Georgia Quality Management System
Quality Improvement Study

Provider Systems and Driver Outcomes

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Developmental Disabilities
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Abstract

Several studies have identified "driver" outcomes. When present in someone's life, there is a greater likelihood other outcomes will also be present. In this study we use data from Delmarva reviews completed between July 2010 and March 2014 to identify Driver Outcomes for individuals receiving services through Home and Community Based Waiver services as part of the Georgia Quality Management System. Multivariate analytic techniques were used to generate two specific Driver Outcomes: Person Centered Planning (PCP) and Community Integration and Rights (CIR). Logistic Regression models were developed to examine the net impact of several different explanatory or independent variables on each of these outcomes. Including demographic characteristics, we examine the impact of provider performance in documenting the implementation of various policies and organizational procedures (Provider Record Reviews).

Results indicate that when controlling for other factors in the model, the type of residence, disability, and services received are associated with the person's likelihood of having outcomes related to input into services, community integration, decision making and rights present. Several different aspects of the provider's systems were the strongest predictors of outcomes, including documentation that individuals had a choice of services and supports, were given a choice of community services and supports, and were able to direct their own services and supports. Recommendations are provided based upon the evidence presented in the study.

Background

In July 2008, Delmarva Foundation entered into a contract with Georgia's Department of Behavioral Health and Developmental Disabilities (DBHDD)and the Division of Developmental Disabilities (the Division) to provide quality assurance and quality improvement for the system offering services, through state and Medicaid Home and Community-Based Services(HCBS) waivers, to individuals with intellectual and developmental disabilities (IDD)—the Georgia Quality Management System (GQMS). As part of this contract, Delmarva annually conducts 40 Quality Enhancement Provider Reviews (QEPR) to monitor service delivery systems and offer technical assistance to providers; and 480 Person Centered Reviews (PCR) to determine the effectiveness of the system from the perspective of individuals served.

The PCR utilizes a representative sample of individuals from across Georgia, who receive services through either of two different HCBS waivers or state funded services. The interview process includes the National Core Indicators (NCI) face to face consumer survey, and an

additional open-ended survey developed by Delmarva—Individual Interview Instrument (III).[1] Records are reviewed for each service the person receives, including support coordination, and an observation is completed of the person in the day program and/or residential setting. Together these provide in-depth insight into the individual's life.

The QEPR consists of a review of a random sample of employee records to determine if all education and training requirements have been met; individual interviews (III); staff interviews; observations of day and residential programs; and individual record reviews representing all services the provider offers. Technical assistance is offered to improve overall service delivery systems and heal create efficiencies for providers. Information from the PCRs is used when assessing the provider's service delivery systems, with additional individual interviews and observations conducted as required.

The Georgia Division of Developmental Disabilities practices an ongoing commitment to quality improvement in ensuring individuals are receiving services as intended and that person centered practices are infused throughout the system. To that end, they have helped design several quality improvement studies examining the extent to which outcomes are present for individuals with IDD and the provider systems that help impact those outcomes. This study further explores the best predictors of outcomes for individuals, considering specifically outcomes that "drive" or most impact the likelihood the person will have other outcomes present. By identifying driver outcomes and the key provider systems that impact these outcomes, we are able to target specific areas in provider organizations that will most benefit the individuals they serve.

Purpose

Previous research has shown the significance of having certain outcomes present, such as the opportunity to make decisions and to have informed choice. Through a series of analyses, the Council on Quality and Leadership analyzed their 25 Personal Outcome Measures (POMs) to determine which outcomes have the highest ability to predict the number of outcomes present in an individual's life.[2] Two were selected by the Council - *Chooses Services* and *Chooses Where They Work* as indicators to be targeted and tracked for Quality Improvement initiatives. These were defined as "driver indicators" and if present, increase the likelihood that at least 13 or more other personal outcomes will be present in the person's life.

[1] For more information see http://www2.hsri.org/nci/ about the development and implementation of the NCI surveys. See http://www.dfmc-georgia.org/ for the additional tools and review components for the PCR review process and more information about III and all other Delmarva tools and review procedures.
[2] Go to http://www.thecouncil.org/pomindex.aspx for more information about the Council and the POMs.

The importance of individual and family involvement in life's decisions for individuals with IDD has also been identified. In 2008, researchers found that consumers with IDD whose family members were highly involved received more services than consumers in other families. A multivariate analysis of covariance indicated that family members in the highly involved and planning classes experienced more family member satisfaction than others.[3] Using POM data collected through the Florida Quality Assurance Program, feeling respected, exercising rights, interacting with members of the community and having the opportunity to choose services were outcomes most likely to increase other POM outcomes and improve quality of life.[4]

A study conducted for the Florida Statewide Quality Assurance Program used predictive modeling techniques to determine the best provider performance predictors of individual outcomes. A similar study completed for the Georgia Quality Management System examined different components of provider systems to assess their impact on overall individual outcomes. In both studies it was clear that having policies and procedures in place did not impact outcomes, but implementation of those policies often did.

The purpose of this study is to help the state identify efficient and effective ways to help individuals achieve outcomes. With GQMS data collected through the Delmarva processes, we first use analytic techniques to identify Driver Outcomes most likely to impact the person's likelihood of having outcomes present in their lives. We then examine provider systems to determine what most impacts those specific outcomes. If certain aspects of a provider's performance impact driver outcomes more than others, the regions and states can target provider training and remediation efforts in a way that will be likely to produce more outcomes for individuals served, and identify performance measures to track these efforts.

Data

Data were taken from 1,851PCR and 148 QEPR Delmarva reviews completed between July 2010 and March 2014, which included interviews with 3,448 individuals and 5,429 provider record reviews (PRR) for services received by these individuals. PRRs are completed for each service the person receives and are maintained by the provider. Information from the PRR is gleaned from documentation review but addresses the extent to which providers have implemented the state and organizational policies through their service delivery systems.

[3] Susan Neely-Barnes , J. Carolyn Graff , Maureen Marcenko , and Lisa Weber. Family Decision Making: Benefits to Persons With Developmental Disabilities and Their Family Members. Intellect Dev Disabil. 2008 Jun;46(3):ii.
[4] Outcome Results Analysis: Best Predictors of Percent of Outcomes Met. Prepared by Delmarva Foundation for the Florida Statewide Quality Assurance Program. 2006.

Dependent Variables (Response Variable)

The III results reflect outcomes such as rights, choice, person-centered practices, community life, health and safety. The interviews are semi-structured but allow for open ended responses and an in-depth process. For example, the question may not be simply if the person attends church. To better reflect what the person wants and needs interviewers will further explore so determine if this is the church of choice for the person, if the person attends as much as desired, and if the person wants to join the choir or help teach Sunday school.

III results for the study time period are presented in the following table. On average, the 3,448 individuals had 88.9 percent of the standards present in their lives. Results range from a low of 70.2 percent (developing social roles) to a high of 97.5 percent (treated with dignity and respect).

Table 1: Individual Interview Instrument Results by Standard
July 2011 - March 2014

Standard	Pct Met
1. The person is afforded choice of services and supports.	90.3%
2. The person is involved in the design of the service plan.	83.2%
3. The service plan is reviewed with the person, who can make changes.	78.8%
4. The person's goals and dreams are reflected in supports and services.	87.1%
5. The person is achieving desired outcomes/goals.	90.2%
6. The person actively participates in decisions concerning his or her life.	91.8%
7. The person is satisfied with the supports and services received.	96.0%
8. The person is free from abuse, neglect and exploitation.	96.5%
9. The person is healthy.	93.7%
10. The person is safe or has self-preservation skills.	92.3%
11. The person is educated and assisted to learn about and exercise rights.	82.7%
12. The person is treated with dignity and respect.	97.5%
13. The person’s preferences related to privacy are upheld.	97.3%
14. The person has opportunities to access and participate in community activities.	86.1%
15. The person is developing desired social roles.	70.2%
Average Score	88.9%
Total number of interviews	3,448

The purpose of the study is to identify Driver Outcomes from among the 15 III standards, outcomes that are most likely to predict the presence of other outcomes, to be used as the dependent variable in the analysis. Principal Component Analysis (PCA) is a multivariate statistical technique used to construct a reduced number of "dimensions" called principal components or factors, but still adequately summarize the information. In mathematical terms, PCA creates uncorrelated components, each a linear weighted combination of some of the initial variables, based on the amount of variance explained for the total number of variables used. For example, using the 15 III standards, four standards may be identified as explaining the most variance for the 15 in aggregate.

In PCA models the first component accounts for a maximal amount of total variance of the all variables combined. The second component accounts for a maximal amount of variance that was not accounted for by the first component, and so on such that each new component accounts for a progressively smaller and smaller amount of variance. Therefore, only the first few components account for a meaningful amount of variance and generally only these are retained and used in subsequent analysis.

For this study we used Eigenvalues to identify Driver Outcomes.[5] Eigenvalues represent the amount of variance accounted for by a given component or factor. Since each observed variable contributes one unit of variance to the total variance, any component displaying an eigenvalue greater than one is accounting for a greater amount of variance than had been contributed by one variable, accounting for a meaningful amount of variance.

Data from the III lend themselves to PCA. Using PCA we are able to group the 15 III standards into components that best explain the variance of all the III outcomes. Information in Table 1 provides a description of the two key factors identified as "Driver Outcomes", using the PCA approach. The first factor, Person Centered Planning, includes the person's ability to choose services, design the service plan, achieve desired goals, and help ensure dreams and hopes are incorporated into supports and services. The Eigenvalue of 3.6 indicates this factor explains a high degree of the variance for individual outcomes.

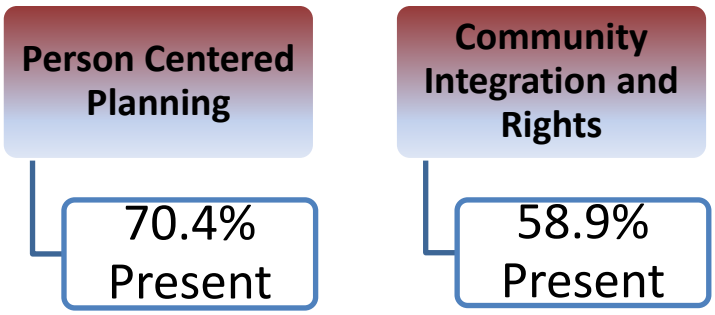
The second factor (Eigenvalue of 1.4) is less coherent but includes issues surrounding the person's rights, including the right to make decisions, and community integration, including the capacity to develop desired social roles. Because the distribution of these factors is not normal,

[5] We also used a Scree plot to identify a meaningful cut point for the factors.

we dichotomize them for use in the statistical models as the dependent variables: **the percent of individuals with all four standards met vs the percent with less than four met**.

Table 1: Key Factors Identified as Driver Outcomes Principal Component Analysis: III Standards Results July 2011 - March 2014	
Factor	III Standard
Person Centered Planning	✓ The person is afforded choice of services and supports. ✓ The person is involved in the design of the service plan. ✓ The person's goals and dreams are reflected in supports and services. ✓ The person is achieving desired outcomes/goals
Community Integration and Rights	✓ The person actively participates in decisions concerning his or her life. ✓ The person is educated and assisted to learn about and exercise rights. ✓ The person has opportunities to access and participate in community activities. ✓ The person is developing desired social roles.

The percent of individuals with all four of the standards met for each Driver Outcome is shown in the following graphic. Individuals were more likely to have the standards met indicating Person Centered Planning (PCP) is present in their lives than Community Integration and Rights (CIR).



Explanatory (Independent) Variables

Multiple factors could influence, or explain, whether or not an individual has driver outcomes present, including many factors outside the scope of this study such as community resources,

employment opportunities, the number of providers available in the area, or family influence. While it is preferable to include as many relevant mitigating factors as possible, in this study we are able to use data collected during the Delmarva GQMS review processes that are suitable for regression analysis techniques.

Explanatory variables of interest include demographic characteristics of the person and provider performance as indicated by results on the Provider Record Reviews. We explored the possibility of including several different provider characteristics that may have been relevant to this study. Attendance at training sessions is tracked by each regional office. We gathered all the data available from attendance logs, but two key issues prevented us from including this in the analysis: missing data and a lack of a unique identifier making it difficult to merge all providers from the training lists with the data for the analysis. We also believe the provider's caseload/size could impact their services. However, we only have that information for providers who have received a QEPR, and that number could have changed dramatically over the years since the QEPR was conducted.

Individual Level Characteristics

Individual level data in the analysis include Disability, Residential Setting, Age, Region, and the services received by the person. Individuals listed in the "Other" category for Disability (N=31) and Residential Setting (N=66) were excluded from the analyses. The distribution of individuals and the percent with all four standards met on each Driver Outcome is presented in Table 2. Individuals who live in a group home, or have a profound intellectual disability, or are in the youngest or older age groups are less likely to have all components of either of the Driver Outcomes present.

Individuals living in Regions 4 and 5 appear to do better on these outcomes than individuals living in other regions, with the exception of Region 6 where CIR results were relatively high as well. We included gender in the original models. Although women were more likely to have all components of the Driver Outcomes met, this has no impact on the outcomes when controlling for other factors. Therefore, we excluded gender form the final analyses.

Table 2: Individual Demographics
Percent Met on Driver Outcomes

		Percent With All Four Met	
Gender	Percent of Sample	PCP	CIR
Female	42.0%	71.4%	60.1%

Table 2: Individual Demographics Percent Met on Driver Outcomes			Percent With All Four Met
Male	58.0%	69.6%	58.1%
Home Type			
Group Home	30.5%	67.8%	53.8%
Host Home	11.2%	70.1%	64.2%
Own Place	12.8%	74.6%	65.1%
With Parent	44.6%	71.1%	59.9%
Disability			
Intellectual Disability	89.8%	71.0%	59.9%
Profound ID	8.3%	64.7%	50.0%
Age Group			
18-25	10.8%	65.9%	55.9%
26-44	48.0%	72.3%	60.2%
45-54	23.0%	70.9%	60.5%
55-64	13.0%	66.3%	55.4%
65+	5.2%	69.6%	55.8%
Region			
1	21.4%	67.3%	56.2%
2	16.2%	68.0%	53.5%
3	27.6%	72.1%	56.3%
4	11.2%	79.8%	74.7%
5	10.4%	79.1%	61.5%
6	13.1%	59.8%	60.3%
Total Number of Interviews and Percent Present	3,448	70.4%	58.9%

The following table shows the distribution of individuals in the sample across services received, that are reviewed by Delmarva, and the Driver Outcome results. It is important to remember that individuals generally receive more than one service. Respite and Transportation, with only 18 and three respectively, were excluded from the analysis. While individuals were least likely to receive Community Living Supports and Supported Employment, individuals receiving these services performed better on the Driver Outcomes. The services are described by DBHDD as follows:

- **Community Access** is designed to help participants acquire, retain or improve self-help, socialization and adaptive skills required for active participation and independent functioning outside the home.

- **Community Living Support** services are individually tailored supports that assist with the acquisition, retention or improvement of skills related to participants' continued residence in their family or own home.
- **Community Residential Alternatives** are available to individuals who require intense levels of residential support in small group settings of four or fewer or in host home/life-sharing arrangements. Services include a range of interventions that focus on training and support in one or more of the following areas: eating and drinking, toileting, personal grooming and health care, dressing, communication, interpersonal relationships, mobility, home management and use of leisure time.
- **Prevocational Services** prepare participants for paid or unpaid employment and include teaching concepts such as compliance, attendance, task completion, problem solving and safety.
- **Supported Employment** enables participants, for whom competitive employment at or above the minimum wage is unlikely absent the provision of supports, to work in a regular work setting.

Table 3: Services Received
Percent Met on Driver Outcomes

		Percent With All Met	
Service	Percent of Sample	PCP	CIR
Community Access Service	48.3%	69.8%	59.2%
Community Living Support	9.4%	73.4%	60.5%
Community Residential Alternatives	21.2%	68.7%	57.1%
Prevocational	12.6%	72.0%	59.9%
Supported Employment	8.5%	77.1%	70.3%
Total	5,429		

Provider Performance

Of primary interest for this study is the impact of provider performance on the Driver Outcomes. Results from the Provider Record Reviews help us determine the extent to which providers have implemented key policies to ensure services are person centered, the person's health and safety are maintained, choice is provided, rights are upheld, and individuals are able to participate in their communities as desired. Each of the PRR standards is associated with a Focused Outcome Area (FOA). Results in Table 4 provide the average percent met on each of the PRR standards for the study period, grouped by FOA. Findings show a wide variation of compliance from a low of 25.7 percent (choice of community services and supports) to a high of 95.7 percent (maintains

central record). Most providers also did not have a means to identify the person's health and safety needs.

Table 4: Provider Record Review Resutls by Standard and Focused Outcome Area

July 2011 - March 2014

PRR Standard and FOA	Number Reviewed	Percent Met
Person Centered Practices		
Person centered focus supported in documentation.	5,446	30.8%
Means to evaluate quality/satisfaction of services.	5,437	94.8%
Individual is making progress/achieving desired goals.	5,444	54.5%
Individual directs supports and services.	5,441	34.4%
Rights		
Human and civil rights are maintained	5,447	77.4%
Clear description of services/supports/care/treatment.	5,441	78.8%
The provider maintains a central record for individual.	5,449	95.7%
Management and protection of personal funds.	1,794	86.1%
Information is protected, organized and confidential.	5,444	78.8%
Health and Safety		
Potential risk to individuals/staff/others is managed.	5,445	80.5%
Means to identify health status and safety needs	5,438	25.9%
Medication Management/Administration	2,267	82.0%
Choice		
Individual is afforded choices of services &supports.	5,438	57.9%
Community		
Individual chooses community services/supports.	5,336	25.7%

Not all standards are scored on each review. For example, if the provider does not administer medications, there is no oversight of medication administration needed. We provide results for these standards but they are based on a much smaller N size: medication oversight and administration and the management and protection of personal funds. The standard measuring compliance with the NOW and COMP waiver standards (85% Met) is also analyzed independently but the standard is not part of any of the FOAs. The average percent met by FOA

is shown in the following graphic. Providers were most likely to document provision of rights for individuals served.

Methods

Multivariate regression is used to determine the net impact of an explanatory variable on the dependent/response variable, controlling for other factors that may influence the outcome. For example, previous analysis has informed us that individuals living in a group home generally have fewer outcomes present in their lives. Therefore, to assess the impact of provider performance, it is necessary to take this into account and control for residential setting, making comparisons across like settings.

In this study we use regression to help identify the net impact of provider performance in various areas on the identified Driver Outcomes.[6] For example, for individuals who are in the same age group, with a similar disability, living in the same type of residence, and receiving the same services, does it increase the likelihood of having outcomes present if the provider maintains a person centered focus in the documentation?

When the dependent variable is categorical, such as if the Driver Outcome is present or not present, logistic regression techniques are used. Results present the odds ratios and the statistical significance for each variable in the regression models. The p-value or probability value, is the probability the relationship between two variables is due to error and reflects the statistical significance of the relationship between the explanatory variable and the dependent variable. A p-value of .05 or smaller is generally accepted in social sciences as an indication there is a real impact on the dependent variable, and the chance of this being an error is five percent or less. A

[6] We discuss impact in this study. However, we do not usually have grounds to determine causality. Therefore, the impact is on the association between the two variables.

p-value of .10 indicates a 10 percent chance or less the results are due to error. Statistical significance levels are arbitrary and
depend upon how much error you are willing to accept in the model or research area.

Data for this study use a 95 percent confidence level and +/- 5 percent confidence interval. Therefore, 95 percent of the time the true population parameter, represented by the sample statistic, will be within the confidence interval. If the odds ratio is 0.85 and the confidence interval is 0.74 to 0.99, we have a high degree of confidence the true odds ratio is within that span. If the confidence interval does not include one, the p value is .05 or less and the relationship is defined as significant.

The odds ratio provides an indication of the strength of the relationship between the explanatory variable and the dependent variable, holding other factors in the model constant: the percent change in the odds of having the Driver Outcome present for a unit change in the explanatory variable. Odds ratios greater than one indicate a positive relationship, or that an increase on the explanatory variable is associated with an increase on the dependent variable. Odds ratios between 0 and 1 indicate a negative or inverse relationship, where an increase on the explanatory variable is associated with a decrease in the outcome. An odds ratio of 1 means the odds are the same, regardless of the response on the explanatory variable. The farther away the odds ratio is from one, the stronger the relationship.

When categorical variables are used as explanatory variables in regression analysis, results are compared to a “reference” group for the variable. For example, results are provided for the impact on outcomes for individuals with ID as compared to individuals with Profound ID. In our analyses, results are presented in comparison to the relevant reference group.

To investigate the impact of the PRR standards on the PCP and CIR outcomes, we use two series of regression models. We first use all the individual characteristics and services to identify their impact on each Driver Outcome. We then add to the equation, one at a time, each PRR standard. The resulting analyses included 28 models to assess the effect of provider performance on the outcomes that are most likely to predict the presence of other outcomes for individuals. The two PRR standards with compliance of 95 percent and higher were not included in the statistical analysis models.

Results

Base Model

The base model includes all of the control variables. Results for statistically significant associations are presented in Table 5. Odds ratios are stronger as they get farther from 1:

- If between 0 and 1 it shows a negative impact where an increase on the explanatory variable is associated with a decrease on the dependent variable; and
- If greater than 1 a positive impact where an increase is reflected for both explanatory and dependent variables. A dash (-) is shown if there was no statistical significance found.

Table 5: Logistic Regression Results for Base Models
Individual Level Characteristics and Driver Outcomes (PCP and CIR)

	Person Centered Planning			Community Integration and Rights		
	Odds Ratio	Confidence Interval		Odds Ratio	Confidence Interval	
Group Home vs Host Home	-	-		0.64	0.53	0.78
Group Home vs Own Place	0.77	0.62	0.97	0.77	0.62	0.94
Group Home vs Parent's Home	0.81	0.69	0.96	0.85	0.73	1.00
Host Home vs Parent's Home	-	-		1.33	1.08	1.63
Community Access Services vs Supported Employment	0.77	0.61	0.99	0.68	0.54	0.85
Community Living Support vs Supported Employment	-	-		0.64	0.48	0.84
Community Residential Alternative vs Supported Employment	-	-		0.66	0.51	0.86
Prevocational vs Supported Employment	-	-		0.62	0.47	0.80
Regions						
1 vs 3	0.80	0.67	0.95	-	-	
1 vs 4	0.57	0.45	0.72	0.43	0.34	0.53
1 vs 5	0.54	0.43	0.70	0.66	0.53	0.81
1 vs 6	-	-		0.80	0.66	0.98
2 vs 4	0.59	0.47	0.76	0.39	0.31	0.50
2 vs 5	0.57	0.44	0.73	0.60	0.48	0.75
2 vs 6	-	-		0.74	0.60	0.91
3 vs 4	0.71	0.57	0.89	0.45	0.36	0.55
3 vs 5	0.68	0.54	0.87	0.68	0.55	0.84

Table 5: Logistic Regression Results for Base Models Individual Level Characteristics and Driver Outcomes (PCP and CIR)						
	Person Centered Planning			Community Integration and Rights		
	Odds Ratio	Confidence Interval		Odds Ratio	Confidence Interval	
3 vs 6	1.83	1.50	2.23	-	-	
4 vs 5	-	-		1.53	1.19	1.98
4 vs 6	2.57	2.00	3.29	1.87	1.47	2.38
5 vs 6	2.68	2.07	3.49	-	-	
Age 18 to 25 vs 26 to 44	0.75	0.60	0.92	-	-	
Age 26 to 44 vs 55 to 64	1.28	1.06	1.54	-	-	
ID vs Profound ID	-	-		1.42	1.15	1.75

Findings indicate the importance of residential setting and Supported Employment services in meeting standards that drive other outcomes.

- Individuals living in group homes were less likely to have PCP standards met than individuals living in their own place or in a parent's home.
- The association of group home with host home showed an odds ratio of .87 but the error rate was just over the .05 level. Therefore, group home residents were less likely to have PCP outcomes present but the error rate for this is slightly above five percent.
- Individuals in group homes were also much less likely to meet the CIR standards, compared to all other residential settings.
- Living in a host home is apparently more beneficial in supporting community integration and rights than living with a parent.
- Receiving Supported Employment appears to be more beneficial than receiving any other service in supporting community integration and rights.

Many of the differences between the regions were statistically significant. Age does not appear to impact outcomes related to community and rights. However, young adults, age 26 to 44, were more likely to have PCP standards met than the youngest group (18 to 25) and than older adults age 55 to 64. Finally, the type of disability the person has significantly impacts the community and rights standards. Individuals with ID, compared to Profound ID, are close to one and a half times more likely to have these standards met.

Provider Performance (PRR)

Each PRR standard was added independently to the base model to assess the impact on the Driver Outcomes. Odds ratios (OR), p-values, and confidence intervals for each standard are presented in Attachment 1. A summary of PRR results is displayed in Table 6. With a few exceptions, most standards significantly impact the identified Driver Outcomes.

- The strongest predictor of both Driver Outcomes is if the person is afforded the opportunity to choose community supports and services. Individuals with this present were two and a half times more likely to have the PCP outcomes present (OR=2.52) and three and a half times more likely to have CIR outcomes present (OR=3.54).
- If providers ensure individuals have a choice of services and supports, the individuals were much more likely to have the PCP and CIR outcomes presents, ORs of 2.20 and 2.23 respectively.
- Another relatively strong predictor of Person Centered Planning is if the provider offers documentation that individuals direct their own supports and services (OR=1.91).
- One of the more compliance oriented standards was a strong predictors of the CIR outcomes; if the provider meets NOW/COMP requirements (OR=1.98).
- Standards showing that potential risk is managed and the provider has a means to identify health status and safety were not associated with Person Centered Planning but had a relatively strong positive association with Community Integration and Rights.
- While ensuring provider who administer medication use proper oversight and processes, this does not appear to impact the Driver Outcomes as identified in this study.

Table 6: Provider Record Review Standards and FOA
Logistic Regression Odds Ratios; July 2010 - March 2014

Person Centered Practices	PCP	CIR
Person centered focus supported in documentation.	1.70*	1.68*
Individual is making progress/achieving desired goals.	1.57*	1.56*
Individual directs supports and services.	1.91*	1.86*
Rights		
Human and civil rights are maintained.	0.87	1.49*
Clear description of services/supports/care/treatment.	0.86*	1.35*
Information is protected, organized and confidential.	0.85*	1.39*
Personal funds are managed by the person and protected.	0.72*	1.01
Health and Safety		
Potential risk to individuals/staff/others is managed.	1.04	1.34*
Means to identify health status and safety needs.	0.98	1.77*
Appropriate medication oversight and administration.	1.25	1.16
Choice		

Table 6: Provider Record Review Standards and FOA Logistic Regression Odds Ratios; July 2010 - March 2014		
Individual is afforded choices of services and supports.	2.20*	2.23*
Community		
Individual chooses community services and supports.	2.52*	3.54*
Miscellaneous		
Meets NOW/COMP documentation requirements.	1.11	1.98*

* Denotes statistical significance =<0.05.

Discussion and Recommendations

In this study we used data from the Delmarva reviews (individual interviews and provider record reviews) conducted as part of the Georgia Quality Management System between July 2010 and March 2014 to identify outcomes that are most likely to generate other outcomes for individuals and the provider performance areas most associated with these outcomes. We used multivariate analytic techniques to assess the association of PRR standards with the identified Driver Outcomes.

Through Principal Component Analysis, we constructed two Driver Outcomes, each consisting of four III standards. The Person Centered Planning component explained the greatest amount of variance in the outcomes, and is the most important driver of all III outcomes. The four outcomes together, when present, help improve the quality of life for individuals across all areas of their lives, including health and safety, rights and choice. The PCP component is comprised of standards that clearly represent the significance of having the person involved in planning and choosing services that reflect their desired goals:

- The person is afforded choice of services and supports.
- The person is involved in the design of the service plan.
- The person's goals and dreams are reflected in supports and services.
- The person is achieving desired outcomes/goals.

Community integration and the development of social roles in those communities have been long standing goals for state DD programs. Building on community involvement and the person's right to make decisions about this and other aspects of life, increases other outcomes for individuals. This also provides more opportunities to develop friendship networks and natural supports in the community, lessening the need for state funded services. The second identified

Driver Outcome (CIR) is comprised of these critical III standards that impact the degree to which other outcomes are present for individuals:

- The person actively participates in decisions concerning his or her life.
- The person is educated and assisted to learn about and exercise rights.
- The person has opportunities to access and participate in community activities.
- The person is developing desired social roles.

Independent of factors that impact both the PCP and CIR components is the importance of simply having these present. We offer the following recommendations based on the identified Driver Outcomes.

Recommendation 1: Continue to support efforts to promote and improve Person Centered Thinking and Social Role Valorization training. These training sessions should be competency based and mandatory for all providers.
Recommendation 2: Design support coordination monthly and quarterly monitoring processes around the predictor outcomes identified in the PCP and CIR components.
Recommendation 3: Require providers and support coordinators to review goals and objectives with each person on a monthly and/or quarterly basis, with a focus on supporting individuals to drive their services and develop their own goals.

In this study we have identified several aspects of the system that are highly correlated with the Driver Outcomes, including the individuals' type of residence, the services they receive, the degree of intellectual disability, and provider performance in key areas. Reports submitted to the state of Georgia as part of the GQMS system have consistently indicated that individuals living in a group home are less likely to have III outcomes present than in any other residential setting. However, results here indicate this association is quite robust and persists when controlling for other factors as well. On the other hand, living in a Host Home appears to have some benefit in terms of accessing the community and exercising rights, compared to individuals living in a group home or with a parent. Perhaps this is the result of the independence gained by living away from a parent while maintaining a more home-like environment, as opposed to a more structured group home setting.

Recommendation 4: The state should develop incentives for providers to decrease the number of individuals living in group home settings and increase the availability of Host Homes. Monetary incentives attached to rates could be considered.
Recommendation 5: The state Quality Improvement (QI) Council, through a workgroup or QI initiative, could provide insight into other incentives that could be used to reduce the number of individuals living in group homes across the state.

Recommendation 6: Offer facility based training on an array of PCP activities and community outreach programs to individuals living in group homes. Providers from the facilities could attend train the trainer sessions to effectively teach the sessions in their homes.

Quarterly and annual reports to the state have shown that receiving Supported Employment improves outcomes for individuals. In our current research, the importance this service persists. While controlling for other factors, individuals with Supported Employment are more likely to have the CIR Driver Outcomes present than individuals receiving any other service. This finding supports the assumptions that working in an integrated setting improves the person's ability to: acquire social networks and friends; learn about other community activities; embrace and develop social roles; and develop the self esteem to make decisions and exercise rights. At the same time, less than nine percent of the population receives this critical service.

Recommendation 7: Continue to support the Supported Employment Leadership Network's (SELN) efforts to increase supported employment in the state of Georgia.
Recommendation 8: The state should consider increasing rates for providers offering Supported Employment services as an incentive to include more individuals in a service that strongly impacts outcomes.
Recommendation 9: Increase support for individuals as they move out of the school system, through Supported Employment training for families and individuals. This training should be extensive and include a session with actual employees from the community.
Recommendation 10: The state should assess the extent of interaction and overlapping policy between DBHDD and Vocational Rehabilitation to update and revise the system to effectively and efficiently provide employment for more individuals with IDD. A five year plan to work interactively could be established, with a set of concrete goals delineated, showing the percent of individuals with IDD working in an integrated environment.

While having an intellectual disability vs Profound ID had no impact on the individual's ability to achieve the outcomes for Person Centered Planning, individuals with Profound ID were must less likely to have community integration or to exercise rights. Individuals with more complex needs are likely to require a greater array of services to achieve the same outcomes as their counterparts with ID. They may also have a more difficult time acquiring integrated employment that increases social interactions, or communicating their expressed goals.

Recommendation 11: Further work should be completed addressing specific needs of the population with Profound ID and how the state can better support their community involvement and their ability to exercise their rights. Delmarva could work with the Regional QI Councils to set up focus groups across the state to gather input from families and individuals.

A primary purpose of the study was to define areas within the provider organizations that may be strong predictors of the Driver Outcomes. By doing so, we can target training and technical assistance in ways that provide the greater return for individuals. Findings indicate that on average, when providers perform well on the record review standards, successfully implementing a variety of state and organizational policies, individuals are more likely to have outcomes present. However, some standards appear to be much stronger predictors of the Driver Outcomes than others. The strongest predictors of both PCP and CIR outcomes encompass informed choice and self-directed systems. Outcomes are better when the provider offers evidence the individual:

- Chooses community services and supports
- Has a choice of services and supports
- Directs services and supports

Having a person centered focus in the documentation has shown consistently low compliance over the past six years. However, this appears to have a relatively strong impact on the Driver Outcomes. It is interesting and not entirely clear why some of the more compliance oriented standards directly impact the CIR outcomes. If the provider meets NOW/COMP documentation requirements or maintains a central record for the person, the person is more likely to be integrated into the community, develop social roles, make life's decisions, and exercise rights.

Recommendation 12: Over the years Delmarva has provided numerous recommendations to address low compliance on many of these PRR standards. The state has implemented initiatives based on some of the recommendations, such as developing an extensive and comprehensive documentation training offered across the state. However, compliance remains low. Therefore, the state should consider creating similar standards for providers to track quarterly/annually, and report these to the state as part of the performance indicators used in developing provider report cards.

The State should consider the findings of this study in any new initiatives related to oversight and monitoring of provider performance. It is well known that people will "teach to the test," consequently developing measures and performance indicators around these specific areas will help drive outcomes for all served. Making providers and support coordinators accountable for developing and implementing systems reflective of each of these predictors and predictor areas will in turn improve the quality of the service delivery system for the state.