum, North, Kent, Burgin, Parker, Hossain, Jeon-Slaughter, and Trautman. Physiologic Reactivity Despite Emotional Resilience Several Years After Direct Exposure to Terrorism. Am J Psychiatry 164:230-235, February 2007.

## Survivors of 1995 OKC Bombing Current Status

- 63% of survivors had utilized psychological counseling services
- 94% were employed at the time of the bombing
- 80% of respondents were employed at time of survey
- 14% of survivors had experienced changes in employment status since the bombing; of these,
  - 55% were unemployed
  - 24% received medical disability/workers' compensation
  - 21% had taken early or regularly scheduled retirement

**Oklahoma City Bombing Injuries** . Shariat, Mallonee, Stidham, Injury Prevention Service  
Oklahoma State Department of Health. December 1998.

## Morgue and Forensic Recovery Workers OKC Bombing (N= 51/135)

- Oklahoma State Medical Examiners Office
- Local funeral service employees
- NDMS DMORT
- 54th Quartermaster Graves Registration Unit
- OU Pathology and Dentistry Departments
  - Faculty
  - Residents
  - Students

Body Handlers After Terrorism in Oklahoma City:  
Predictors of Posttraumatic Stress and Other Symptoms.  
(2002) Phebe Tucker MD, Betty Pfefferbaum MD, JD,  
Debby E. Doughty PhD, Fred B. Jordan MD, Dan E.  
Jones PhD, Sara Jo Nixon PhD. *Am J Orthopsych* Vol. 72,  
No 4, 469-475.

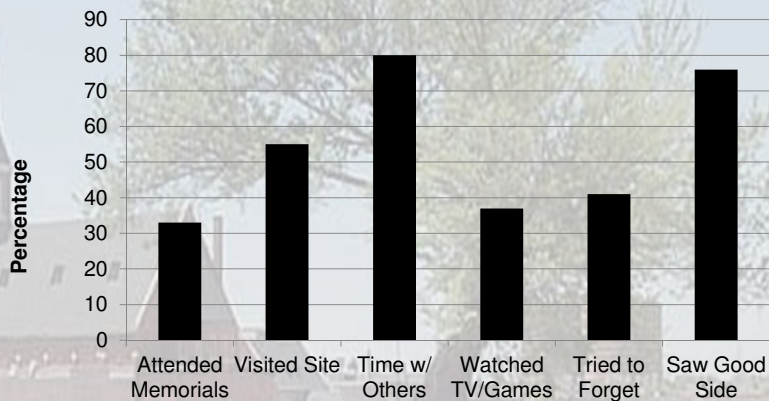


## Morgue and Forensic Recovery Workers OKC Bombing Demographics

- 25 to 56 years old (Average: 34.7 years)
- 35 Male
- 16 Female
- 88% Caucasian
- 73% Married
- 28 % Knew person(s) killed in bombing

Tucker, et. al. (2002) *Am J Orthopsych* Vol. 72, No 4, 469-475.

## Morgue and Forensic Recovery Workers Coping Strategies (N = 51)



Tucker, et. al. (2002) *Am J Orthopsy* Vol. 72, No 4, 469-475.

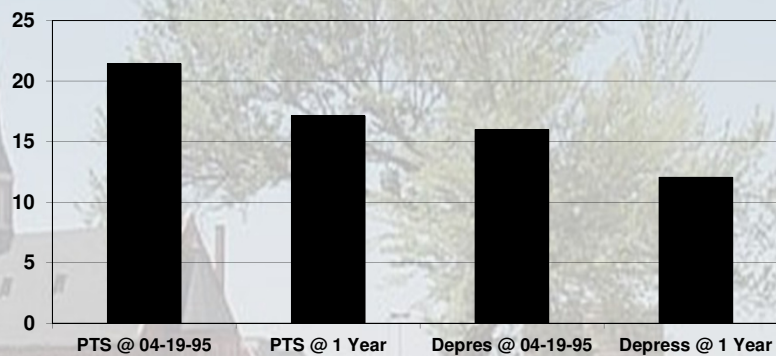
## Morgue and Forensic Recovery Workers (N=51)

- 10% workers reported increased alcohol use first 2 months after bombing
- 14% workers reported seeking mental health treatment
- Exaggerated startle response persisted one year later

Tucker, et. al. (2002) *Am J Orthopsy* Vol. 72, No 4, 469-475.

## Morgue and Forensic Recovery Workers

Post traumatic stress and depression scores



Tucker, et. al. (2002) *Am J Orthopsy* Vol. 72, No 4, 469-475.

## Morgue and Forensic Recovery Workers Factors Associated with Higher PTS and Depressive Symptoms

- Occurrence of new physical problems
- Increased alcohol use
- Seeking mental health treatment
- Not correlated with demographics, exposure or experience

Tucker, et. al. (2002) *Am J Orthopsy* Vol. 72, No 4, 469-475.

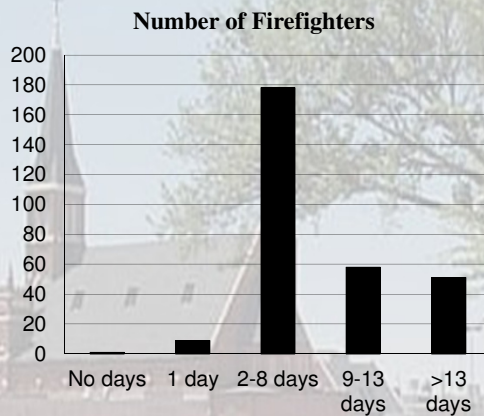
## Perceived effects and recovery in OKC Firefighters

- Survey of 310 (39%) OKC firefighters
- Surveyed in 1996 & 1998
- Compared to out-of-state firefighters ( $N=106$ )
- Age range from 21 to 60 years
- Non-Hispanic White = 84%
- Years firefighting from 0 - 30 years



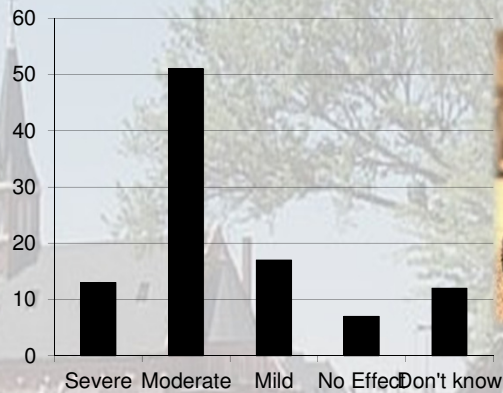
Perceived effects and recovery in Oklahoma City Firefighters. Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association. Vol. 92, No. 4, April. Pp. 172 - 177.

## OKC Firefighters Number of Days on Site



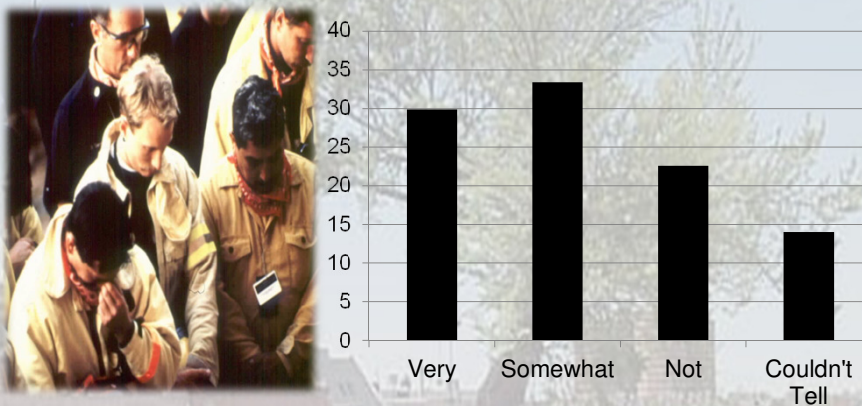
Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association. Vol. 92, No. 4, April. Pp. 172 - 177.

## OKC Firefighters: Perceived effect of bombing



Nixon, et. al. (1999). *Journal of the Oklahoma State Medical Association*. Vol. 92, No. 4, April. Pp. 172 - 177.

## OKC Firefighters: Helpfulness of Mitchell-Model CISM



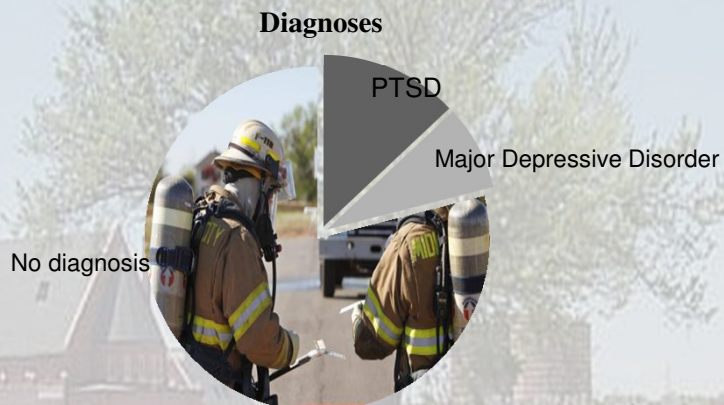
Nixon, et. al. (1999). *Journal of the Oklahoma State Medical Association*. Vol. 92, No. 4, April. Pp. 172 - 177.

## OKC Firefighters: Perceived recovery @ one year



Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association. Vol. 92, No. 4, April. Pp. 172 - 177.

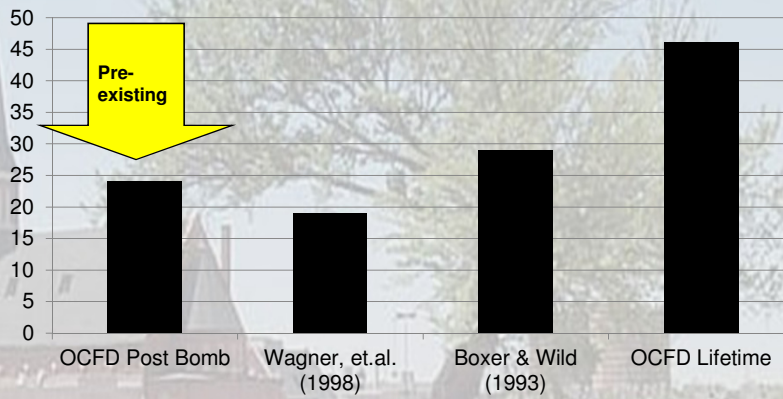
## OKC Firefighters: Post-bombing diagnoses 3 years after 1995 OKC Bombing (N = 181)



North, et. al. 2002: J Traum Stress 15: 171-5 Am J Psychiatry 159:857-9

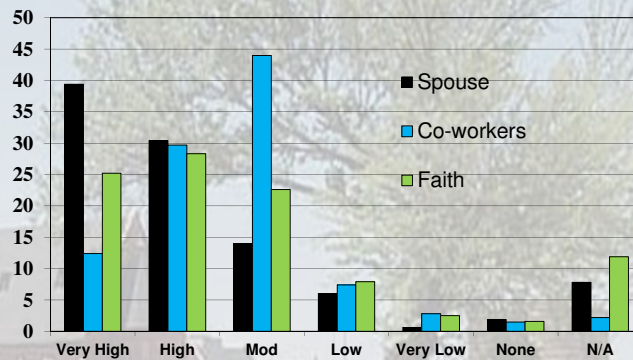


## OKC Firefighters: Post-bombing Alcohol Use (N = 181)



North, et. al. 2002: J Trauma Stress 15: 171-5 Am J Psychiatry 159:857-9

## OKC Firefighters Perceived Levels of Emotional Support



Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association, Vol. 92, No. 4, April, Pp. 172 - 177.

## OKC Firefighters Perceived Levels of Emotional Support

- Both groups of firefighters reported their relations with co-workers had more often improved rather than worsened after the bombing
- Oklahoma City firefighters described much greater support from their community than the out-of-state firefighters reported
- Oklahoma City firefighters reported greater support from both religious communities and mental health counselors than their out-of-state counterparts

Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association. Vol. 92, No. 4, April. Pp. 172 - 177.

## Did divorces increase after the Oklahoma City bombing?

In the first year after the bombing, relations with significant others worsened more often for Oklahoma City firefighters than for the comparison group

One-half Oklahoma City firefighters reported lasting changes in their relationship; equally divided between positive and negative changes

Among Oklahoma City firefighters, 10 divorces occurred during the three years prior to the bombing, while 24 divorces occurred between 1995 and 1997

The upward trend in the divorce rate among OCFD personnel began well before the year of the bombing

Nixon, et. al. (1999). Journal of the Oklahoma State Medical Association. Vol. 92, No. 4, April. Pp. 172 - 177.

## Did divorces decrease after the Oklahoma City bombing?

Lower observed divorce rates following the Oklahoma City bombing than the prevailing 10-year cubic divorce trend would have predicted

Comparison of counties in and around Oklahoma City to those farther away showed divorces were lower closer to Oklahoma City

The noted effect dampen over time

Did Divorces Decline after the Oklahoma City Bombing? Nakonezny, Reddick and Rodgers, Journal of Marriage and Family, Vol. 66, No. 1 (Feb., 2004), pp. 90-100.

## PTSD in OKC Bombing Firefighters' Partners

- Twenty-four female partners of firefighters involved in OKC bombing recovery efforts(13%)
- 22 to 57 years (Mean = 39; 70% aged 30 to 50 years)
- Caucasian ( $N = 23$ , 96%)
- Married to, or cohabited with, their firefighter partners for an average of 10 years
- Two were neither married to, nor cohabited with, current mates at the time of bombing but were married to firefighters at the time of the study.

Persistent Physiological Reactivity in a Pilot Study of Partners of Firefighters After a Terrorist Attack  
Pfefferbaum, Tucker, North, Jeon-Slaughter, Kent, Schorr, Wilson, Bunch, Journal of Nervous and Mental Disease  
Issue: Volume 194(2), February 2006, pp 128-131.

## PTSD in OKC Bombing Firefighters' Partners

- Assessed 43 to 44 months later
- 40% met both B (intrusive re-experiencing) and D (hyperarousal) criteria
- More than one half of the sample exhibited autonomic reactivity on at least one measurement
- One participant met all DSM-III-R symptom group criteria for bombing-related posttraumatic stress disorder
- Most of the participants with post-bombing disorders suffered from pre-existing conditions

Persistent Physiological Reactivity in a Pilot Study of Partners of Firefighters After a Terrorist Attack  
Pfefferbaum, et. al., *Journal of Nervous and Mental Disease* Issue: Volume 194(2), February 2006, pp 128-131.

## Suicide Rate Among Police Officers

- Statistical rate of suicide by police officers is not greater than that of the general population when controlled for sex, age and race
- Law enforcement personnel are 26% less likely to commit suicide
- One "OKC bombing-related" police officer suicide (1997)

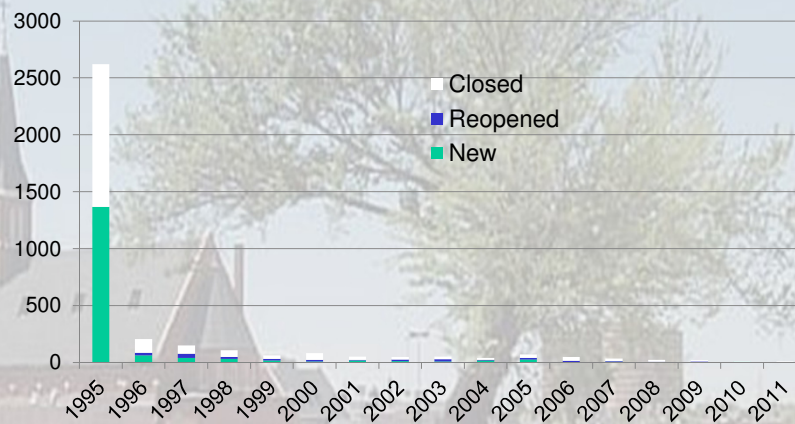
Aamodt, M. G., & Stalnaker, N. A. (2001). Police officer suicide: Frequency and officer profiles. In Shehan, D. C., & Warren, J. I. (Eds.) *Suicide and Law Enforcement*. Washington, D.C.: Federal Bureau of Investigation.



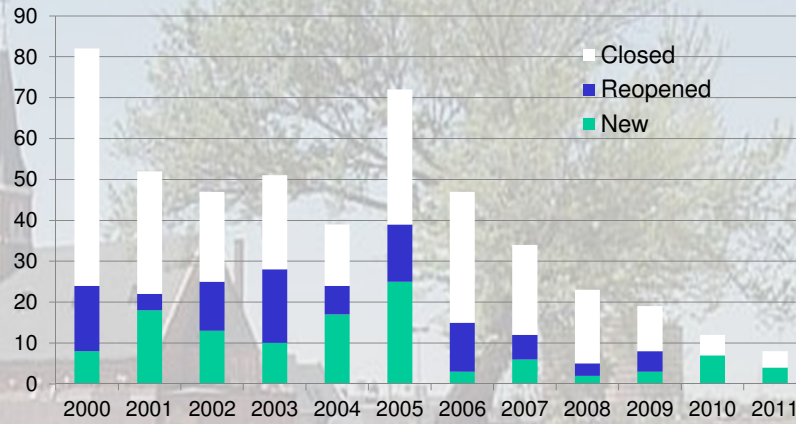
“When someone is a victim, he or she should be at the center of the criminal justice process, not on the outside looking in.”

President William Jefferson Clinton  
Oklahoma City 1997

## OKC Bombing American Red Cross Case Status since April 1995

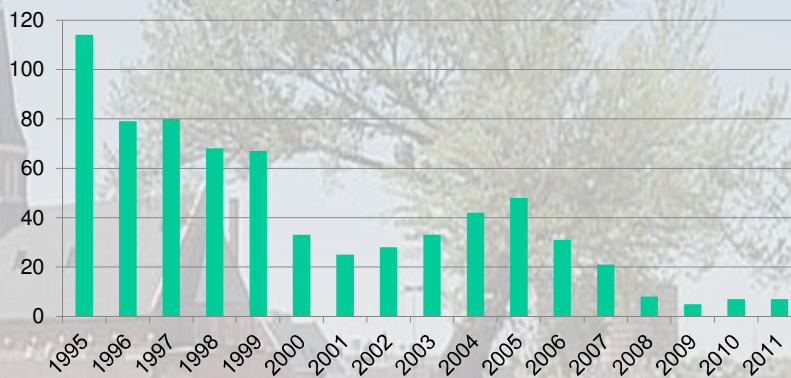


## OKC Bombing American Red Cross Case Status since 2000

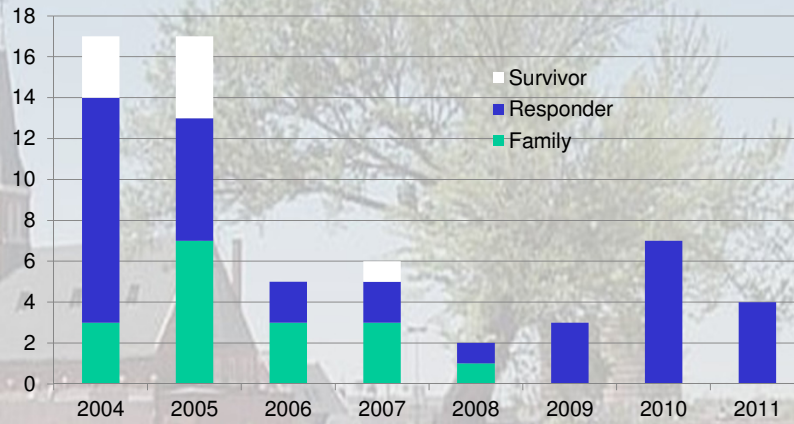


## OKC Bombing American Red Cross Caseload Carryover since 1995

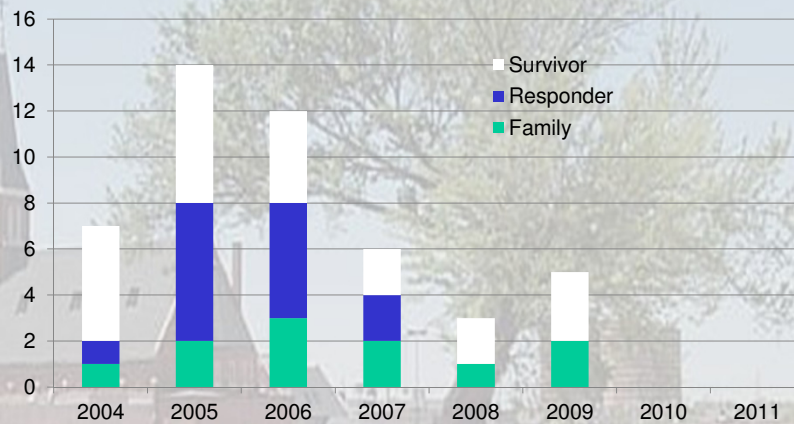
New cases + reopened cases – closed cases



## New Mental Health Cases



## Re-Opened Mental Health Cases



## Observations from OKC Bombing

- Occurrence of new physical symptoms can be associated with depression/ PTSD in responders
- A terrorist event may reduce divorce, but not for everyone and not for long
- Physiological arousal persists and can also be measured in responders' spouses
- Mental health care is sought well in to the second decade
- All new cases for last three years were first responders



“We remember the day of the bombing not because we can't forget but because we choose to remember. “

Mick Cornett, Mayor  
Oklahoma City 2010