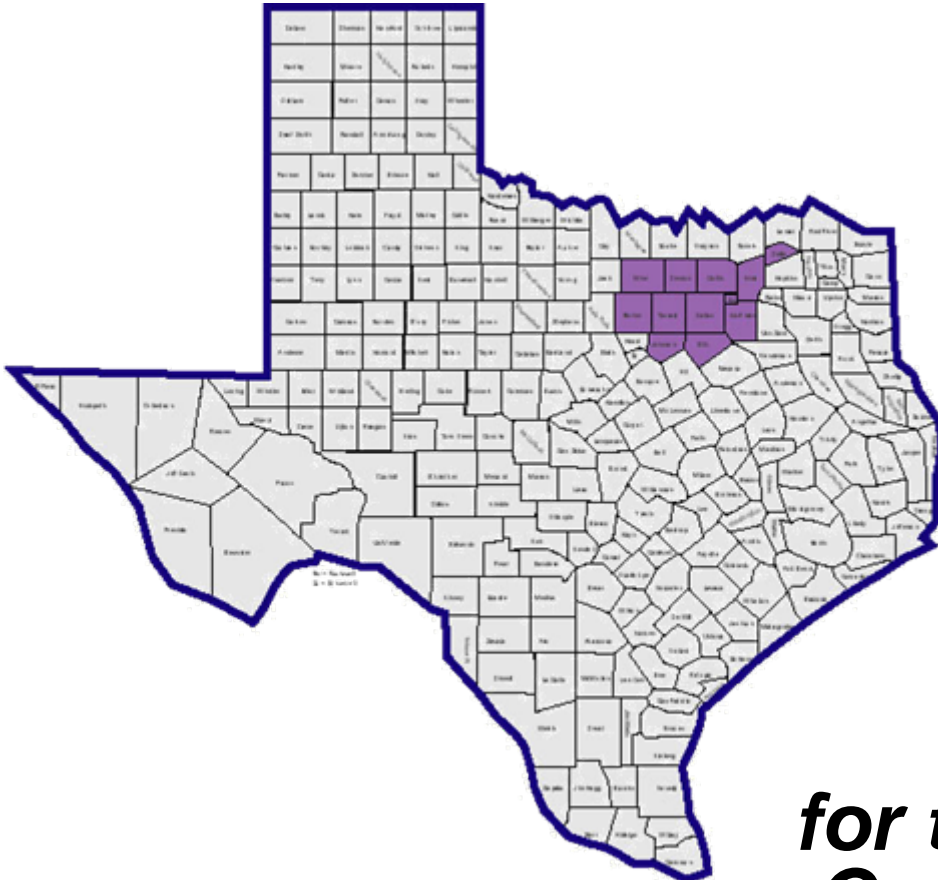




Parkland



*Our  
Community  
Health*

**for the Dallas/  
Fort Worth  
Combined  
Metropolitan  
Statistical  
Area**

*Checkup  
2007*

**for the Dallas/Fort Worth  
Combined Metropolitan  
Statistical Area**

Brad Walsh and Sue Pickens Owens



## ➤ Purpose

- ✓ Disproportionate Share Requirements (State requirement for hospitals service a disproportionate share of Medicaid and indigent populations)
- ✓ Community Benefit Standard (State requirement of non-profit hospitals)
- ✓ Meet IRS requirements for non-profit hospitals

## ➤ Uses

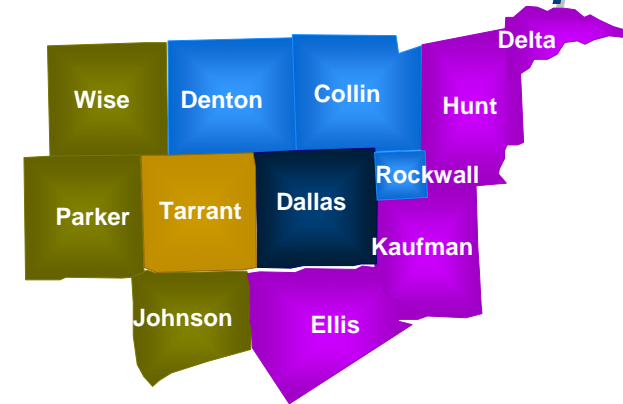
- ✓ Tracking the health of the community
- ✓ Identifying community needs and promoting community health
- ✓ Guide for community health outreach targets
- ✓ Identifying need for public health interventions, monitoring effectiveness of interventions
- ✓ Starting place for regional healthcare planning (e.g. physician needs, medically underserved areas, locations of low income medically indigent populations)
- ✓ Guide for identifying new community health center clinic sites
- ✓ Establishing goals and objectives for grants

## ➤ Support

- ✓ Supported through funding from a DFW-Hospital Collaborative of Disproportionate Share and Not-for-profit hospitals in the MSA.
- ✓ Dallas Fort Worth Health Industry Council – Health Status Report Card for Texas



# 2007 Community Health *Checkup*



## ➤ Geography

- ✓ MSA
- ✓ Dallas County: analyses for 12 Service Areas based on Census Tracts, 84 Planning Districts (smaller groupings of census tracts – defined by the North Central Texas Council of Governments), and the whole county
- ✓ Tarrant County: analyses for 11 sub-county service areas, planning districts and the whole county
- ✓ Collin County: analyses for 3 service areas; Denton, Johnson and Parker Counties: 2 Service areas each; planning district analyses for each county and a county wide analysis

## ➤ Changes in the Community Health *Checkup*

- ✓ New features in birth outcomes, market share trends and pediatric prevention quality indicators
- ✓ Future web based product that will allow the user more customization



## **Epidemiologic Analysis**

- Demographic Population Variables
- Births & Birth Related Information
- Age Adjusted Death rates
- Prevention Quality Indicators (potentially preventable hospitalizations)
- Hospital Market Share
- Causes of Hospitalization
- Access to Primary Care
- Injury Data
- Communicable Disease Morbidity
- Chronic Disease Prevalence
- Health Insurance Estimates
- Healthcare Manpower Estimates



## Any special studies of local interest

- City of Fort Worth public health assessment
- Tarrant County Drug Impact Index
- Rincon & Associates' annual Hispanic market surveys
- Commercial data providers (Solucient, Gallup, etc.)
- United Way annual needs assessments
- Special sub-county BRFSS studies
- Anything else we can get our hands on (health department projects, marketing/focus group research, needs assessments, reports, theses, etc.)

*Using Prevention Quality Indicators (PQI/PDI) and  
Inappropriate ED Utilization Data to Characterize  
Primary Care Need and Uncompensated Care Burden  
and Determine Service Location Geographies*



**Parkland**  
*Health & Hospital System*



The Prevention Quality Indicators (PQIs) are a set of measures that can be used with hospital inpatient discharge data to identify quality of care for "ambulatory care-sensitive conditions." These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.

Even though these indicators are based on hospital inpatient data, they provide insight into the community health care system or services outside the hospital setting.

-- [http://www.qualityindicators.ahrq.gov/pqi\\_overview.htm](http://www.qualityindicators.ahrq.gov/pqi_overview.htm)



Patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management. Patients may be hospitalized for asthma if primary care providers fail to adhere to practice guidelines or to prescribe appropriate treatments. Patients with appendicitis who do not have ready access to surgical evaluation may experience delays in receiving needed care, which can result in a life-threatening condition—perforated appendicitis.

-- [http://www.qualityindicators.ahrq.gov/pqi\\_overview.htm](http://www.qualityindicators.ahrq.gov/pqi_overview.htm)





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Because the PQIs are calculated using readily available hospital administrative data, they are an easy-to-use and inexpensive screening tool. They can be used to provide a window into the community—to identify unmet community health care needs, to monitor how well complications from a number of common conditions are being avoided in the outpatient setting, and to compare performance of local health care systems across communities.

-- [http://www.qualityindicators.ahrq.gov/pqi\\_overview.htm](http://www.qualityindicators.ahrq.gov/pqi_overview.htm)



## Adult Prevention Quality Indicators (PQIs)

- Diabetes, short-term complications (PQI 1)
- Perforated appendicitis (PQI 2)
- Diabetes, long-term complications (PQI 3)
- Chronic obstructive pulmonary disease (PQI 5)
- Hypertension (PQI 7)
- Congestive heart failure (PQI 8)
- Low birth weight (PQI 9)
- Dehydration (PQI 10)
- Bacterial pneumonia (PQI 11)
- Urinary infections (PQI 12)
- Angina without procedure (PQI 13)
- Uncontrolled diabetes (PQI 14)
- Adult asthma (PQI 15)
- Lower extremity amputations among patients with diabetes (PQI 16)



# Pediatric Prevention Quality Indicators (PDIs)

## Area-Level

- Pediatric Asthma (PDI 14)
- Diabetes, short-term complications (PDI 15)
- Pediatric gastroenteritis (PDI 16)
- Perforated appendicitis (PDI 17)
- Pediatric Urinary infections (PDI 18)



# PQI Index

	South Dallas	Dallas Cnty.	% of Cnty rate		South Dallas	Dallas Cnty.	% of Cnty rate
Diabetes Short Term Comp – Adult	135.0	61.3	220.2%	Uncontrolled Diabetes	43.4	16.7	258.8%
Perforated Appendix – Adult	0.0%	26.9%	0.0%	Angina W/O Procedure	5.0	6.6	75.8%
Diabetes Long Term Comp	320.0	117.9	271.4%	Asthma – Adult	135.0	38.1	354.3%
COPD	240.0	124.6	192.6%	Lower Extremity Amputation Among Diabetics	240.0	124.6	192.6%
Essential Hypertension	120.0	57.1	210.2%	Asthma – Child	358.6	210.2	170.6%
Congestive Heart Failure	1035.0	396.7	260.9%	Diabetes Short Term Comp – Child	36.8	37.0	99.5%
Dehydration	155.0	95.3	162.6%	Gastroenteritis – Child	12.8	34.1	37.5%
Bacterial Pneumonia	435.0	289.7	150.2%	Perforated Appendix – Child	40.0%	45.7%	87.5%
UTI – Adult	270.0	156.4	172.6%	UTI – Child	51.2	43.4	117.9%
				PQI INDEX			168.6%



# PQI Index

	Northern Corridor	Dallas Cnty.	% of Cnty rate		Northern Corridor	Dallas Cnty.	% of Cnty rate
Diabetes Short Term Comp – Adult	19.6	61.3	32.0%	Uncontrolled Diabetes	3.7	16.7	22.2%
Perforated Appendix – Adult	35.1%	26.9%	130.5%	Angina W/O Procedure	2.9	6.6	43.9%
Diabetes Long Term Comp	50.5	117.9	42.8%	Asthma – Adult	12.8	38.1	33.6%
COPD	98.1	124.6	78.7%	Lower Extremity Amputation Among Diabetics	98.1	124.6	78.7%
Essential Hypertension	22.1	57.1	38.7%	Asthma – Child	115.5	210.2	54.9%
Congestive Heart Failure	266.8	396.7	67.3%	Diabetes Short Term Comp – Child	12.1	37.0	32.7%
Dehydration	77.5	95.3	81.3%	Gastroenteritis – Child	45.9	34.1	134.6%
Bacterial Pneumonia	213.4	289.7	73.7%	Perforated Appendix – Child	68.0%	45.7%	148.8%
UTI – Adult	132.9	156.4	85.0%	UTI – Child	39.1	43.4	90.1%
				PQI INDEX			67.5%



## About the COPC Model

- Parkland's Community Oriented Primary Care system is based on model developed and promoted by the National Academy of Science Institute of Medicine.
- This model has been implemented in a number settings – urban, rural, tribal populations, specific to disease, for establishment of health in primitive populations, and others.
- The COPC model consists of three key elements:
  - A practice actively engaged in primary care,
  - A defined community for which the practice has accepted responsibility for health care, and
  - A systematic process by which the practice, with the participation of the community, identifies and addresses the major health problems of the community.



## Guiding Principles

The Community-Oriented Primary Care will provide a medical home in which the health professional assumes ongoing responsibility for health maintenance and therapy.

- Services should be accessible to people in geographic areas of greatest need.
- Services should be comprehensive in scope for the types of patients served.
- Continuity of care must be maintained between the primary care clinics and other specialty and inpatient services.
- Services should be provided in an accountable manner with regard to the quality and potential benefits or risk incurred.
- Services should be provided efficiently.
- Services provided should be effective in terms of achieving predetermined “outcomes” such as reduction in morbidity or disability.
- Services will be subject to Parkland’s quality assurance program overseen by the JCAHO.



## An Updated Need Assessment

Parkland has adopted four new tools/information sources since the original need assessment was designed.

- The Community Need Index (CNI) is a product of Thompson-Reuters (previously Solicient)
  - The CNI aggregates five socioeconomic indicators known to contribute to health disparity – income, culture/language, education, housing status and insurance coverage.
  - These are applied at the zip code level to produce a score ranging from 1.0 (low need) to 5.0 (high need).
  - Residents with the highest CNI scores are shown to be twice as likely to experience preventable hospitalization for manageable conditions.
- The Prevention Quality Indicator (PQI) index is a product of Agency for Health Research and Quality (AHRQ).
  - AHRQ has defined 13 PQIs for adults and 5 for children that measure rates of inappropriate hospital admissions for illnesses that can be effectively managed with high-quality, community-based primary care.
  - For analytic purposes, we have compiled an index designed for adults and one designed for pediatrics.
  - Preventable hospitalizations are expensive – prevention through primary care can yield system savings.



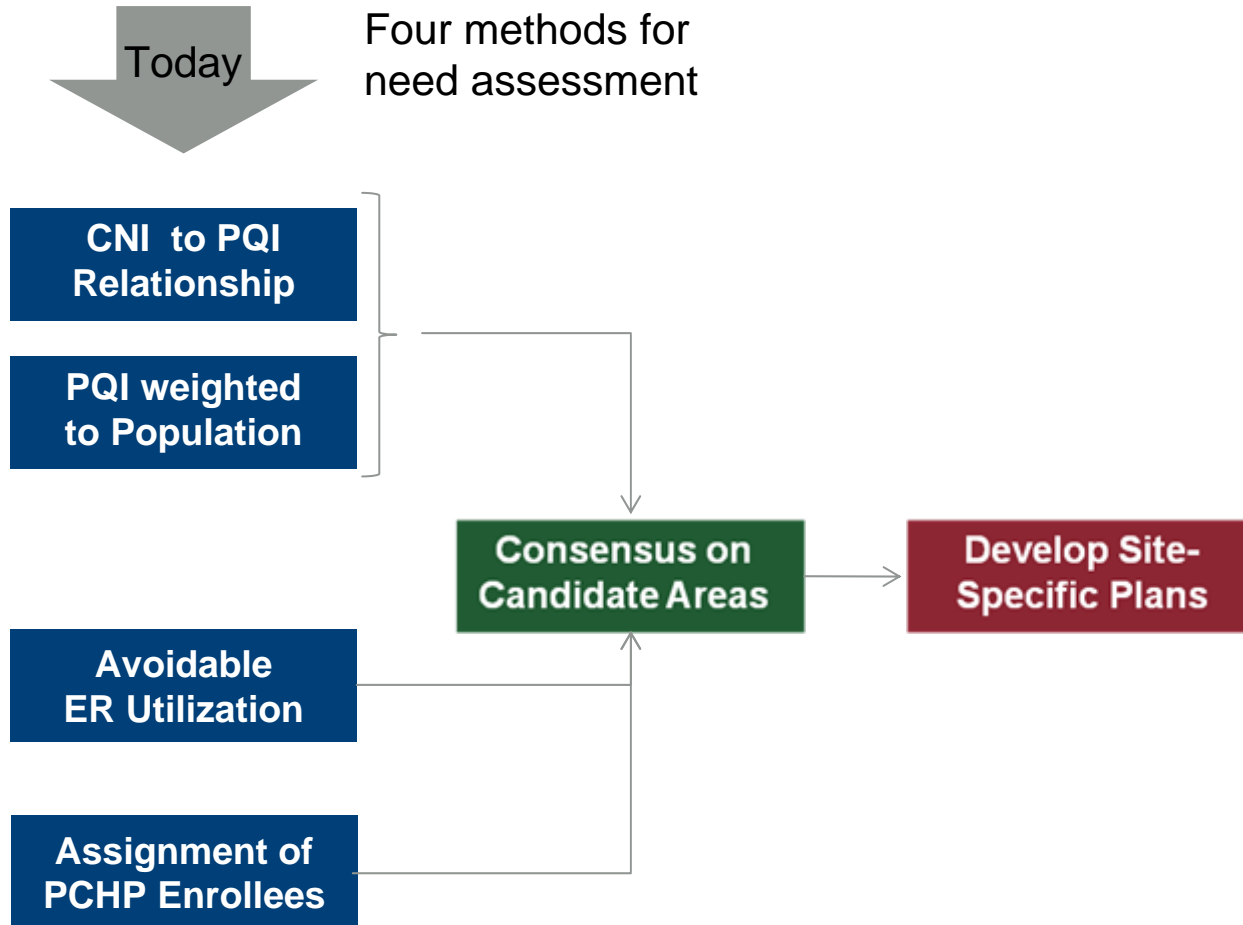


## An Updated Need Assessment

- The Dallas Fort Worth Hospital Council has established an [Emergency Department](#) data set
  - We obtained the 2007 data set capturing visits for Dallas County residents seen and released without inpatient admission by participating Hospital Council member hospitals (includes all major Dallas County hospitals).
  - By applying the New York algorithm, we have identified those visits that are sensitive to primary care intervention.
  - We approximated the visits associated with our target population by using Medicaid, Self Pay and Charity visits.
  
- The [Parkland Community Health Plan](#) enrollment by zip code
  - The Plan enrolled membership represent a subset of our target patient population – persons covered by Medicaid .
  - We obtained the number of Plan members by residence zip code and the number assigned to COPC sites or to non-Parkland providers.



# Need Assessment Approach

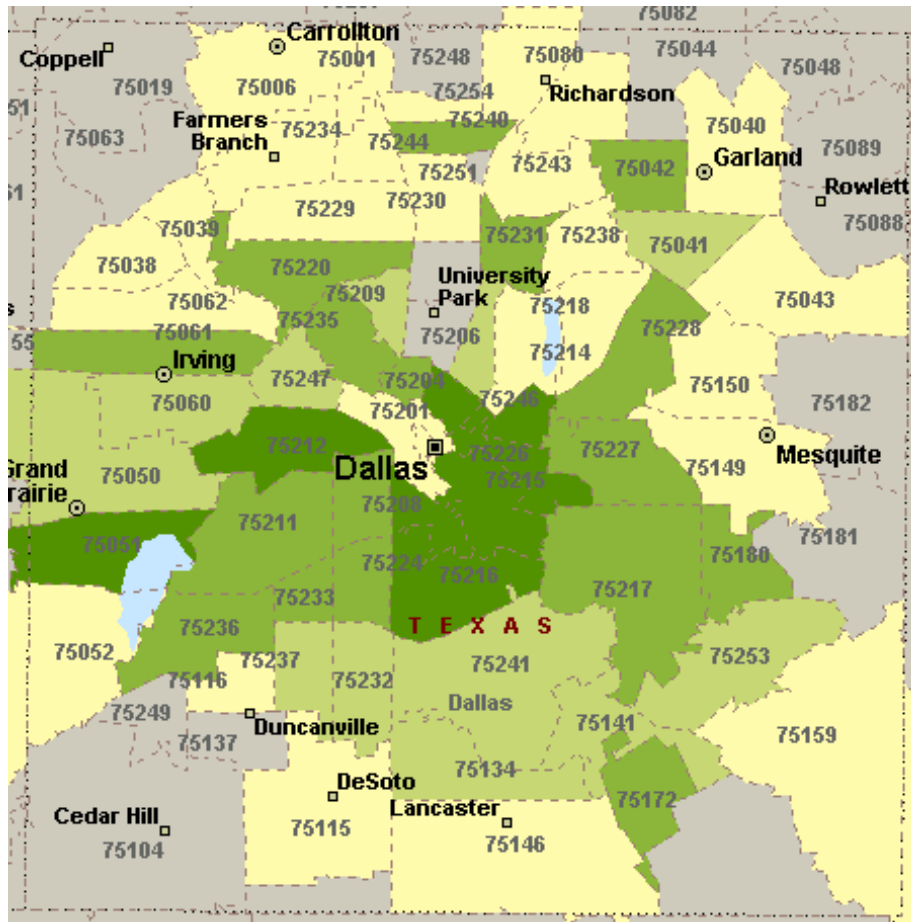




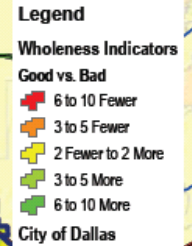
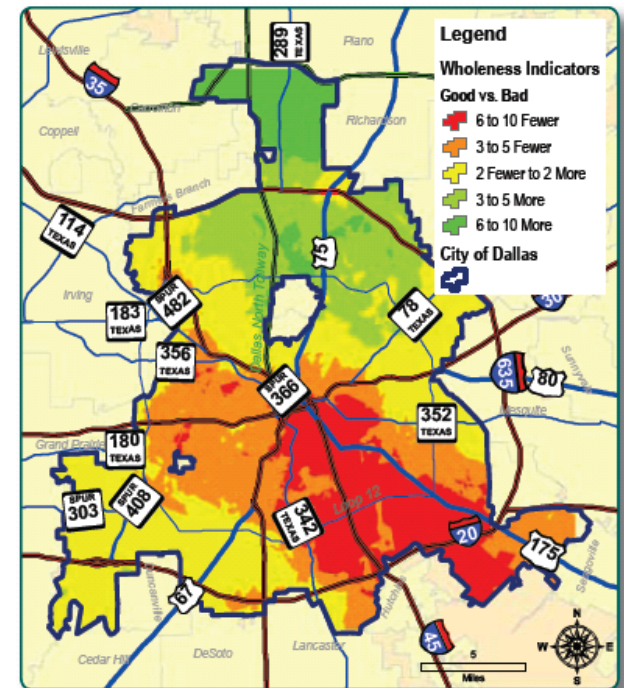
# Adult and Pediatric Population Community Need Index

Parkland

Community Need Index – 2007



*The CNI map resembles the Williams Institute’s Wholeness Index, but data are available for each of the 12 counties in the DFW CMSA.*

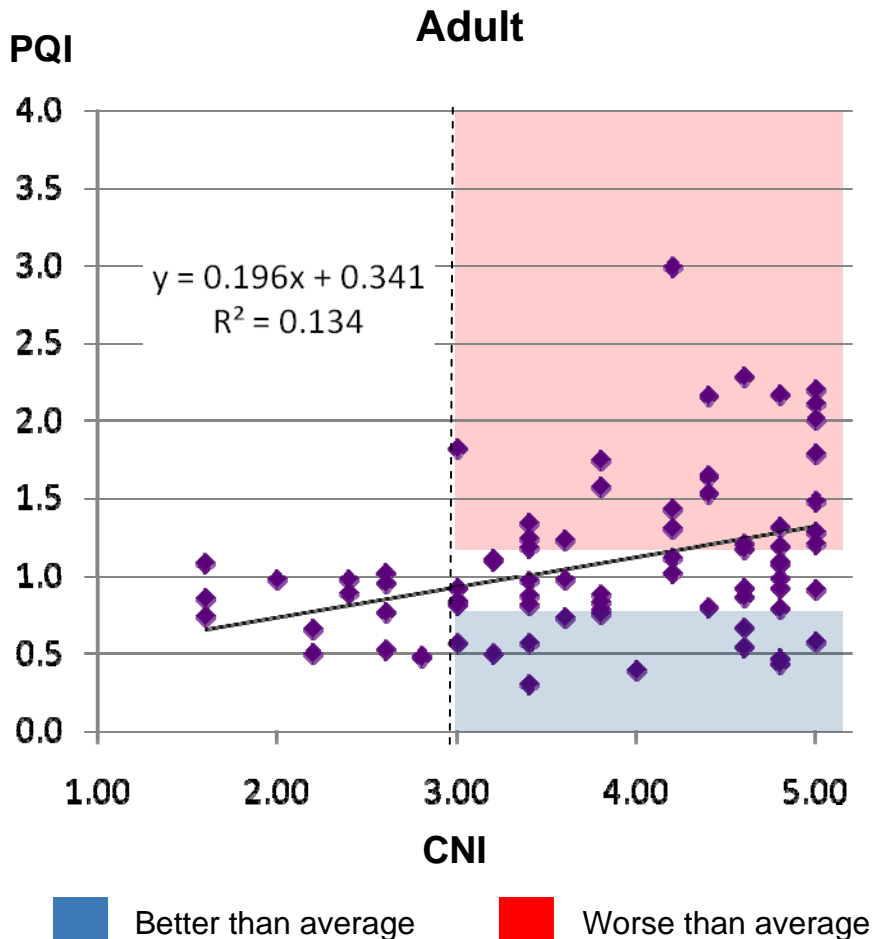








# Adult Population Relationship between CNI and PQI

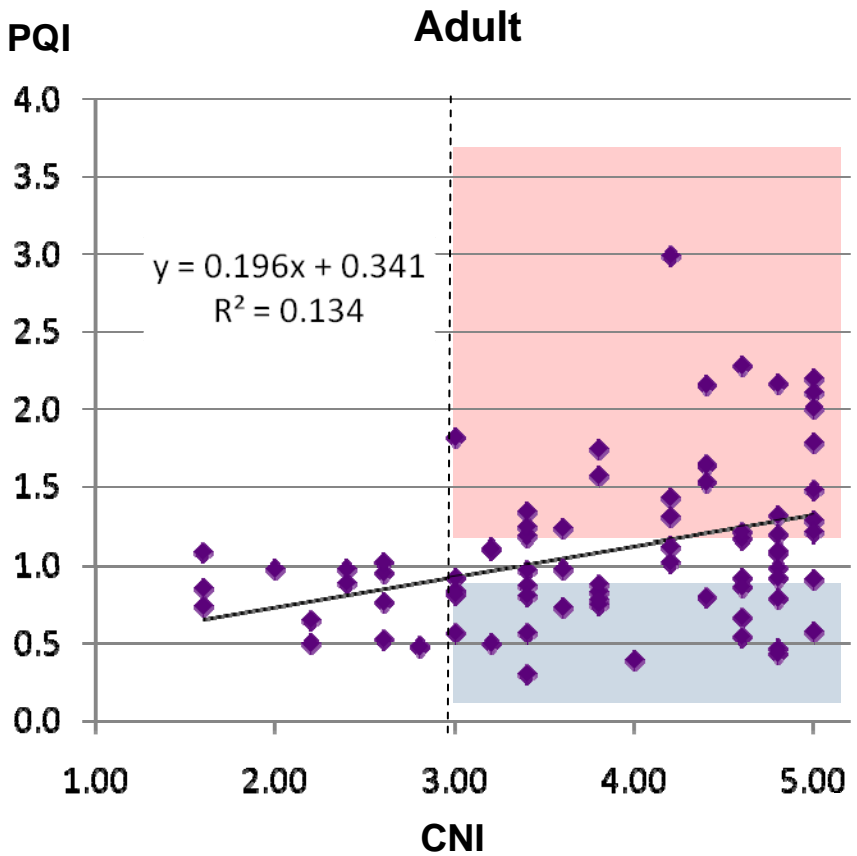


- The chart presents PQI / CNI intersect for each zip code.
- The data trend line is mapped showing with weak correlation an increase in preventable admissions associated with a higher CNI.
- The data points selected for the red shaded zone indicate those zip codes in which the preventable admissions are greater than 20 percent above the mean for all CNI greater than 3.00 – worse performance than average.
- The data points selected for the blue zone indicate those zip codes in which preventable admissions are more than 20 percent below the mean – better performance than average.



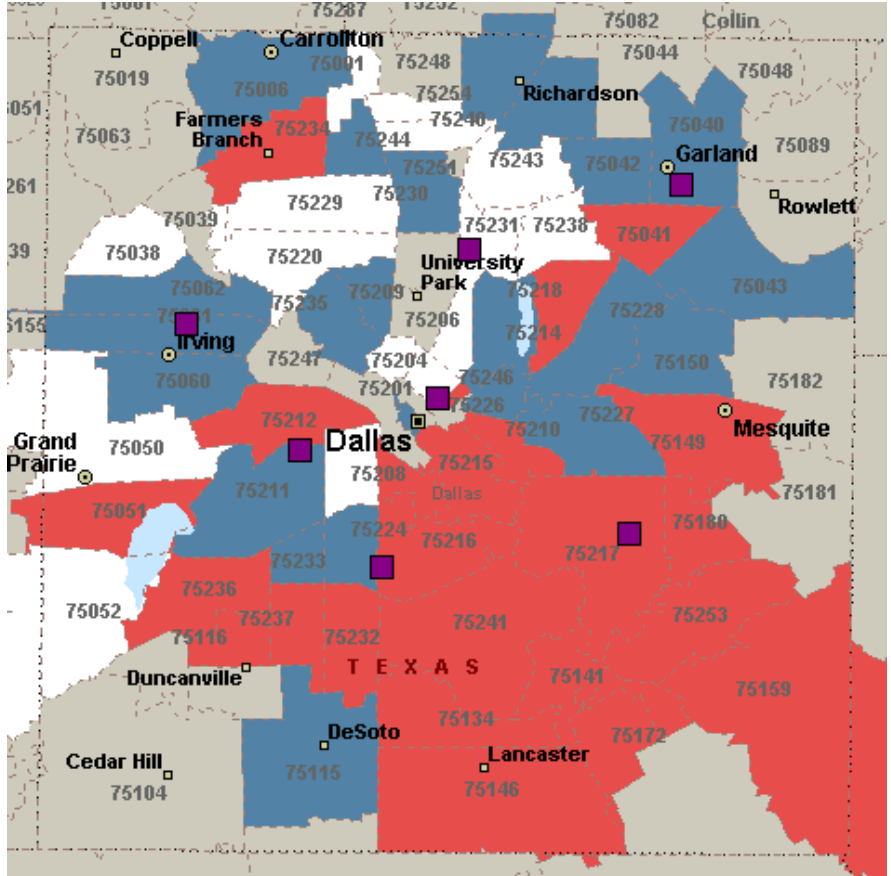
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# Adult Population Relationship between CNI and PQI



■ Better than average      ■ Worse than average

Map of Performance Zones  
(red=worse, blue-better)






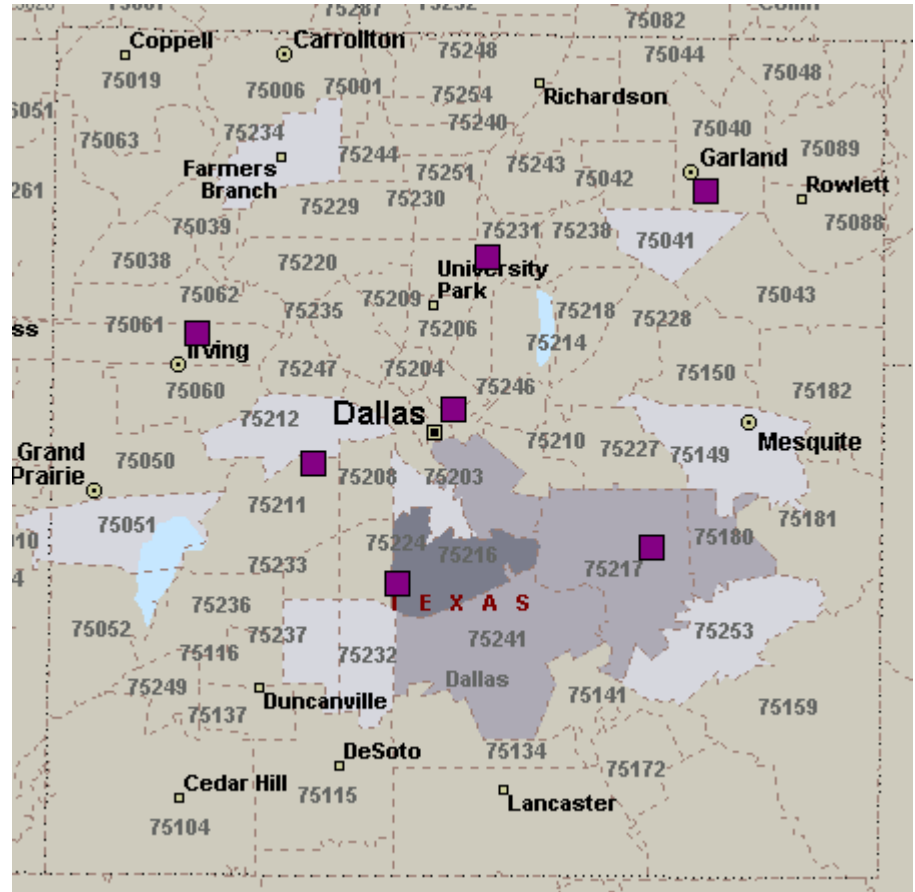




# Adult Population PQI Weighted by Population Size (Where CNI >3.0)

*Dallas County primary care improvement opportunity for the adult population, as weighted by population size, is stratified as presented in the map and defined by the legend below.*

-  High Target Population  
High Prevention Opportunity
-  High/Moderate Target Population  
High/Moderate Prevention Opportunity
-  Moderate Target Population  
Moderate Prevention Opportunity

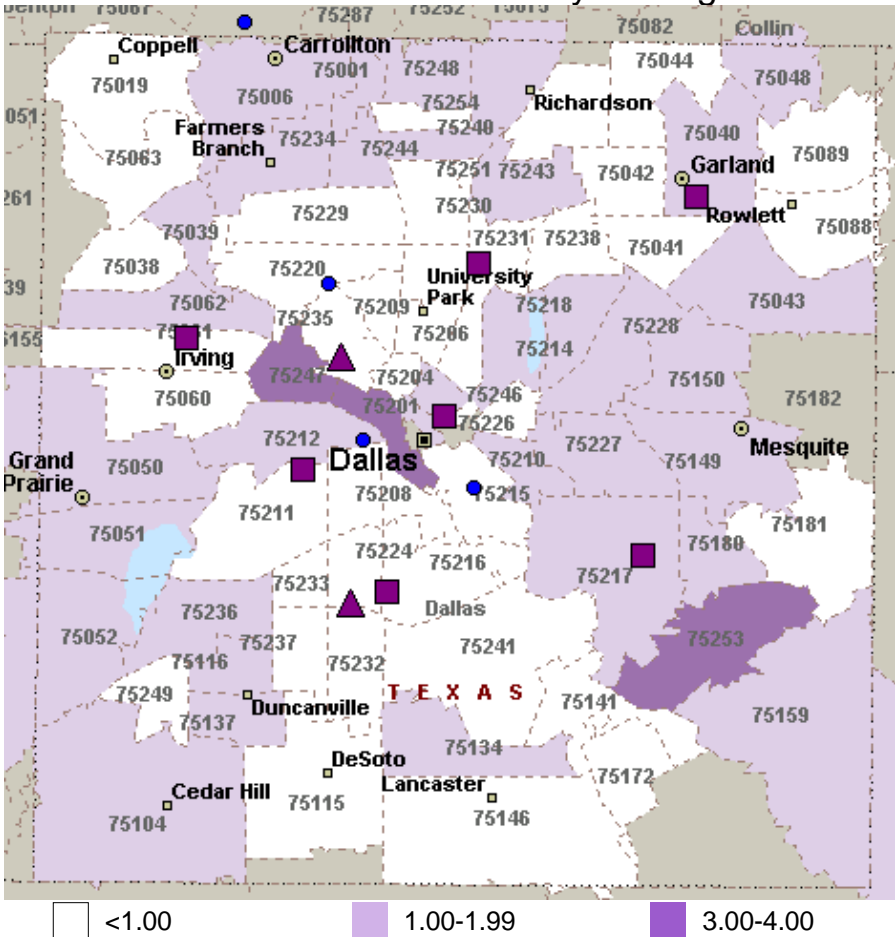






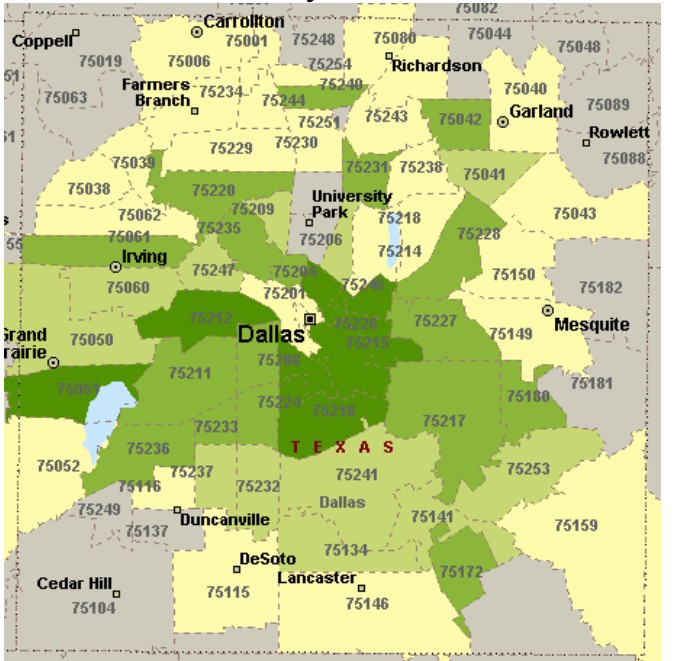
# Pediatric Population Prevention Quality Indicator

### Prevention Quality Indicator Indexed to County Average



*Interventions are most effective when targeting areas of highest prevention opportunity and highest community need.*

### Community Need Index

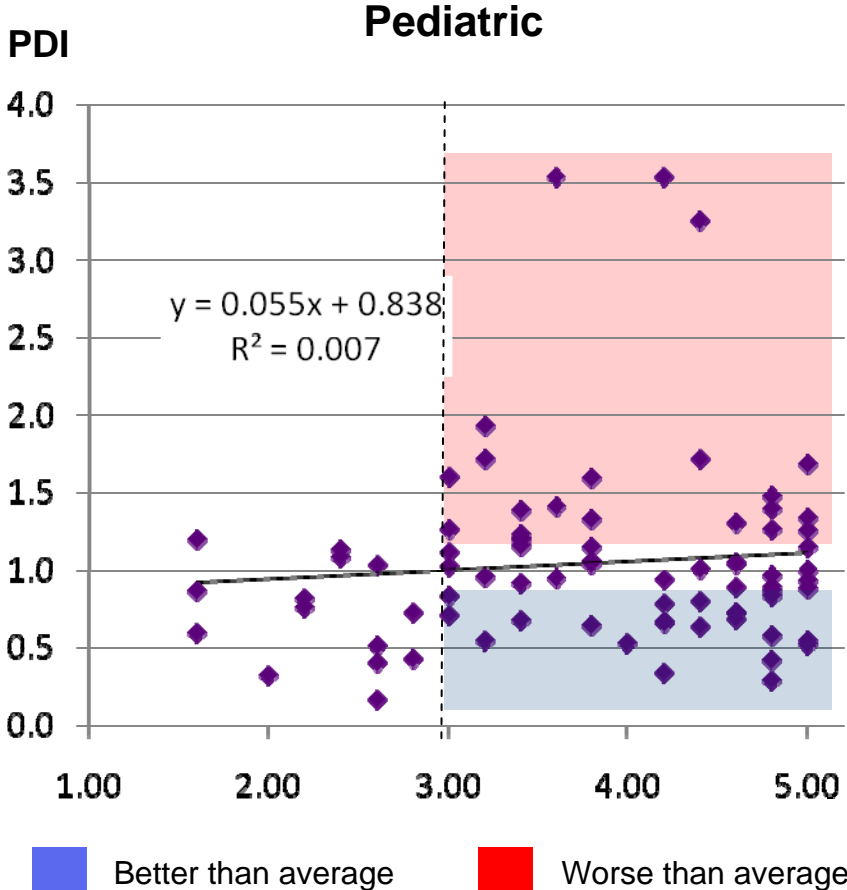


5.0   4.5-4.9   4.0-4.4   3.0-3.9  
Highest ← → Moderate

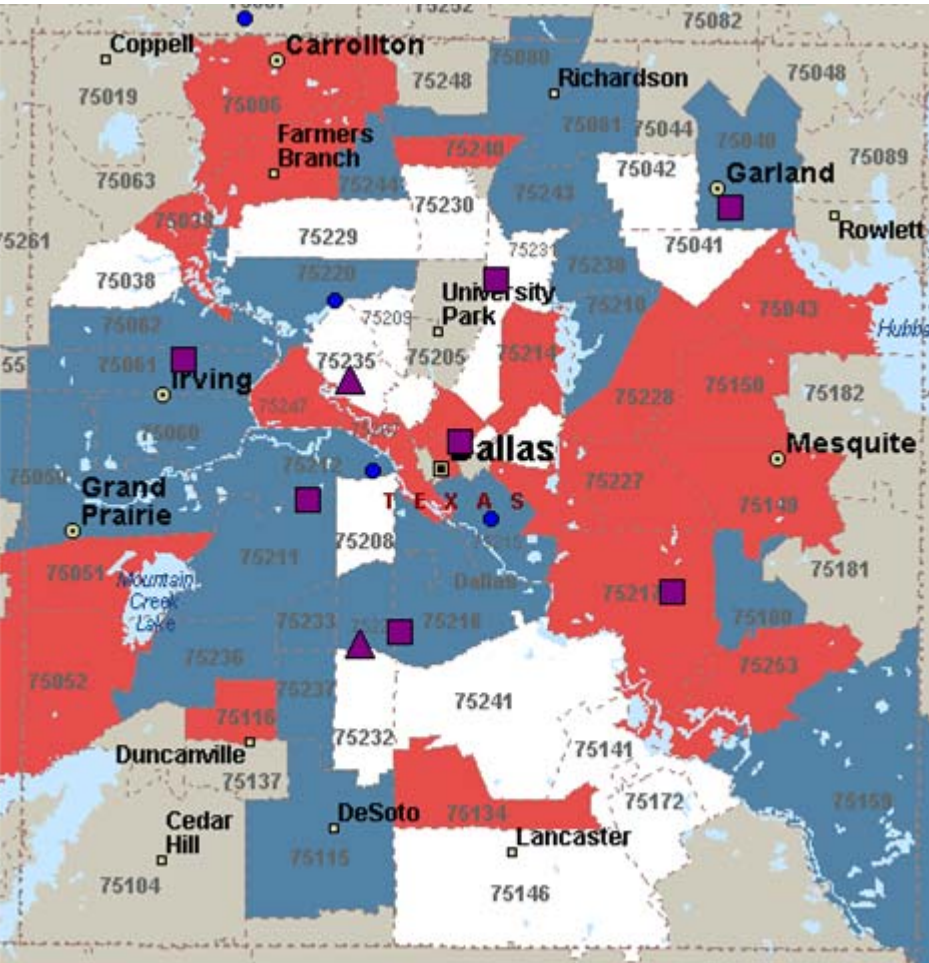


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# Pediatric Population Relationship between CNI and PQI






Map of Performance Zones  
(red=worse, blue=better)

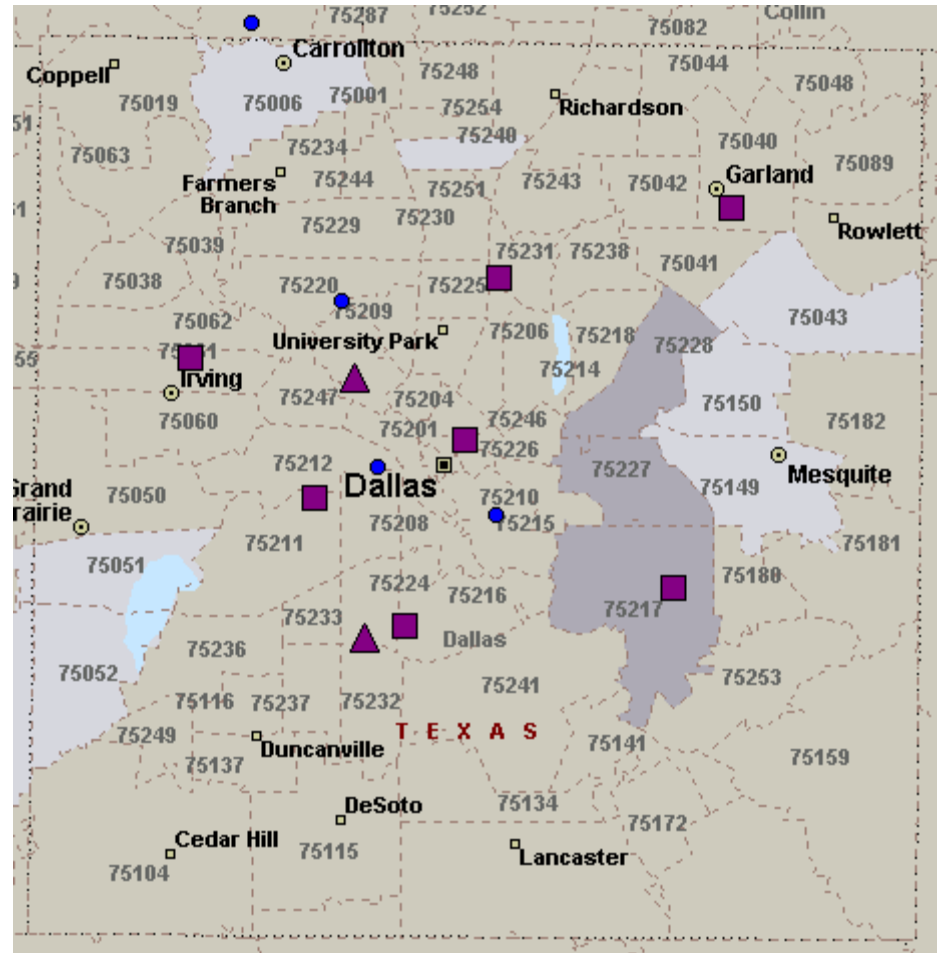




# Pediatric Population PQI Weighted by Population Size (Where CNI >3.0)

*Dallas County primary care improvement opportunity for the pediatric population, as weighted by population size, is stratified as presented in the map and defined by the legend below.*

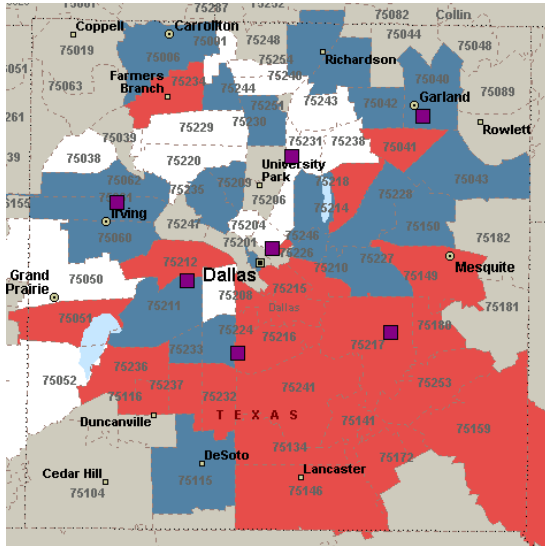
-  High Target Population  
High Prevention Opportunity
-  High/Moderate Target Population  
High/Moderate Prevention Opportunity
-  Moderate Target Population  
Moderate Prevention Opportunity



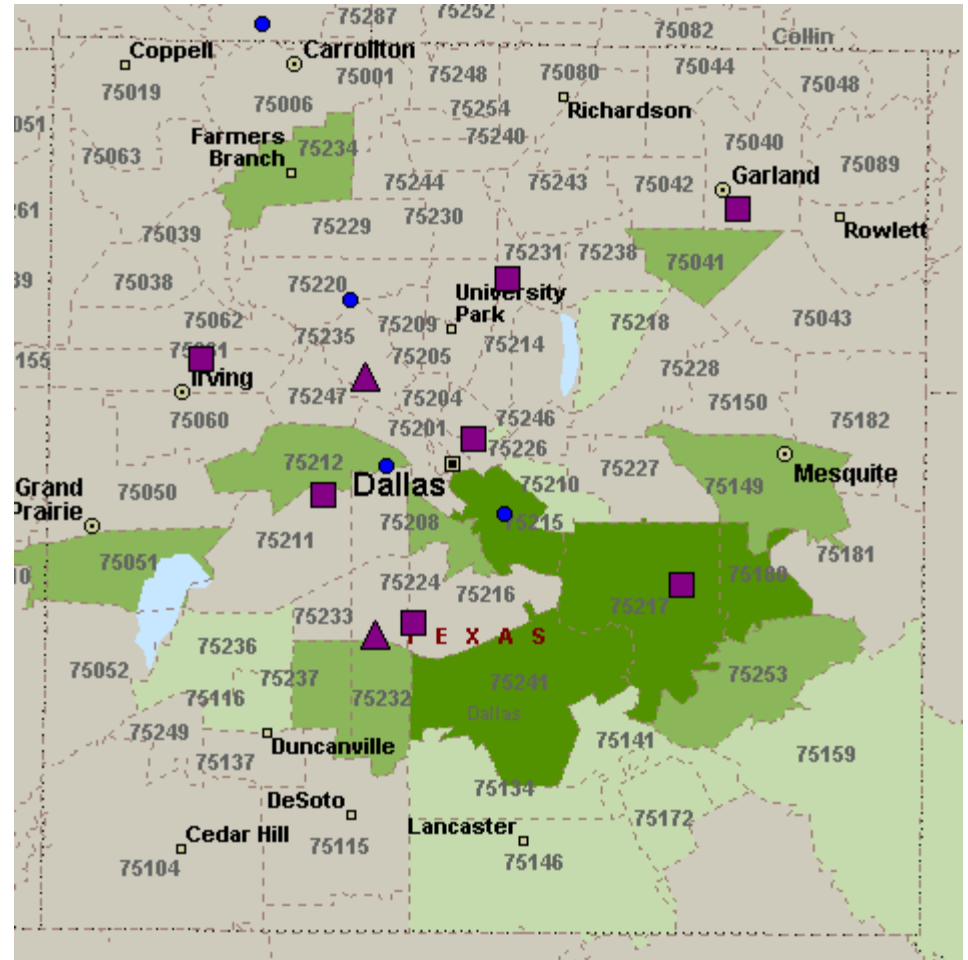


Parkland

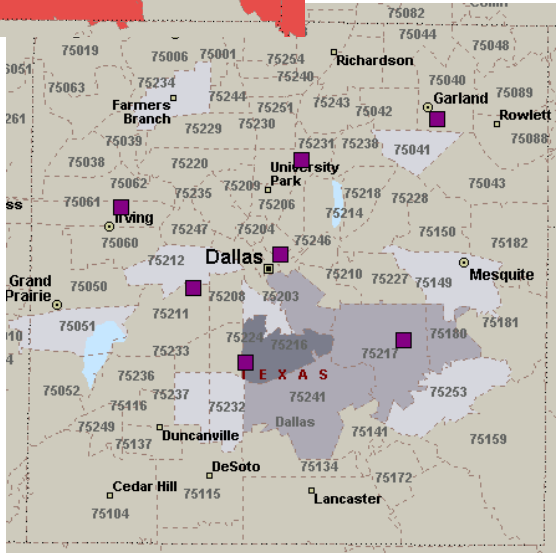
# Adult Population Combined CNI, PQI and Population Basis



PQI performance relative to CNI



PQI weighted by population size

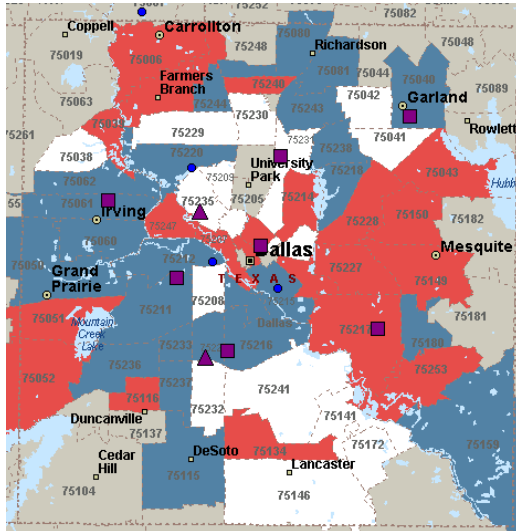




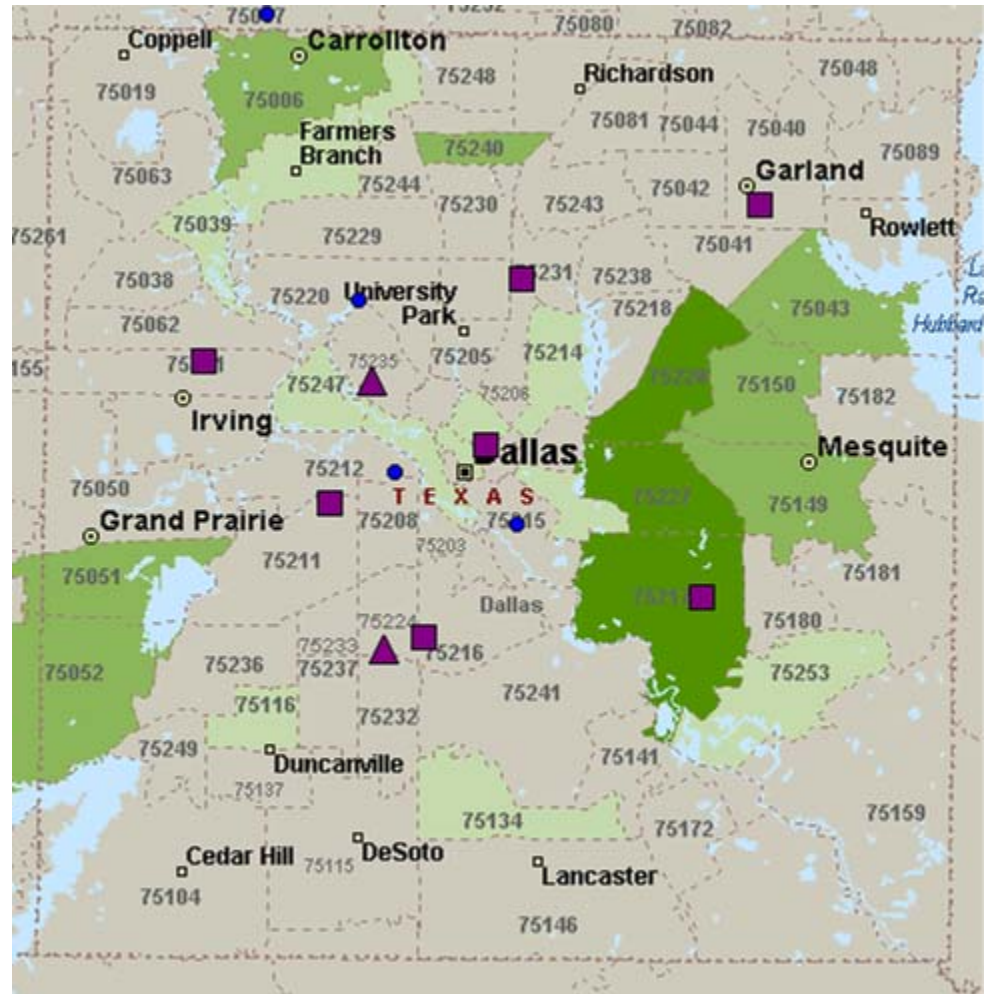


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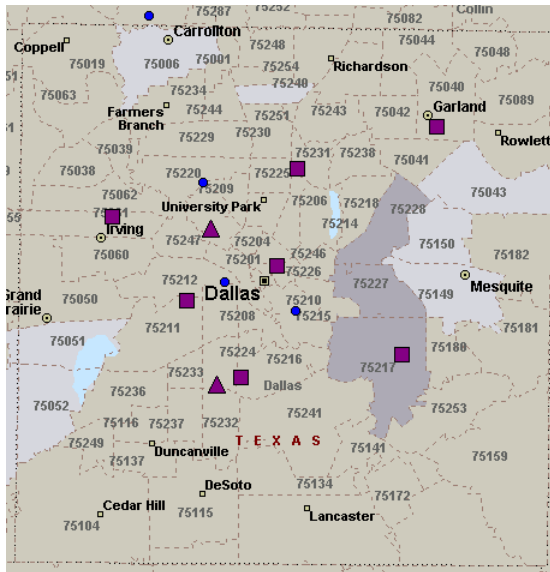
# Pediatric Population Combined CNI, PQI and Population Basis



PQI performance relative to CNI



PQI weighted by population size

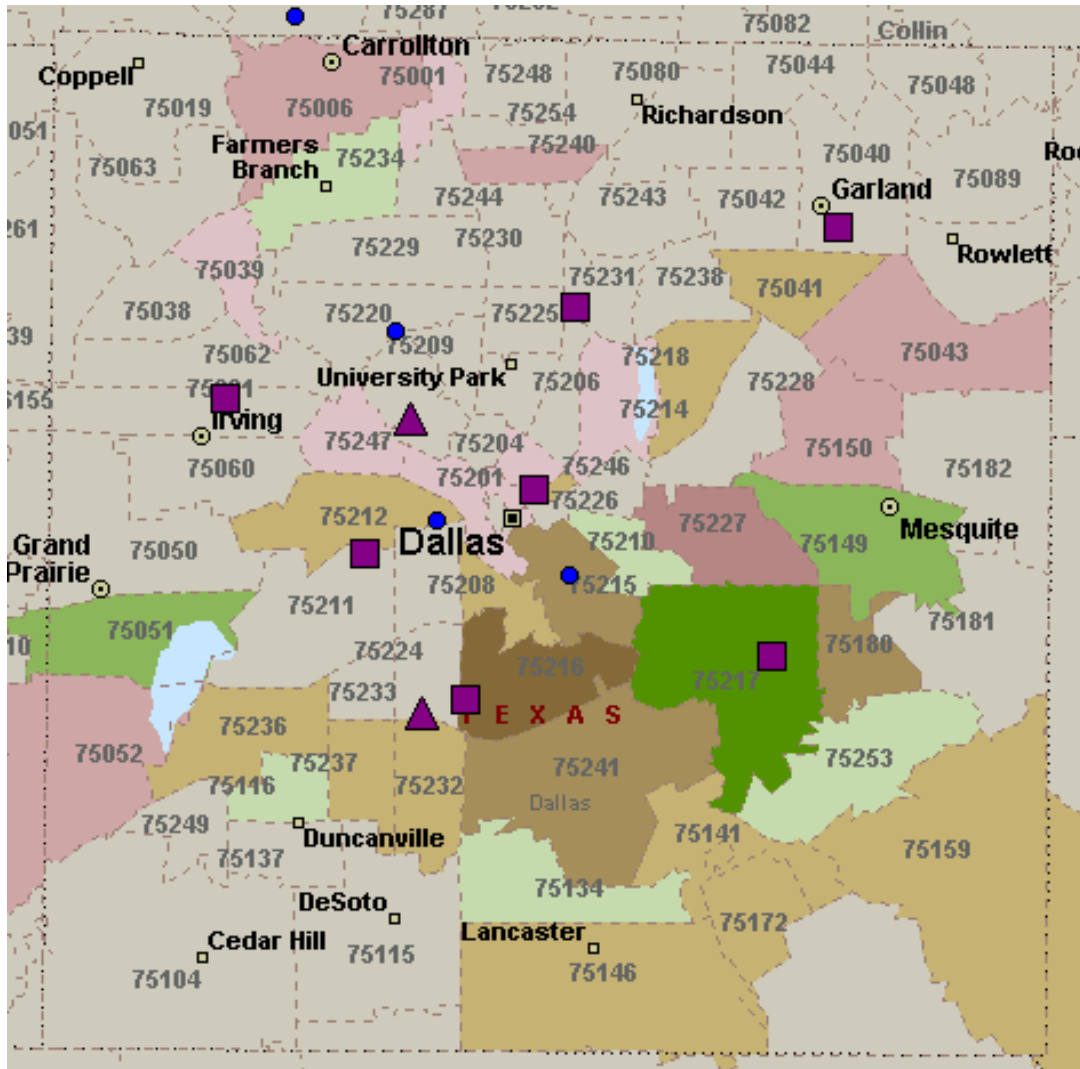




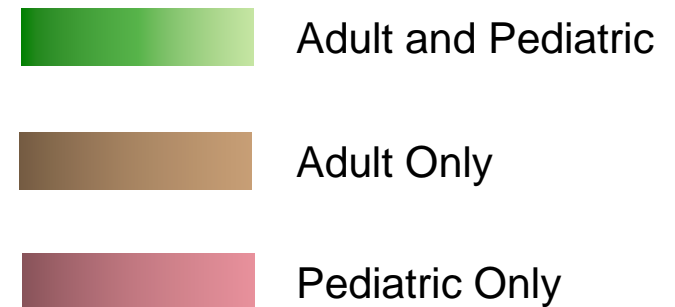
# Combined Adult and Pediatric Populations

## Consolidated CNI, PQI and Population Basis

Parkland



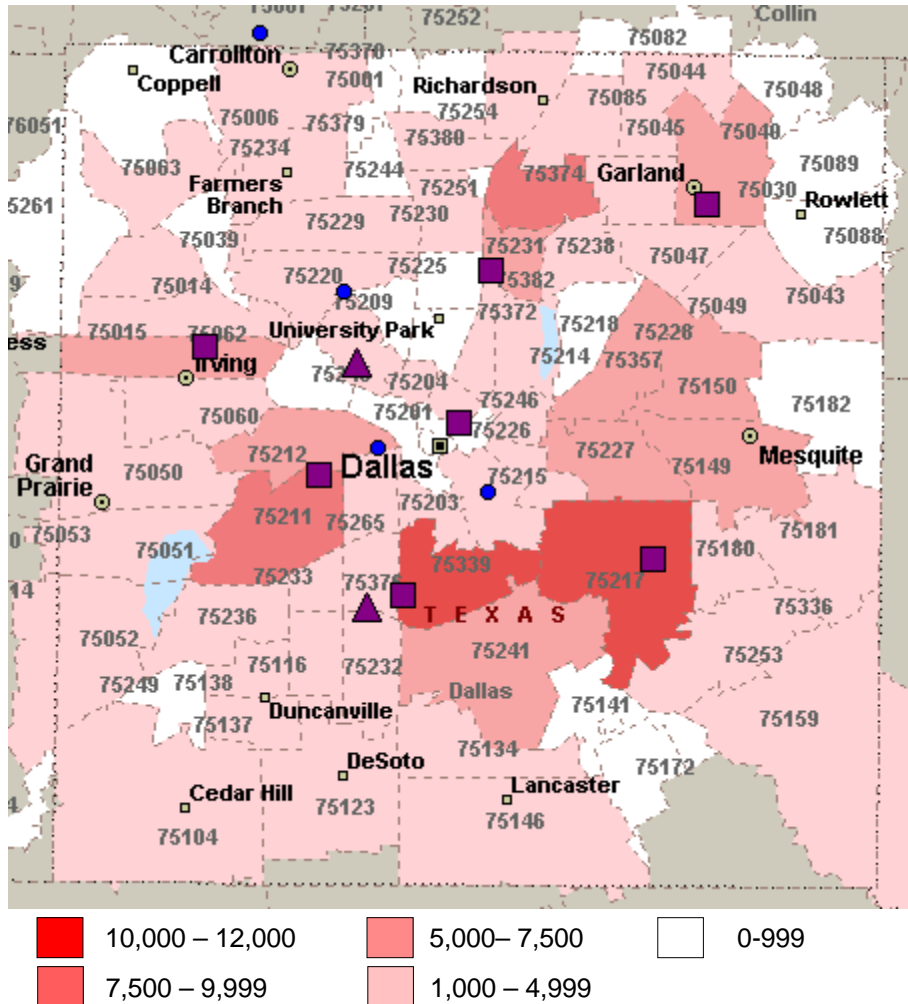
*This map presents the combined assessment for the adult and pediatric populations. Where both the adult and pediatric populations present need, the zip code is colored green; where the assessment indicates need for only one population base, the zip code is colored brown for adult only and rose for pediatric only.*





# Adult and Pediatric Population Avoidable Emergency Department Visits - 2007

Avoidable ED Visits



- This map presents the visits to Hospital Council participating hospitals from Dallas County residents with payer class of Medicaid, Self Pay and Charity.
- The visits summarized in this map represent 60 percent of all ED visits and fall into three categories:
  - Non emergency (24% of total ED visits).
  - Emergency care needed, but could have been treated in a primary care setting (27% of total ED visits).
  - Emergency care needed, but primary care could have prevented or avoided the problem (9% of total ED visits).

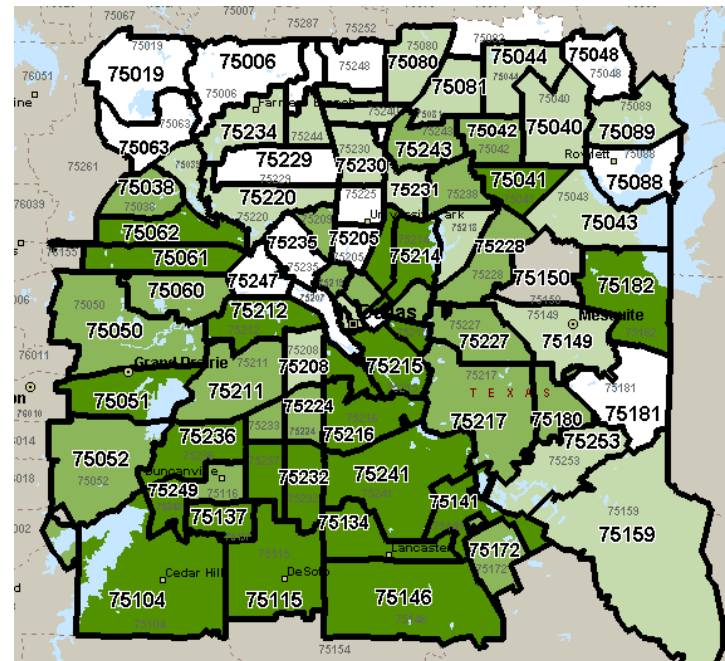
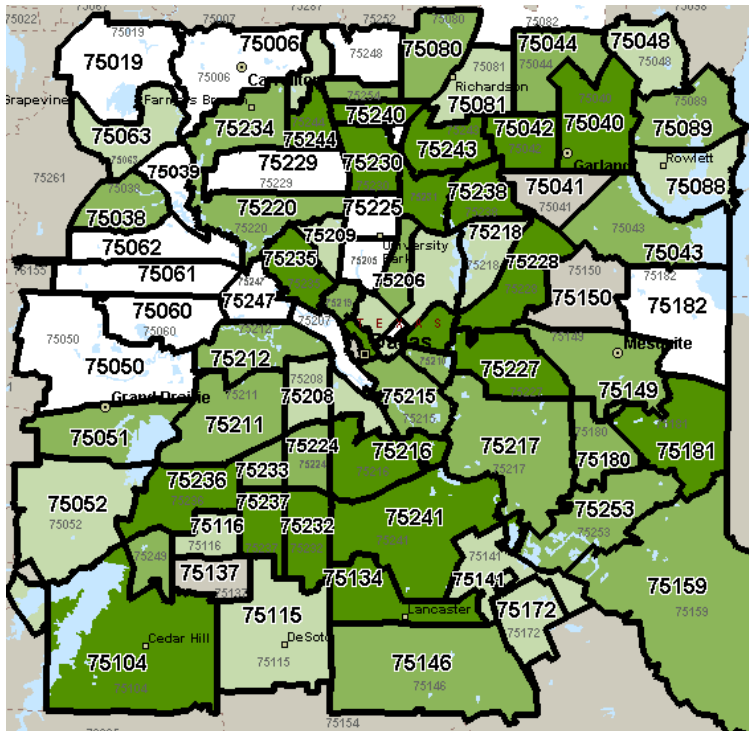


# Adult and Pediatric Population Avoidable Emergency Department Visits - 2007

ED Visits that were non-emergent (by quartiles)

- *Analysis of avoidable ED visits by classification gives additional nuance*

ED Visits that were emergent but primary care preventable (by quartiles)



Data are ED visits by patient ZIP, excluding commercially-insured and Medicare insured



