



Glencoe Regional Health Services

All About Strokes



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Family Medicine
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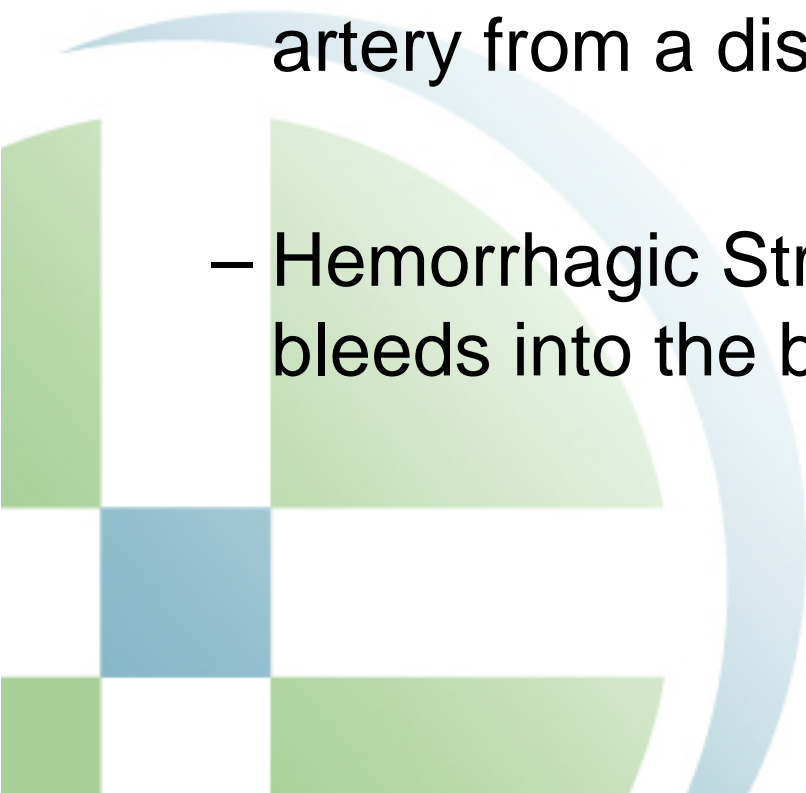
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Strokes

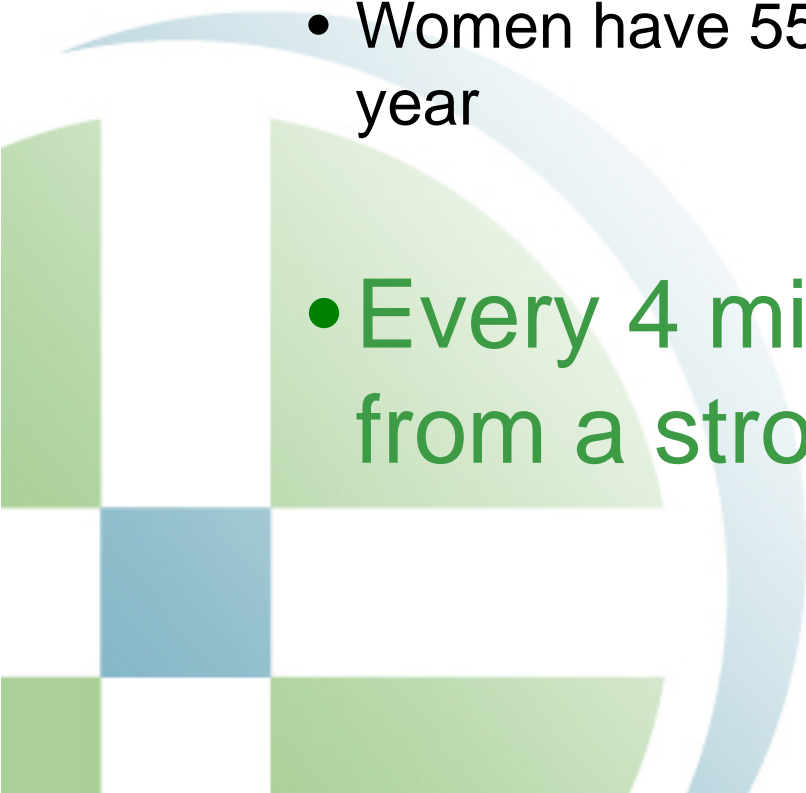
- Definition:
Interruption of blood flow to the brain which causes injury to the brain tissue and results in neurologic deficits.
- “Brain Attack”



Causes of Strokes

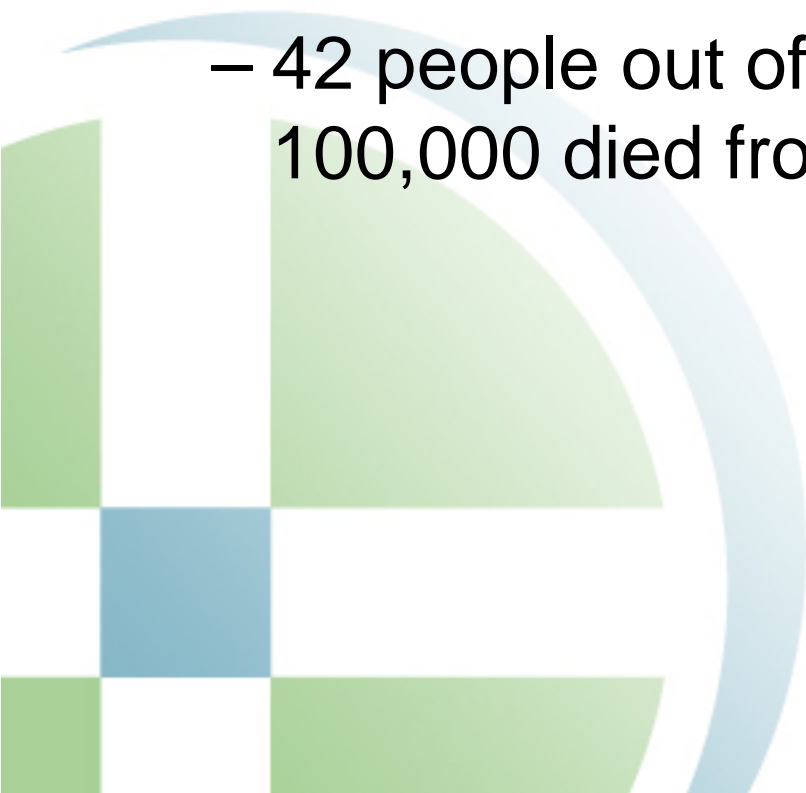
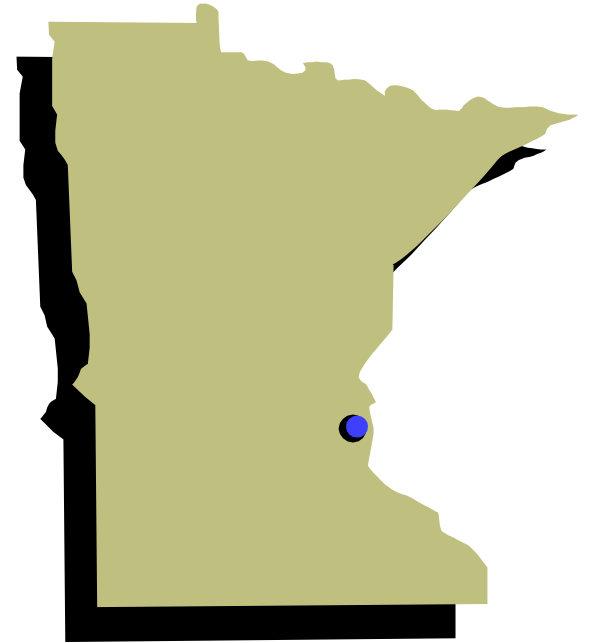
- Causes:
 - Ischemic Stroke: Blockage of an artery – blood clot forms in an artery or lodges in the artery from a distant site.
 - Hemorrhagic Stroke – Artery ruptures and bleeds into the brain.
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Facts About Strokes

- 795,000 people in the US have a stroke annually
 - 87% Ischemic, 13% Hemorrhagic
 - Women have 55,000 more strokes than men each year
 - Every 4 minutes, someone dies from a stroke!
- 

Facts About Strokes

- Strokes in Minnesota:
 - In 2005 >11,000 hospitalizations
 - 42 people out of every 100,000 died from stroke.



- “Know Stroke” Video
- <http://stroke.nih.gov/materials/knowstrokevideo.htm>

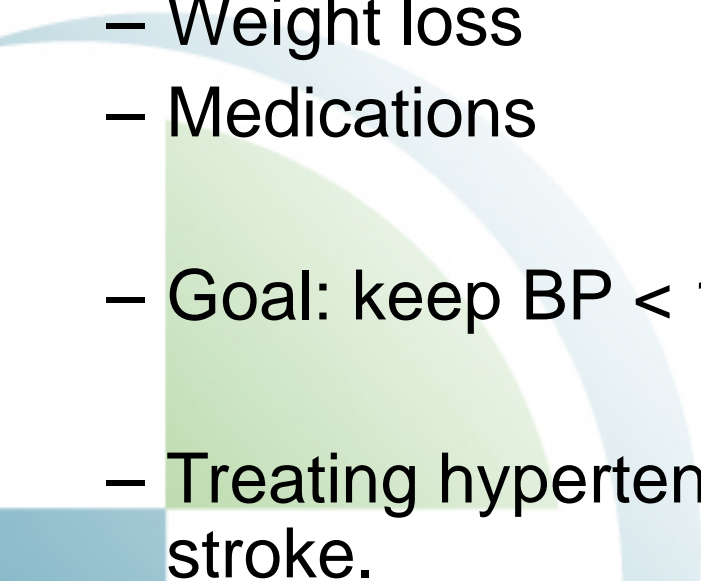


Risk Factors

- Risk factors for stroke:
- The Big 5
 - 1. High Blood Pressure
 - People with blood pressure <120/80 have ½ the risk of stroke over their lifetime.
 - Hypertension:
 - Prehypertension: 120-139/80-89
 - Hypertension Stage 1: 140-159/90-99
 - Hypertension Stage 2: \geq 160/100



Hypertension Treatment

- Treatment for hypertension:
 - Low sodium diet
 - Exercise
 - Weight loss
 - Medications
 - Goal: keep BP < 130/80
 - Treating hypertension does decrease risk of stroke.
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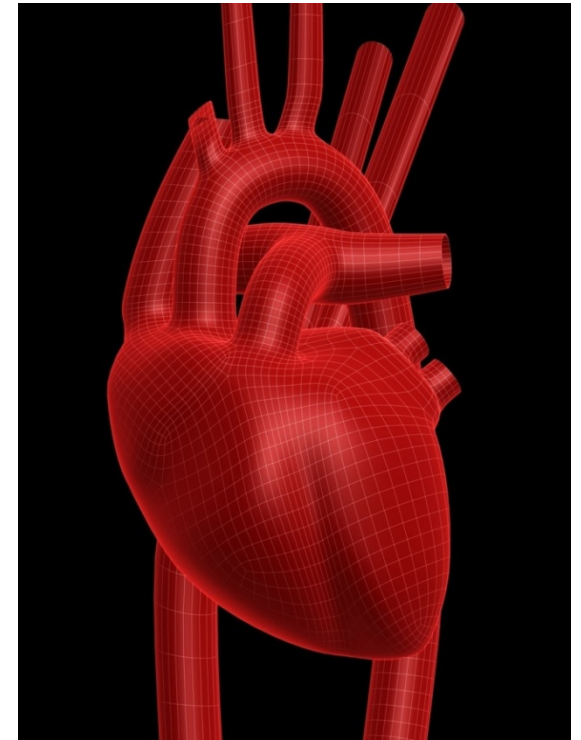
Risk Factors

- 2. Smoking
 - Smoking at least doubles the risk of stroke
 - Treatment is to QUIT.
 - Quitting does decrease risk by 50% in 1 year and to that of a non smoker in 5 years
 - Many strategies to help quit smoking
 - Best advice is to keep trying



Risk Factors

- 3. Heart Disease:
 - Coronary Artery Disease: increases risk of blockage to arteries in the neck or brain.
 - Atrial Fibrillation – increased risk of stroke 5 fold.
 - Increased risk with aging
 - Often no symptoms
 - Blood clot forms in the heart and can travel to the brain



Video – What is atrial fibrillation?

<http://www.youtube.com/watch?v=VKxQgjj2yVU>



Atrial Fibrillation Treatment

- Atrial Fibrillation Treatment:
 - Cardioversion
 - Rate control
 - Coumadin or Aspirin
 - Risk Assessment: CHADS Score
 - Congestive Heart Failure = 1
 - Age \geq 75 = 1
 - Diabetes = 1
 - Stroke/ TIA = 2
 - Score \geq 2, Coumadin is recommended

Risk Factors

- 4. Diabetes:
 - Risk of stroke is at least tripled with diabetes
 - Patients >65 years old with diabetes – 68% die from coronary artery disease and 16% die from stroke
 - Treatment – It is very important to control the blood sugar.

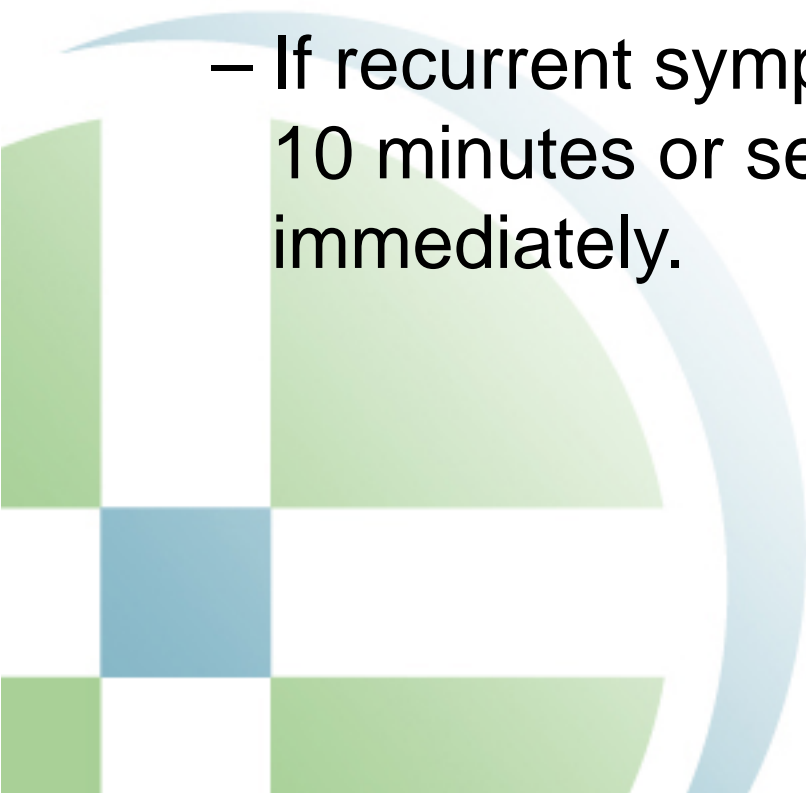


Risk Factors

- 5. TIA:
 - Transient Ischemic Attack - “Mini Stroke”
 - May be a warning sign of bigger stroke to follow soon.
 - One study of 1707 patient with TIA
 - 180 (10%) – Stroke in next 90 days
 - 91(5%) – stroke in next 2 days
 - Greatest risk for those >60 years old, diabetes, focal weakness or speech problems, and symptoms lasting > 10 minutes.

TIA Treatment

- Treatment for TIA:
 - Be seen by medical provider soon, even if symptoms last only a few minutes.
 - If recurrent symptoms or last greater than 10 minutes or severe symptoms go the ER immediately.



Risk Factors

- Other Modifiable Risk Factors:
 - Dyslipidemia (High Cholesterol)
 - Carotid Stenosis
 - Sickle Cell Disease
 - Post Menopausal Hormone Therapy
 - Birth Control Pills
 - Poor Diet / Nutrition
 - Physical Inactivity
 - Obesity

Warning Signs of Stroke

1. Sudden numbness or weakness or the face, arm or leg, especially on one side of the body.
2. Sudden confusion or trouble speaking or understanding speech.
3. Sudden trouble seeing in one or both eyes.



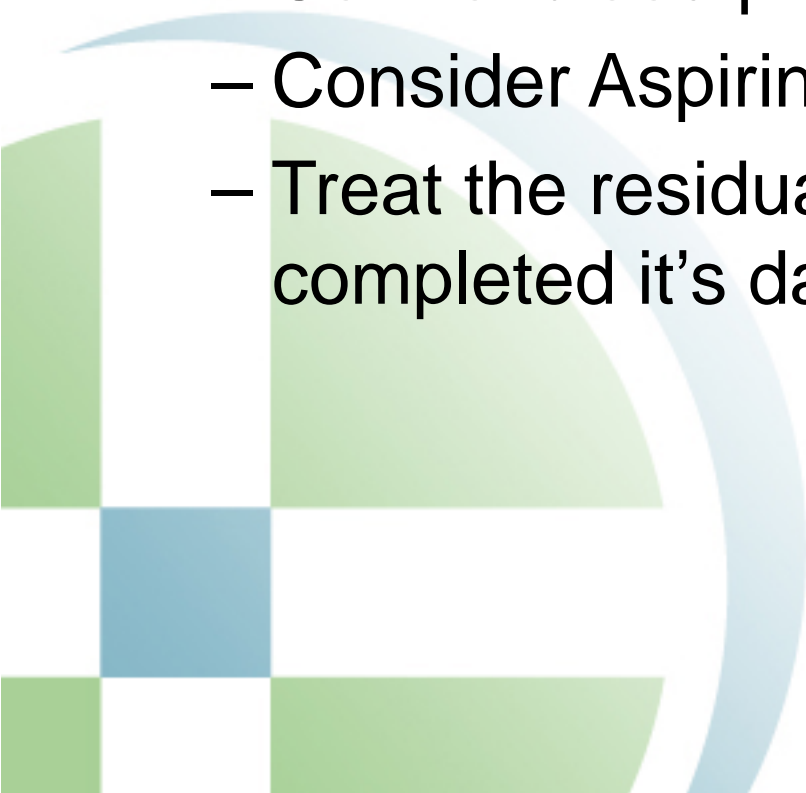
Warning Signs of Stroke

4. Sudden trouble walking, dizziness, or loss of balance or coordination.
5. Sudden severe headache with no known cause.



Treatment

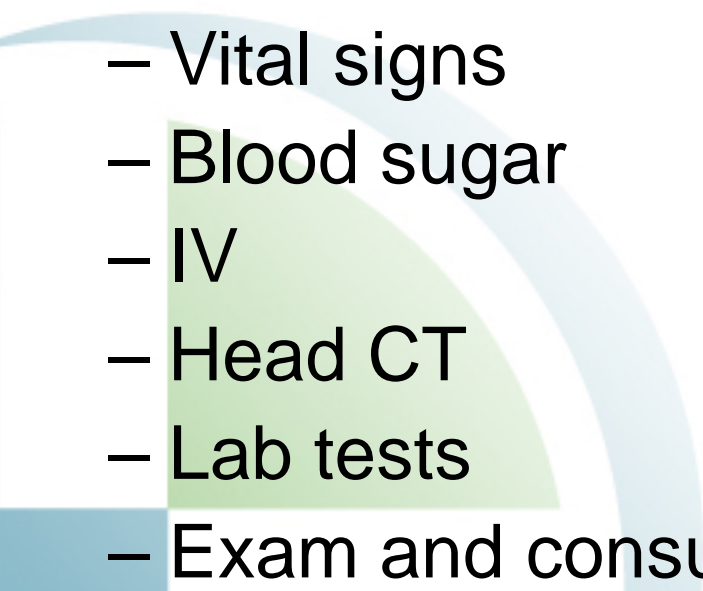
- “The Old Days”
 - Admit to hospital and observe
 - Control blood pressure
 - Consider Aspirin or other blood thinner
 - Treat the residual effects of the stroke after it completed it’s damage (Rehab and Therapy)



Treatment

- The New Protocols:
 - Identify and treat stroke as soon as possible
 - Time is brain!!!
 - The Telestroke Protocol:
 - Using telemedicine, we connect with the neurologist.
 - We can look at head CT immediately with the neurologist.
 - Decide on treatment course quickly.

Treatment

- If symptoms - get to the ER ASAP!
 - “Stroke Code”
 - Heart monitor
 - Vital signs
 - Blood sugar
 - IV
 - Head CT
 - Lab tests
 - Exam and consult with neurologist
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Treatment

- Telestroke
- Video: <http://grhsonline.org/stroke-care/>

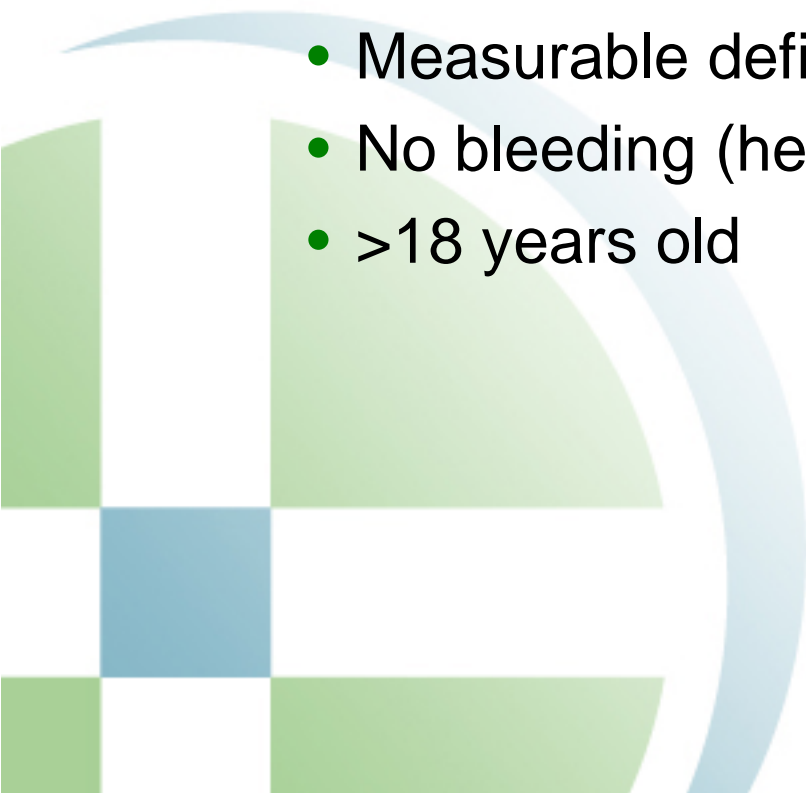


Treatment

- Possible treatments:
 - TPA - “Tissue Plasminogen Activator” or “Clot Buster”
 - Can be infused quickly and available in the ER
 - If conditions are right and it works well, the stroke symptoms can be reversed in minutes.
 - There are fairly clear indications and contraindications.

Treatment

- TPA:
 - Indications:
 - Onset of stroke within 3 hours
 - Measurable deficit
 - No bleeding (hemorrhage) on head CT
 - >18 years old



Treatment

- TPA:
 - Contraindications:
 - Minor or rapidly improving symptoms
 - Seizure at onset of stroke
 - Stroke or head injury in last 3 months
 - Major surgery in last 14 days
 - History of intracranial hemorrhage
 - Blood pressure >185/110
 - Abnormal labs (bleeding times, platelets, glucose)
 - Many of these are relative, per the radiologist

Treatment

- **Interventional Radiology:**
 - If the clot is likely small or the time has been too long to safely do TPA, in some cases the radiologist can use a small catheter to remove the clot manually from the vessel in the brain.
 - Can also put TPA directly into the artery at the level of the clot



Video – Penumbra System Animation, Cure4brainaneurysm, Penumbra stroke system

<http://www.youtube.com/watch?v=lyfzNgrVOOk>



Treatment

- Goals in treatment:
 - Start TPA within 3 hours of onset of symptoms, if indicated
 - Get patient to stroke center within 6 hours of onset of symptoms for inter-arterial treatment if indicated
 - Call “Stroke Code” as soon as stroke suspected, even in the field
 - Head CT ASAP
 - Assess for contraindications quickly

Treatment

- How do we do at GRHS:
 - First Quarter 2011:
 - Door to Drug times:
 - To date – 59 minutes (n=15)
 - First quarter 2011 – 39 minutes

 - % Ischemic Stroke treated with TPA:
 - To date – 24% (19/79)
 - First quarter 2011 – 33% (1/3)



Questions



Thank You!

