Stroke Awareness – Impact of a Multi-media Campaign

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Importance of Early Treatment of Stroke

- 3rd leading cause of death and major cause of disability
- tPA approved for treatment of ischemic stroke in 1996
- Treatment within 90 minutes of symptom onset optimal
- Arriving by ambulance associated with quicker treatment
- 4.5% of ischemic stroke patients receive tPA *(AJPM, 2006)*
- Designated Stroke Centers in NYS

Pre-Hospital Delay

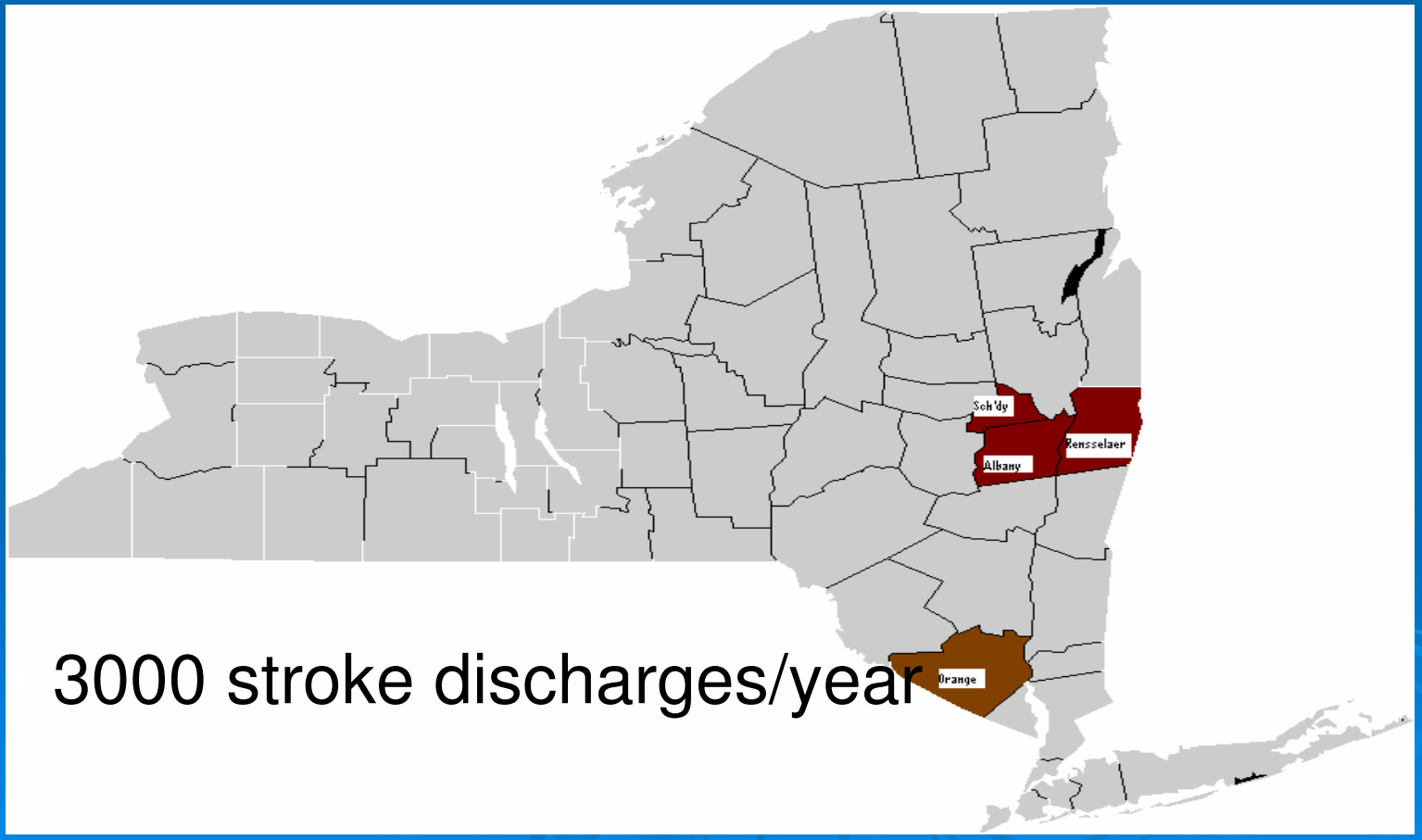
- Coverdell Stroke Registries (4 states) *(MMWR, 2007)*
  - 45% of stroke patients had documented symptom onset time
  - 48% of those with documented time arrived within 2 hours
    - **Only 22% of all stroke patients arrived within 2 hours**
  - 53% arrived by ambulance
- Need to increase % arriving within 2 hours and % arriving by ambulance

Interventions to Reduce Pre-Hospital Delay

- Few published reports
- Most media campaigns have measured knowledge of signs and symptoms
- Few have measured behavior

Capital Region Pilot Project

- Total media market covers 1.3 million people



3000 stroke discharges/year

Focus Groups

- 4 focus groups with adults in Capital Region (May-July, 2006)
  - 2 with African Americans
  - 2 with mixed audience
- Knowledge of stroke symptoms & appropriate response
- Source of health information
- Tested existing media spots

Focus Groups – Results

- Generally aware of symptoms
- Symptoms not considered urgent
- Not aware of time constraints for treatment
- African Americans more heavily influenced by culture and family history
- Sources of info on health concerns
  - Internet (Web MD, Search Engines) and TV widely used
  - Seek advice from family/friends with related experience
  - Doctors not usually the initial source

Focus Groups – Response to Symptoms

- Questionnaire based on Stroke Action Test *(Stroke, 2005)*
- African Americans more likely to wait, watch symptoms and then decide
- African Americans less likely to call 9-1-1
- More urgent response for others vs. self
  - "I know my own body"

Focus Groups – Response to Ads

- Ads Tested
  - ASA/Ad Council – “Reverse Hospital”
  - Mass DPH – Stroke Heroes Act FAST (30 sec)
  - Utah DOH
- Response to Ads
  - More likely to call 9-1-1 for stroke symptoms
  - 3 hour time window and availability of emergency treatment were primary reasons for changes in response

Campaign – Key Messages

- Used F-A-S-T mnemonic
- Key messages – repeated in all TV ads:
  - “call 9-1-1 within 1 hour of beginning of any symptom”
- New treatment is available
- Symptoms are often not painful
- Why better to arrive by ambulance

Campaign Partners

- AHA/ASA – Founders Affiliate
- Designated Stroke Centers in Capital Region
  - Albany Medical Center
  - St. Peter's Health Care Services
  - Ellis Hospital
  - Seaton Health System, Inc
  - Northeast Health
- Stroke Centers contributed $2,000 each to TV portion

Campaign Components

- TV – 30 sec spots
  - ASA/Ad Council – “Reverse Hospital”
  - Mass. DPH – “Stroke Heroes Act FAST”
  - NYS DOH - 2 new spots
- Radio
  - “Ticking Clock” 60 second spot, Utah DOH
- Transit
  - Bus Shelters, outside and inside of buses

Campaign Components (cont)

- Print
  - Table Tents
  - Pharmacy Cards
  - Magnets
- Presentations
  - Mass. DPH
  - 30 presentations, 1000+ participants.
- Earned media – did not measure

Campaign Duration & Intensity

	Duration	TV		Radio	
		Total times aired	Times Per wk	Total times aired	Times Per wk
Phase 1 (Oct – Dec 06)	12 wks	123	10	(none)	
Phase 2 - Intense (Jan-Feb 07)	**5 wks**	**1558**	**311**	**509 (2 wks)**	**255**
Phase 3 Mar-June, 07	16 wks	614	38	1,048 (4 wks)	262

Campaign Costs

Focus Groups (4)	$24,875
TV (production and purchased time)	$171,308
Radio (production and purchased time)	$82,078
Transit	$37,512
Print	$3,152
Total	$319,155

Evaluation

- Telephone Survey of Adults >30 years in Capital Region and control community
  - Based on Stroke Action Test *(Stroke, 2005)*
  - Baseline – prior to Phase 1
  - Follow up – just after Phase 2
  - Response rate 35-36%
  - Weighted for age, gender, race
  - Sample was well educated (>40% with college degree)

Evaluation (cont)

- Get With the Guidelines Data from 5 hospitals (de-identified)
  - Baseline: 6 months (Apr – Sept, 2006)
  - Follow up: 6 months (Mar - Aug, 2007)
  - Data elements
    - Time of symptom onset
    - Time of arrival at ED
    - Mode of arrival
    - Demographics

Results – Exposure to Campaign

	Control			Intervention			P-value
	Pre-	Post-	Change	Pre-	Post-	**Change**	
TV ad	47.9	55.5	+7.6%	49.0	**80.2**	**+31.2%**	<.001
Radio*		33.7			43.4		
Bus	6.1	7.1	+0.9%	8.5	14.7	**+6.1%**	.03
Any ad	45.2	59.1	+13.9%	48.1	**82.1**	**+34.1%**	<.001

* Baseline survey did not ask about exposure to radio ads

Results – Exposure to Campaign

	Control			Intervention		
	Pre	Post	Change	Pre	Post	**Change**
"a lot" of TV ads	13.2	15.5	+2.3%	9.0	40.1	**+31.1%**
Message – call 9-1-1	39.5	46.5	+7.0%	42.9	77.1	**+34.2%**

Results - Percent who would call 9-1-1 for Self

	Control			Intervention			P-value
	Pre	Post	Change	Pre	Post	Change	
Speech	54.7	59.3	+4.6	54.3	71.3	**+17.1**	**.002**
Vision	24.7	24.1	-0.6	22.7	31.3	**+8.5**	**.01**
Arm Weakness	26.5	27.5	+1.0	30.3	40.2	**+9.9**	**.02**
*Pain between shoulders**	*19.2*	*16.1*	*-3.2*	*18.3*	*17.7*	*-0.6*	*NS*
*Temp 101º **	*11.8*	*11.7*	*-0.1*	*12.8*	*12.5*	*-0.3*	*NS*

* Decoy Symptoms

Results - Percent Who Would Call 9-1-1 for Other

	Control			Intervention			P-value
	Pre	Post	Change	Pre	Post	Change	
Speech	61.9	67.4	+5.5	67.5	77.0	+9.5	NS
Vision	30.8	28.1	-2.7	29.0	34.4	**+5.3**	**.03**
Face	64.3	65.3	+0.9	64.9	77.9	**+13.0**	**.002**
Arm Weakness	47.3	44.9	-2.4	47.2	53.5	**+6.3**	**.04**
*Pain between shoulders **	*19.2*	*16.1*	*-3.2*	*18.3*	*17.1*	*-0.6*	*NS*
*Temp 101º **	*12.8*	*14.3*	*1.5*	*14.4*	*13.6*	*-0.7*	*NS*

* Decoy Symptoms

Get With the Guidelines – Options for Recording Time of Symptom Onset

- Exact day and time
- Estimated day and time – morning, afternoon, evening, night
- Unknown

Results – Pre-Hospital Delay

	Pre-	Post-	P-value
Arrive <= 2 hours of symptom onset, with exact time recorded	42.7%	50.3%	.04
Arrive <= 2 hours among those with exact time + those with estimated (using mid-point of range)	35.6%	42.6%	.02
Exact time of symptom onset reported	58.0%	50.4%	<.01

Results – Arrival Mode

	Pre		Post		Change
	%	N	%	N	%
Arrival by EMS from scene	51.6%	377	58.5%	437	+6.9%
Private transport	29.3%	214	24.8%	185	-4.5%

Conclusions

- Intensive mass media campaign can increase intent to call 9-1-1 for symptoms of possible stroke
- Formative research is important for crafting messages
- Need for consistent messages
- To Maximize impact the Campaign needs to be sustained
- Existing data can be used (e.g. GWTG & EMS) to evaluate impact at the local level