

### Cancer Inquiry Report

Summary of Initial Cancer Inquiry: Citizen is concerned about former employees at Square D/Scheider Electric in Peru Indiana. This site is currently going through remediation and the citizen is concerned about the long-term health and safety of the community and the employees. Unfortunately, we are unable to look up employment within our data, so we are only able to perform an analysis of available population data. The citizen states that employees live all throughout Miami county so both the county and the zip code of Peru Indiana were analyzed. As there is no good way to know how long this possible exposure could have been going on, both 5 year and 10-year analyses were done.

**Table 1: Cancer Rates between Indiana and County of Concern**

| Type of Cancer          | 2011-2020 |       |              |        | 2016-2020 |       |              |        |
|-------------------------|-----------|-------|--------------|--------|-----------|-------|--------------|--------|
|                         | Indiana   |       | Miami County |        | Indiana   |       | Miami County |        |
|                         | Count     | Rate  | Count        | Rate   | Count     | Rate  | Count        | Rate   |
| All Cancer              | 344,438   | 447.6 | 1,829        | 402.2* | 174,252   | 435.0 | 887          | 387.1* |
| Kidney and Renal Cancer | 14,270    | 18.67 | 75           | 16.47  | 7,350     | 18.59 | 33           | 14.81  |
| Myeloma                 | 5,258     | 6.79  | 20           | 4.79   | 2,637     | 6.54  | 10           | 4.76U  |
| Lymphomas               | 16,004    | 21.43 | 83           | 17.95  | 8,005     | 20.67 | 36           | 15.51  |
| Leukemias               | 10,559    | 14.20 | 60           | 14.15  | 5,259     | 13.61 | 34           | 15.26  |

Data Source: Indiana State Cancer Registry

Rates are Age-adjusted to the US 2000 Standard Population

\*County rate is statistically significantly higher or lower than the state rate

U Rates of cases less than 20 are considered statistically unstable

Excludes in situ and benign tumors

**Table 3: Standardized Incidence Ratios (SIR) Miami County**

| Type of Cancer          | Miami County 2011-2020 |           |         | Miami County 2016-2020 |           |         |
|-------------------------|------------------------|-----------|---------|------------------------|-----------|---------|
|                         | SIR                    | 95% CI    | P-Value | SIR                    | 95% CI    | P-Value |
| Kidney and Renal Cancer | 0.90                   | 0.70-1.10 | 0.33    | 0.78                   | 0.52-1.05 | 0.11    |
| Myeloma                 | 0.65                   | 0.36-0.93 | 0.01    | 0.65                   | 0.25-1.06 | 0.09    |
| Lymphomas               | 0.89                   | 0.70-1.09 | 0.27    | 0.79                   | 0.53-1.04 | 0.10    |
| Leukemias               | 0.98                   | 0.73-1.23 | 0.89    | 1.14                   | 0.75-1.52 | 0.49    |

Data Source: Indiana State Cancer Registry

^ SIRs not calculated for cases less than 5

To **promote**, **protect**, and **improve** the health and safety of all Hoosiers.

**Table 3: Standardized Incidence Ratios (SIR) Peru (46970)**

| <i>Type of Cancer</i>   | <b>2016-2020 Zip Code 46970</b> |               |                |
|-------------------------|---------------------------------|---------------|----------------|
|                         | <i>SIR</i>                      | <i>95% CI</i> | <i>P-Value</i> |
| Kidney and Renal Cancer | 0.73                            | 0.40-1.05     | 0.10           |
| Myeloma                 | 0.96                            | 0.33-1.58     | 0.89           |
| Lymphomas               | 0.91                            | 0.56-1.25     | 0.59           |
| Leukemias               | 0.91                            | 0.48-1.34     | 0.68           |

Data Source: Indiana State Cancer Registry  
^ SIRs not calculated for cases less than 5

#### Data Analyzed and Results

When first discussing this inquiry with the Cancer Cluster Inquiry Team, members that work at the Indiana Department of Environmental Management (IDEM) who are currently working on the remediation of the environmental site of concern let us know that the main toxic exposure of concern within this site is TCE. With that said we reviewed the types of cancers associated with TCE and they seemed to match the ones that the concerned citizen brought up (myelomas, kidney, leukemias, and lymphomas). Therefore, those are the types of cancers that were analyzed. In accordance with CDC methods age-adjusted rates were calculated at the county level to view the level of cancer in the county compared to Indiana. This was done for both 5-year (2016-2020) and 10-year analyses as it is currently unclear how far back this possible exposure may have been occurring. This showed that Miami County has lower rates of overall cancer than Indiana as well as many of the types of cancer that this concern focused on. Standardized incidence ratios (SIRs) were then calculated for the county as well as the zip code of concern. An SIR is an estimate of the occurrence of cancer in a population relative to what might be expected if the population had the same cancer experience as the larger comparison population. In this case that larger population is all of Indiana. An SIR of 1.0 shows the exact same cancer as expected in an area with a higher than 1.0 SIR signally higher cancer and a lower than 1.0 SIR indicating less than expected number of cancer cases. The 95% Confidence Interval (CI) and the P-Value show us whether this is a statistically significant difference or may be due to chance. Both Miami County and Peru had SIRs below one for most of the analyses and the one that was higher than 1.0 (leukemia 2016-2020) was not found to be statistically significant. Our team members from IDEM and Environmental health are aware of this environmental site and IDEM is continuing to remediate this environmental concern.

#### Final Conclusions:

According to the CDC cancer cases are more likely to represent a cancer cluster if they involve (1) one type of cancer, (2) a rare type of cancer and (3) a type of cancer in a group not usually affected by that cancer, such as a cancer in children that is normally seen in adults. At this point the cancer data does not show an increase in cancer in either Peru or Miami County. This area will continue to be monitored for cancer data as new years of data become available.