

# Communication Skills & Best Practices

Anita Recchio, FSA, MAAA

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Colonial Life<sup>®</sup>

# Actuarial Professionalism in the U.S.

## Professionalism Foundation

**American  
Society  
of  
Pension  
Professionals  
&  
Actuaries**

**Society  
of  
Actuaries**

**American  
Academy  
of  
Actuaries**

**Casualty  
Actuarial  
Society**

**Conference  
of  
Consulting  
Actuaries**

**Code of Professional Conduct**

# Actuarial Professionalism in the U.S.

## Precepts

- Professional Integrity
- Qualification Standards
- Standards of Practice
- Communications and Disclosure
- Conflict of Interest
- Control of Work Product
- Confidentiality
- Courtesy and Cooperation
- Advertising
- Titles and Designations
- Violations of the Code of Professional Conduct

# Code of Professional Conduct

# ASOP 23 – Data Quality

## What is Data and Why is Data Quality Important?

- Data is numerical, census or classification information
- Data is NOT assumptions
- Data quality is important to assure the accuracy and validity of the actuarial analysis

# ASOP 23 – Data Quality

## Selection of Data

- Actuary should consider scope of assignment
- Select data with consideration of:
  - Is data appropriate for the intended purpose?
  - Is data reasonable and comprehensive?
  - Is data internally and externally consistent?
  - Are there material limitations of the data?
  - What sampling methods, if any, were used to collect the data?
  - What about cost and feasibility of alternative data sources?

# ASOP 23 – Data Quality

## Reliance on Data and Other Information Supplied by Others

- This happens in most situations
- Supplier is responsible for accuracy and comprehensiveness of data and other information
- Actuary is responsible for reviewing supplied data
- Actuary not required to determine if supplied data or information has been falsified or is intentionally misleading
- Actuary should disclose reliance on data and information supplied by others

# ASOP 23 – Data Quality

## Review of Data

- Actuary should review data for reasonableness and consistency, unless deemed unnecessary or impractical
- Consider checking, verification or auditing already performed
- Obtain data definitions
- Comparison to data from other sources or prior data
- Identify materially questionable or unreliable data
- Consider improvement data quality when practical
- Actuary not responsible for developing additional data compilations solely for searching for questionable or inconsistent data
- Actuary not responsible for auditing the data

# ASOP 23 – Data Quality

## Use of Data

- Actuarial judgment used to determine if data is accurate, appropriate and comprehensive
- Use data with these considerations:
  - Is data quality sufficient?
  - Can deficient data be remedied?
  - Can judgmental adjustments or assumptions be applied to use the data?  
Actuary should disclose potential existence of uncertainty or bias, including the nature and magnitude.
  - Does data contain material defects? Actuary should consider prior validation, or arrange for a new data review.
  - Is the data so inadequate that it should not be used? Actuary should obtain different data or decline assignment.



# ASOP 23 – Data Quality

## Documentation

- Actuary should comply with documentation preparation and retention according to ASOP 41 (Actuarial Communication)
- Documentation should include:
  - Process used to evaluate the data
  - Consideration or review of prior data, if any
  - Material defects in the data, if any
  - Description and rationale for any adjustments or modifications to the data

# ASOP 23 – Data Quality

## Communication and Disclosures

- Disclose, Disclose, Disclose, Disclose, Disclose, Disclose, Disclose
- Actuary should comply with ASOP 41 (Actuarial Communication)
- Communications should disclose:
  - Data source(s)
  - Whether or not the actuary reviewed the data, and any resulting limitations on use of work product
  - Extent of reliance on data and other information provided by others
  - Any material judgmental adjustments or assumptions applied to data
  - Any limitations on use of work product due to data quality uncertainty
  - Any unresolved concerns that could have material effect on work product

# ASOP 23 – Data Quality

## Communication and Disclosures

- Communications should disclose, continued:
  - Existence of highly uncertain results or potential for materially biased results resulting from data quality. Include nature and magnitude of uncertainty or bias, if reasonably determinable
  - Any material methods or assumptions used as prescribed by law (statute, regulation or other legally binding authority)
  - Reliance on other sources and disclaiming responsibility for any material assumption or method by other party
  - Any material deviation from ASOP 23 guidance

# ASOP 41 – Actuarial Communications

Has this ever happened to you?

- Objection #1

**Please provide a revised actuarial memorandum that contains a detailed demonstration that the anticipated loss ratio can reasonably be expected to be reached. The new memorandum should comply with Actuarial Standard of Practice # 41.**

- Objection #2, one month later

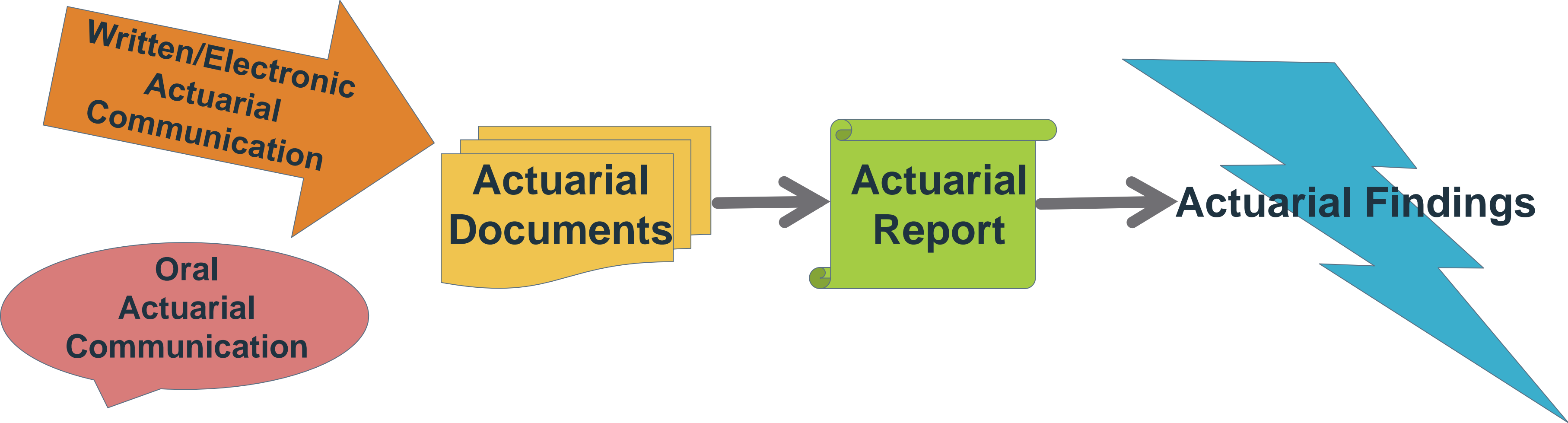
**The actuarial memorandum does not contain a detailed demonstration and does not comply with ASOP 41. Please provide a revised memorandum.**

- 3 Years Later

**Status: Approved**

# ASOP 41 – Actuarial Communications

## Definitions



# Actuarial Services

# ASOP 41 – Actuarial Communications

## Definitions

- Actuarial Communication
  - Written, electronic or oral communication issued by an actuary with respect to **Actuarial Services**
- Actuarial Document
  - An **Actuarial Communication** in any recorded form
- Actuarial Finding
  - The result of **Actuarial Services**
- Actuarial Report
  - Set of **Actuarial Documents** the actuary determines are relevant to specific **Actuarial Findings**
- Actuarial Services
  - Professional services provided to a principal by an individual acting in the capacity of an actuary

# ASOP 41 – Actuarial Communications

## The Actuarial Report

- Should be developed if the actuary intends the **Actuarial Findings** to be relied upon by the intended user.
- May comprise one or several documents – take care to organize and identify all its documents.
- Should clearly state the **Actuarial Findings**, and identify the methods, procedures, assumptions and data used with sufficient clarity that another qualified actuary could make an objective appraisal of the reasonableness of the work.
- Oral communication is an **Actuarial Communication**, but it is not an actuarial document.

# ASOP 41 – Actuarial Communications

## Disclosures in the Actuarial Report

- Identification of the Responsible Actuary
- Identification of Actuarial Documents
- Intended users of the Actuarial Report
- Scope and intended purpose of the assignment
- Acknowledgment of actuarial qualification to perform the assignment
- Cautions regarding risk and uncertainty
- Limitations or constraints on use or applicability



# ASOP 41 – Actuarial Communications

## Disclosures in the Actuarial Report, continued

- Any conflict of interest
- Any information relied upon with material impact for which actuary does not assume responsibility including the specific facts
- Date through which data and other information has been considered
- Subsequent events that may have a material impact including their implications
- Use of any material assumptions or methods prescribed by law.
- Any material deviation from the guidance of any Actuarial Standard of Practice including statement with respect to nature, rationale and effect.

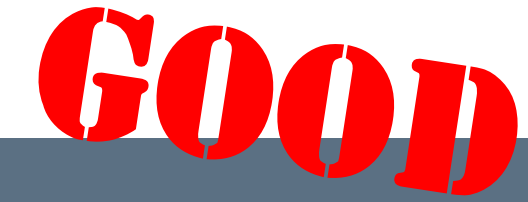
# Data Visualization

**NOT SO GOOD**

## Example #1: Claim Reserve Analysis-Before

3.963	1.641	1.268	1.113	1.086	1.047	1.032	1.031	1.049	1.024	1.020	1.017	1.018	1.010	1.012	1.008	1.012	1.013	1.002	1.009	1.012	1.005	
3.702	1.608	1.316	1.132	1.066	1.044	1.034	1.019	1.024	1.017	1.010	1.008	1.011	1.007	1.005	1.004	1.003	1.007	1.004	1.006	1.003	1.001	
3.980	1.658	1.276	1.179	1.080	1.041	1.034	1.053	1.027	1.018	1.038	1.013	1.010	1.120	1.017	1.013	1.007	1.018	1.005	1.007	1.009	1.004	
3.829	1.606	1.306	1.188	1.088	1.077	1.066	1.025	1.034	1.017	1.017	1.030	1.015	1.015	1.005	1.020	1.005	1.009	1.004	1.003	1.002	1.001	
3.530	1.816	1.273	1.171	1.099	1.076	1.052	1.050	1.052	1.035	1.020	1.020	1.018	1.018	1.021	1.014	1.018	1.019	1.016	1.011	1.014	1.013	
3.805	1.733	1.323	1.170	1.129	1.051	1.043	1.038	1.030	1.028	1.038	1.017	1.032	1.013	1.010	1.009	1.019	1.020	1.006	1.015	1.013	1.013	
4.065	1.682	1.309	1.145	1.087	1.073	1.033	1.053	1.034	1.025	1.031	1.012	1.022	1.009	1.007	1.006	1.004	1.006	1.005	1.003	1.004	1.004	
3.695	1.666	1.237	1.169	1.066	1.069	1.046	1.024	1.021	1.017	1.016	1.009	1.017	1.008	1.009	1.008	1.007	1.009	1.010	1.010	1.014	1.008	
4.621	1.653	1.289	1.148	1.081	1.069	1.065	1.037	1.064	1.027	1.015	1.018	1.017	1.011	1.010	1.009	1.008	1.012	1.006	1.006	1.005	1.003	
4.325	1.761	1.264	1.193	1.143	1.051	1.040	1.033	1.023	1.027	1.017	1.012	1.012	1.011	1.007	1.010	1.008	1.006	1.004	1.005	1.004	1.004	
3.973	1.613	1.328	1.151	1.089	1.081	1.084	1.038	1.028	1.033	1.026	1.019	1.011	1.012	1.009	1.038	1.005	1.007	1.003	1.008	1.004	1.003	
3.143	1.852	1.285	1.162	1.101	1.089	1.033	1.086	1.033	1.095	1.055	1.016	1.027	1.047	1.011	1.047	1.017	1.004	1.009	1.006	1.004	1.003	
4.090	1.746	1.257	1.167	1.140	1.073	1.047	1.046	1.043	1.022	1.013	1.019	1.016	1.015	1.007	1.009	1.008	1.028	1.044	1.007	1.012	1.003	
4.164	1.724	1.274	1.167	1.077	1.050	1.056	1.040	1.031	1.020	1.024	1.044	1.056	1.022	1.015	1.012	1.017	1.013	1.004	1.006	1.008	1.006	
2.311	1.522	1.239	1.129	1.084	1.058	1.076	1.062	1.043	1.015	1.024	1.011	1.015	1.011	1.011	1.010	1.007	1.010	1.006	1.007	1.004	1.003	
3.561	1.832	1.242	1.140	1.088	1.066	1.038	1.042	1.031	1.026	1.019	1.014	1.018	1.012	1.010	1.007	1.007	1.008	1.009	1.007	1.006	1.004	
3.647	1.708	1.287	1.209	1.066	1.058	1.038	1.041	1.055	1.024	1.017	1.025	1.016	1.014	1.012	1.011	1.008	1.012	1.006	1.009	1.007	1.006	
3.948	1.678	1.273	1.152	1.105	1.061	1.050	1.033	1.048	1.031	1.024	1.022	1.013	1.022	1.016	1.014	1.012	1.009	1.009	1.019	1.016	1.005	
3.734	1.780	1.264	1.133	1.105	1.050	1.048	1.042	1.033	1.033	1.018	1.025	1.027	1.020	1.009	1.012	1.007	1.010	1.005	1.004	1.005	1.005	
3.633	1.634	1.297	1.153	1.090	1.063	1.066	1.044	1.023	1.031	1.030	1.018	1.012	1.010	1.012	1.012	1.009	1.006	1.006	1.009	1.007	1.006	
2.397	1.587	1.266	1.150	1.115	1.130	1.102	1.033	1.112	1.049	1.038	1.032	1.016	1.013	1.008	1.005	1.007	1.006	1.004	1.006	1.011	1.005	
2.952	1.540	1.236	1.144	1.098	1.051	1.041	1.041	1.036	1.026	1.024	1.016	1.016	1.014	1.012	1.012	1.010	1.007	1.011	1.005	1.007	1.015	
3.337	1.614	1.334	1.168	1.084	1.063	1.044	1.034	1.021	1.020	1.018	1.016	1.015	1.013	1.011	1.011	1.008	1.011	1.010	1.008	1.012	1.007	
3.084	1.657	1.260	1.154	1.076	1.074	1.063	1.052	1.023	1.027	1.028	1.032	1.017	1.023	1.009	1.008	1.008	1.009	1.010	1.005	1.007	1.004	
3.770	1.706	1.299	1.187	1.061	1.051	1.031	1.041	1.018	1.020	1.018	1.020	1.015	1.013	1.009	1.008	1.010	1.010	1.005	1.007	1.021		
3.314	1.658	1.256	1.119	1.103	1.095	1.056	1.038	1.038	1.022	1.021	1.024	1.020	1.023	1.014	1.017	1.018	1.015	1.008	1.008			
3.317	1.632	1.282	1.127	1.088	1.066	1.054	1.035	1.026	1.029	1.022	1.025	1.017	1.020	1.018	1.021	1.018	1.009	1.010				
3.126	1.694	1.350	1.145	1.099	1.046	1.053	1.024	1.028	1.021	1.020	1.009	1.020	1.021	1.019	1.012	1.014	1.009					
2.840	1.648	1.237	1.162	1.083	1.072	1.048	1.062	1.031	1.028	1.017	1.015	1.013	1.016	1.026	1.009	1.030						
3.606	1.649	1.248	1.177	1.103	1.062	1.044	1.035	1.027	1.027	1.025	1.033	1.020	1.022	1.022	1.016							
2.846	1.648	1.250	1.153	1.087	1.072	1.050	1.045	1.030	1.031	1.017	1.017	1.014	1.018	1.015								
2.789	1.735	1.332	1.146	1.085	1.066	1.043	1.034	1.041	1.040	1.029	1.023	1.022	1.027									
3.254	1.756	1.203	1.152	1.071	1.053	1.056	1.035	1.023	1.022	1.018	1.013	1.011										
2.364	1.507	1.250	1.126	1.078	1.045	1.051	1.033	1.032	1.026	1.015	1.018											
3.343	1.613	1.224	1.132	1.071	1.053	1.047	1.035	1.024	1.024	1.017												
2.950	1.639	1.266	1.105	1.100	1.078	1.069	1.050	1.035	1.062													
2.956	1.549	1.213	1.189	1.091	1.068	1.052	1.039	1.029														
2.671	1.544	1.302	1.141	1.094	1.078	1.062	1.084															
3.281	1.686	1.278	1.188	1.089	1.063	1.045																
1.643	1.386	1.195	1.125	1.072	1.056																	
2.925	1.622	1.259	1.142	1.101																		
2.670	1.560	1.217	1.147																			
2.797	1.570	1.295																				
2.751	1.572																					
2.578																						

# Data Visualization



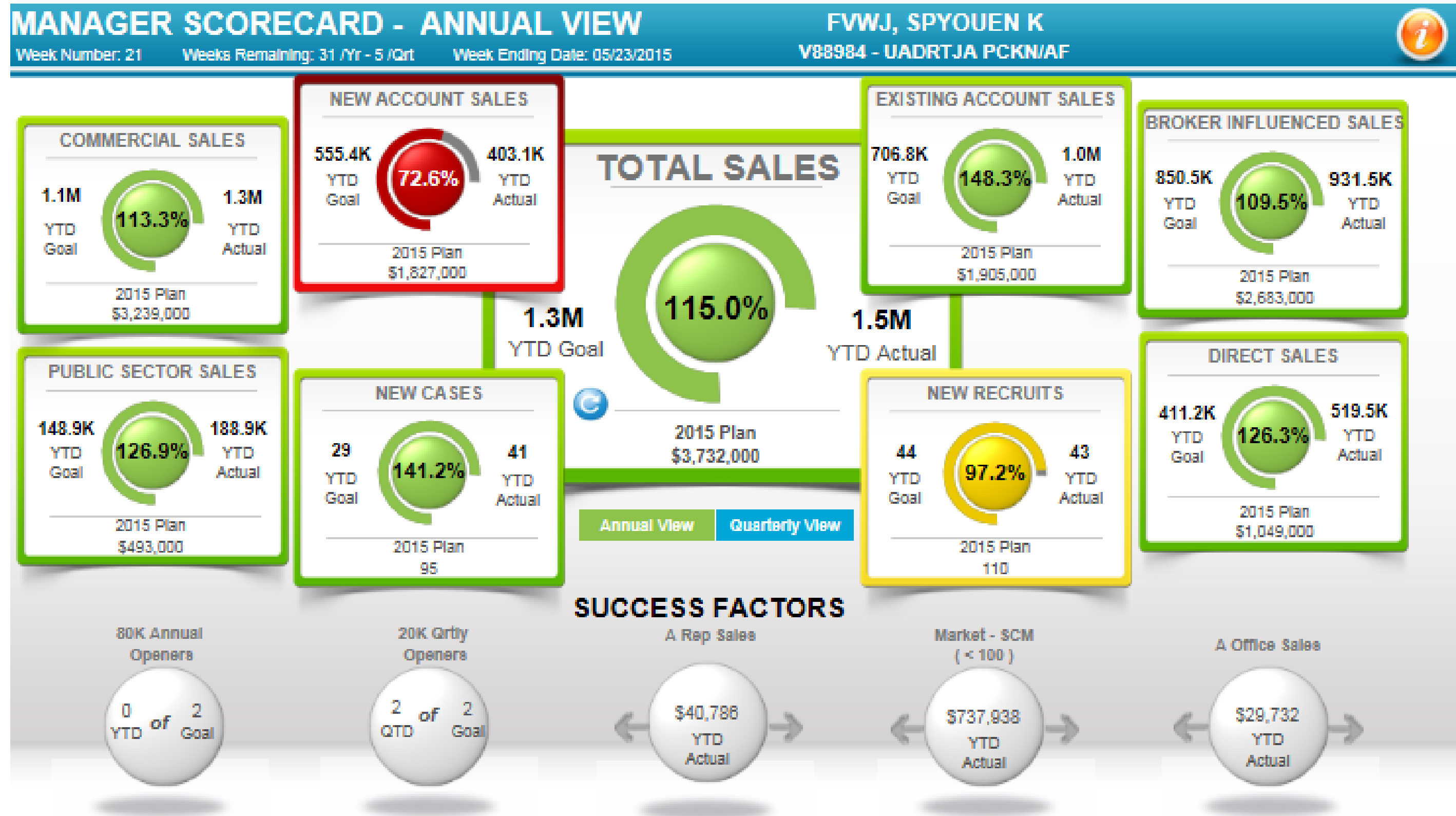
## Example #1: Claim Reserve Analysis-After

3.963	1.641	1.268	1.113	1.086	1.047	1.032	1.031	1.049	1.024	1.020	1.017	1.018	1.010	1.012	1.008	1.012	1.013	1.002	1.009	1.012	1.005
3.702	1.608	1.316	1.132	1.066	1.044	1.034	1.019	1.024	1.017	1.010	1.008	1.011	1.007	1.005	1.004	1.003	1.007	1.004	1.006	1.003	1.001
3.980	1.658	1.276	1.179	1.080	1.041	1.034	1.053	1.027	1.018	1.038	1.013	1.010	1.120	1.017	1.013	1.007	1.018	1.005	1.007	1.009	1.004
3.829	1.606	1.306	1.188	1.088	1.077	1.066	1.025	1.034	1.017	1.017	1.030	1.015	1.015	1.005	1.020	1.005	1.009	1.004	1.003	1.002	1.001
3.530	1.816	1.273	1.171	1.099	1.076	1.052	1.050	1.052	1.035	1.020	1.020	1.018	1.018	1.021	1.014	1.018	1.019	1.016	1.011	1.014	1.013
3.805	1.733	1.323	1.170	1.129	1.051	1.043	1.038	1.030	1.028	1.038	1.017	1.032	1.013	1.010	1.009	1.019	1.020	1.006	1.015	1.013	1.013
4.065	1.682	1.309	1.145	1.087	1.073	1.033	1.053	1.034	1.025	1.031	1.012	1.022	1.009	1.007	1.006	1.004	1.006	1.005	1.003	1.004	1.004
3.695	1.666	1.237	1.169	1.066	1.069	1.046	1.024	1.021	1.017	1.016	1.009	1.017	1.008	1.009	1.008	1.007	1.009	1.010	1.010	1.014	1.008
4.621	1.653	1.289	1.148	1.081	1.069	1.065	1.037	1.064	1.027	1.015	1.018	1.017	1.011	1.010	1.009	1.008	1.012	1.006	1.006	1.005	1.003
4.325	1.761	1.264	1.193	1.143	1.051	1.040	1.033	1.023	1.027	1.017	1.012	1.012	1.011	1.007	1.010	1.008	1.006	1.004	1.005	1.004	1.004
3.973	1.613	1.328	1.151	1.089	1.081	1.084	1.038	1.028	1.033	1.026	1.019	1.011	1.012	1.009	1.038	1.005	1.007	1.003	1.008	1.004	1.003
3.143	1.852	1.285	1.162	1.101	1.089	1.033	1.086	1.033	1.095	1.055	1.016	1.027	1.047	1.011	1.047	1.017	1.004	1.009	1.006	1.004	1.003
4.090	1.746	1.257	1.167	1.140	1.073	1.047	1.046	1.043	1.022	1.013	1.019	1.016	1.015	1.007	1.009	1.008	1.028	1.044	1.007	1.012	1.003
4.164	1.724	1.274	1.167	1.077	1.050	1.056	1.040	1.031	1.020	1.024	1.044	1.056	1.022	1.015	1.012	1.017	1.013	1.004	1.006	1.008	1.006
2.311	1.522	1.239	1.129	1.084	1.058	1.076	1.062	1.043	1.015	1.024	1.011	1.015	1.011	1.011	1.010	1.007	1.010	1.006	1.007	1.004	1.003
3.561	1.832	1.242	1.140	1.088	1.066	1.038	1.042	1.031	1.026	1.019	1.014	1.018	1.012	1.010	1.007	1.007	1.008	1.009	1.007	1.006	1.004
3.647	1.708	1.287	1.209	1.066	1.058	1.038	1.041	1.055	1.024	1.017	1.025	1.016	1.014	1.012	1.011	1.008	1.012	1.006	1.009	1.007	1.006
3.948	1.678	1.273	1.152	1.105	1.061	1.050	1.033	1.048	1.031	1.024	1.022	1.013	1.022	1.016	1.014	1.012	1.009	1.009	1.019	1.016	1.005
3.734	1.780	1.264	1.133	1.105	1.050	1.048	1.042	1.033	1.033	1.018	1.025	1.027	1.020	1.009	1.012	1.007	1.010	1.005	1.004	1.005	1.005
3.633	1.634	1.297	1.153	1.090	1.063	1.066	1.044	1.023	1.031	1.030	1.018	1.012	1.010	1.012	1.012	1.009	1.006	1.006	1.009	1.007	1.006
2.397	1.587	1.266	1.150	1.115	1.130	1.102	1.033	1.112	1.049	1.038	1.032	1.016	1.013	1.008	1.005	1.007	1.006	1.004	1.006	1.011	1.005
2.952	1.540	1.236	1.144	1.098	1.051	1.041	1.041	1.036	1.026	1.024	1.016	1.016	1.014	1.012	1.012	1.010	1.007	1.011	1.005	1.007	1.015
3.337	1.614	1.334	1.168	1.084	1.063	1.044	1.034	1.021	1.020	1.018	1.016	1.015	1.013	1.011	1.011	1.008	1.011	1.010	1.008	1.012	1.007
3.084	1.657	1.260	1.154	1.076	1.074	1.063	1.052	1.023	1.027	1.028	1.032	1.017	1.023	1.009	1.008	1.008	1.009	1.010	1.005	1.007	1.004
3.770	1.706	1.299	1.187	1.061	1.051	1.031	1.041	1.018	1.020	1.018	1.020	1.015	1.013	1.009	1.008	1.010	1.010	1.005	1.007	1.021	
3.314	1.658	1.256	1.119	1.103	1.095	1.056	1.038	1.038	1.022	1.021	1.024	1.020	1.023	1.014	1.017	1.018	1.015	1.008	1.008		
3.317	1.632	1.282	1.127	1.088	1.066	1.054	1.035	1.026	1.029	1.022	1.025	1.017	1.020	1.018	1.021	1.018	1.009	1.010			
3.126	1.694	1.350	1.145	1.099	1.046	1.053	1.024	1.028	1.021	1.020	1.009	1.020	1.021	1.019	1.012	1.014	1.009				
2.840	1.648	1.237	1.162	1.083	1.072	1.048	1.062	1.031	1.028	1.017	1.015	1.013	1.016	1.026	1.009	1.030					
3.606	1.649	1.248	1.177	1.103	1.062	1.044	1.035	1.027	1.027	1.025	1.033	1.020	1.022	1.022	1.016						
2.846	1.648	1.250	1.153	1.087	1.072	1.050	1.045	1.030	1.031	1.017	1.017	1.014	1.018	1.015							
2.789	1.735	1.332	1.146	1.085	1.066	1.043	1.034	1.041	1.040	1.029	1.023	1.022	1.027								
3.254	1.756	1.203	1.152	1.071	1.053	1.056	1.035	1.023	1.022	1.018	1.013	1.011									
2.364	1.507	1.250	1.126	1.078	1.045	1.051	1.033	1.032	1.026	1.015	1.018										
3.343	1.613	1.224	1.132	1.071	1.053	1.047	1.035	1.024	1.024	1.017											
2.950	1.639	1.266	1.105	1.100	1.078	1.069	1.050	1.035	1.062												
2.956	1.549	1.213	1.189	1.091	1.068	1.052	1.039	1.029													
2.671	1.544	1.302	1.141	1.094	1.078	1.062	1.084														
3.281	1.686	1.278	1.188	1.089	1.063	1.045															
1.643	1.386	1.195	1.125	1.072	1.056																
2.925	1.622	1.259	1.142	1.101																	
2.670	1.560	1.217	1.147																		
2.797	1.570	1.295																			
2.751	1.572																				
2.578																					

# Data Visualization

**BETTER**

## Example #2: Sales Manager Scorecard

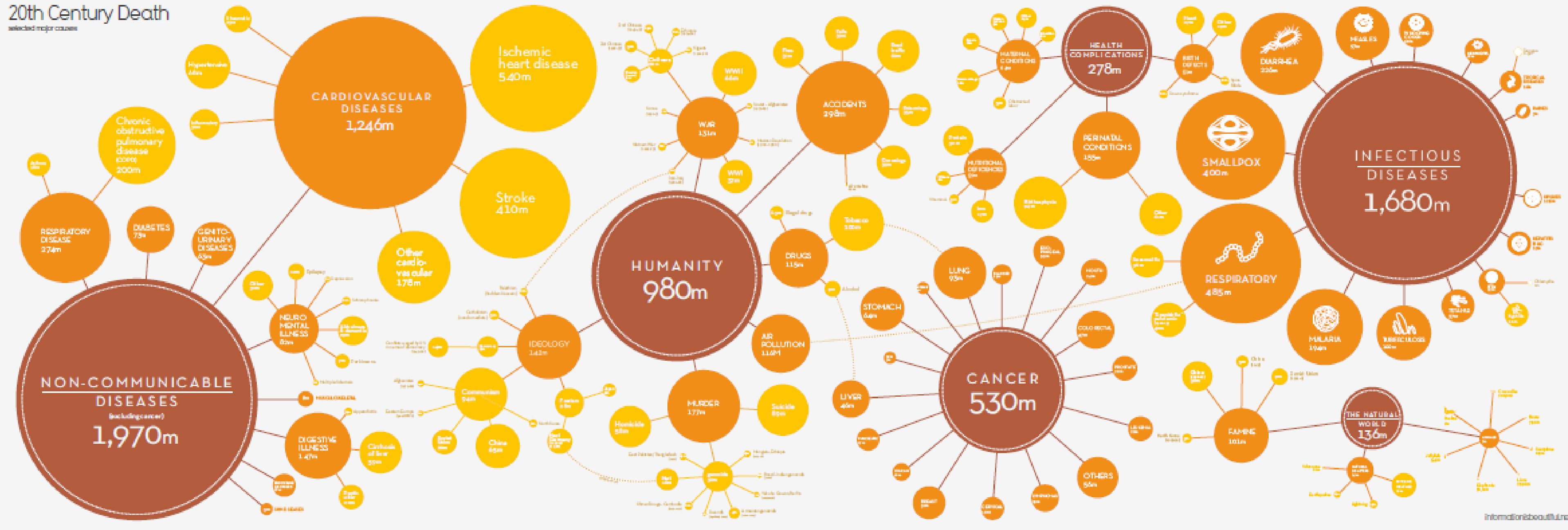


# Data Visualization

**BEST**

## Example #3: Cause of Death

20th Century Death  
selected major causes







Thank you!

Let's connect!

[www.linkedin.com/in/anitarecchio](http://www.linkedin.com/in/anitarecchio)