CONSULTANT SERVICES AGREEMENT

This Services Agreement (this "Agreement") is between Human Factor Analytics, Inc. (the "Consultant"), located at 3205 West Main Street, Russellville, Arkansas 72801 and the Bureau of Legislative Research. ("BLR"), located in the State Capitol Building, Room 315, 500 Woodlane Street, Little Rock, Arkansas 72201. Human Factor Analytics, Inc. provides Consulting Services as set forth in Schedule 1 hereto (the "Services"). The BLR desires to hire the Consultant to provide a review of the population health management and health data analytics for the state employees and public school employees of the State of Arkansas, to be presented to the State and Public School Life and Health Insurance Task Force (the "Task Force").

The Consultant and the BLR hereby agree as follows:

1. **Services to be performed.** The BLR hereby retains the Consultant to perform Services as set forth in Schedule 1 to this Agreement, which is attached hereto and incorporated into this agreement by reference.

2. **Data Required by Consultant.** In order to perform the Services, the Consultant requires Arkansas state employee data and public school employee data, information regarding benefit plans available to these groups, and other information necessary for the Consultant to perform the Services. The parties acknowledge that such data and information is in the possession of third parties; that the Consultant must rely on these third parties to cooperate in providing this data and information; and that the data and information may be subject to laws restraining or preventing their release or dissemination. This information is available through the Employee Benefits Division of the Arkansas Department of Finance and Administration ("EBD"). The BLR authorizes the Consultant to contact EBD to gather the information that it requires in order to perform the Services under this Agreement. BLR Staff will be available to help to facilitate the contact with EBD upon request by the Consultant.

   The Consultant will keep and hold the Employee Information and any other information confidential in accordance with Paragraph 8 of this Agreement. The Confidentiality provision of this Agreement imposes upon the Consultant certain obligations in connection with Protected Health Information ("PHI") as required under Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

3. **Deliverables.** The Consultant will prepare a report in electronic format to be provided to the BLR for use by the Task Force (the "Deliverables"). The final report shall be provided to the BLR no later than February 15, 2015. Except for the following, the BLR will own the Deliverables: (a) working papers of the Consultant; (b) Consultant's pre-existing materials or studies used in the provision of the Services and the Deliverables; (c) Consultant's know-how and processes used in the provision of the Services and Deliverables as well as any and all intellectual property owned by the Consultant that may be employed in providing the Services and Deliverables. The Consultant is providing the Services and Deliverables for the use and benefit of the Task Force and the Arkansas General Assembly. The Services and Deliverables are not for a third party's use, benefit or reliance, other than members of the General Assembly. Except as described in Section 8 of this Agreement, the Consultant shall not discuss the Services or disclose the Deliverables until such time that the BLR provides Consultant notice that the BLR has disclosed the Services and Deliverables to third parties.

4. **Term and Termination.** The term of this Agreement will commence on December 19, 2014 and terminate on March 31, 2015. Either party may terminate the Agreement by giving ten (10) days prior written notice.

5. **Fees and Expenses.** In consideration of the Services, the BLR shall pay the Consultant a Consultancy Fee in the amount of Forty Thousand Dollars ($40,000). The Consultancy Fee will be due after delivery of the final report by Consultant to the BLR. In addition to the Consultancy Fee, the Consultant may submit invoices and receive reimbursement for travel expenses related to actual travel expenses incurred related to field work in providing the Services and related to attending meetings of the Task Force to provide testimony regarding the Services and Deliverables. Reimbursement for travel expenses under this Agreement may be up to but not exceeding Five Thousand Dollars ($5,000).

   All invoices from Consultant are due and payable by the BLR within thirty (30) days of receipt by the BLR, except when the BLR in good faith disputes any portion of an invoice in which case only the undisputed portion is due and payable within the thirty-day period.

6. **Governing Law.** This Agreement shall be governed by the laws of the State of Arkansas, and the rights and remedies of the parties hereunder shall be determined by such laws. Each party hereby submits to the jurisdiction of the judicial and administrative forums of the State of Arkansas. Venue for all legal proceedings shall be in Pulaski County, Arkansas. Nothing in this Agreement shall be construed as a waiver of sovereign immunity of the BLR, the Task Force, or the Arkansas General Assembly.

7. **Assignment.** This Agreement may not be assigned without the prior written consent of both parties, which either party may withhold for any reason. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

8. **Confidentiality.** The Consultant and BLR both desire that their respective Confidential Information not be disclosed to others except as permitted by this Agreement and applicable laws and regulations, including the Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

   "Confidential Information" under this Agreement means non-public information that a party marks as "confidential" or "proprietary" or that otherwise should be understood by a reasonable person to be confidential in nature. Confidential information does not include any information which is (a) rightfully known to the recipient prior to its disclosure; (b) released to any other person or entity (including governmental agencies) without restriction; (c) independently developed by the recipient without use of or reliance on Confidential Information; or (d) or later becomes publicly available without violation of this Agreement or may be lawfully obtained by a party from a non-party.

   "Confidential Information" under this Agreement also includes: (i) individually identifiable health information including all information, data and materials, demographic, medical and financial information, that relates to the past, present, or future physical or mental health or condition of an individual, the provision of health care to an individual, or the past, present, or future payment for the provision of health care to an individual, and that identifies the individual or with respect to which there is a reasonable basis to believe the information can

be used to identify the individual (such information is referred to as "Protected Health Information" or "PHI" in HIPAA); and (ii) demographic information concerning members and participants in, and applicants for, state employee and public school employee benefits plans.

Each party will protect the confidentiality of Confidential Information that it receives under the Agreement except as required by applicable law, rule, regulation, or professional standard, without the other party's prior written consent. Due to the BLR being a public entity within the State of Arkansas, all terms of this Agreement, including but not limited to fee and expense structure, are subject to disclosure under the Freedom of Information Act of 1967, Ark. Code Ann. § 25-19-101, *et seq.*

If disclosure of Consultant's Confidential Information is required by law, rule, regulation, or professional standard, (including any subpoena or other similar form of process), the BLR shall provide the Consultant with prior prompt written notice thereof.

In consideration of Consultant's and BLR's agreement to provide one another with access to their respective Confidential Information, Consultant and BLR each agrees to maintain in confidence all Confidential Information of the other. Except as provided in this Agreement, neither Consultant nor BLR shall in any manner disclose any Confidential Information of the other to any person, entity, firm or company whatsoever, without the express written consent of the other. The Consultant and BLR shall each take all steps necessary to ensure that their respective affiliates, officers, employees, independent contractors, agents and other representatives (collectively "Representatives") maintain the Confidential Information in confidence.

[SIGNATURES APPEAR ON FOLLOWING PAGE]

IN WITNESS WHEREOF, Consultant and BLR have executed this Agreement this __ day of_____ , 2014.

CONSULTANT:

_____

Richard Kersh

_____

Printed Name

_____

Title

_____

Date

BUREAU OF LEGISLATIVE RESEARCH:

_____

Marty Garrity, Director

_____

Printed Name

_____

Title

_____

Date

Schedule 1

Human Factor ANALYTICS

Evidence-Based Population Health Management through Analytics

Presented to:

Arkansas State and Public School Life and Health Insurance Program Legislative Task Force

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Human Factor Analytics – History

Human Factor Analytics (HFA) is an analytics consulting company that provides data analysis and data warehousing for self-insured employers, healthcare benefits brokers, and wellness providers in order to analyze risk and identify what is driving present and future cost. HFA analyzes disparate data sets, including healthcare utilization data, biometric data, pharmacy data, health risk appraisal data, workers comp data, and absenteeism and productivity data. From the analysis, HFA suggests solutions to mitigate risk and reduce cost. These solutions are backed by empirical evidence derived from statistical analyses of the data.

Human Factor Analytics is based on more than 25 years of experience at the design and implementation of wellness programs and risk management solutions for employers throughout the United States. Our previous organization, Kersh Risk Management, created patent-pending software for measuring the financial efficacy of a wellness program or risk intervention. Over the past 25 years, we engaged in various risk management contracts and population health management studies with corporations such as Union Pacific Railroad, Anheuser Busch, Bemis Corporation, Arkansas Baptist Health System, Tyson Foods, etc.

The experience of analyzing multiple employers' healthcare utilization data provided the necessary industry knowledge for the development of our current analytics capabilities.

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HFA Milestone Projects

- ★ Currently serving as population health and analytics consultant for Florida Department of State Group Insurance. HFA has developed a 5-year plan for implementing population health management strategies within the State of Florida insured population (approx. 360,000 lives).
- ★ HFA has served as population health management and analytics consultant for several large insurance benefits administrators.
- ★ Analytics provider for Arkansas Employers' Health Coalition.
- ★ Analytics partner for Institute of Health & Productivity Management (IHPM), both domestic and international.
- ★ Beginning in 2015, HFA will serve as analytics partner for a large Accountable Care Organization (ACO) in the State of Arkansas.
- ★ Engaged to evaluate pre/post results for several Fortune 500 corporations' population health management programs.
- ★ Innovate Arkansas client since 2011

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Understanding Population Health Management

- ★ 70% of all illness is related to lifestyle modifiable risk factors (e.g., lack of exercise, obesity, poor nutrition, etc.) (Reference: American College of Preventive Medicine, 2009)
- ★ The ROI associated with standard wellness programming methodology is questionable.
- ★ Population health management strategies that utilize prescriptive methodologies (i.e., content to the specific employer) are much more successful at reducing risk within the population.
- ★ Population health management strategies must be sensitive to the employer's culture in order to be effective.
- ★ Population health management strategies should have components that positively impact employee productivity and reduce absenteeism and turnover. This is sometimes a forgotten loss center that is not addressed.
- ★ Population health management programs create vast amounts of data (i.e., biometric, health risk appraisal, and healthcare data, etc.). The employer must have systems in place to make meaningful use of the data.

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Solutions for Consideration

Human Factor Analytics proposes to provide the following services to the State of Arkansas, with the goal to reduce health risk among State employees and improve quality of life:

- ★ Conduct a preliminary analysis of archival healthcare-related data to inferentially determine best-fit interventional strategies for population health management.
- ★ Report key findings and suggested solutions that are validated through relevant statistical analysis and empirical evidence.
- ★ Develop 5-year plan for population health management, based upon the findings of the aforementioned preliminary data analysis.
- ★ Warehouse State of Arkansas healthcare data and conduct ongoing pre/post analyses to measure the success of the proposed solutions and to hold potential vendors accountable.

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Our Process and System for Creating Meaningful Use of Data and Improving Outcomes

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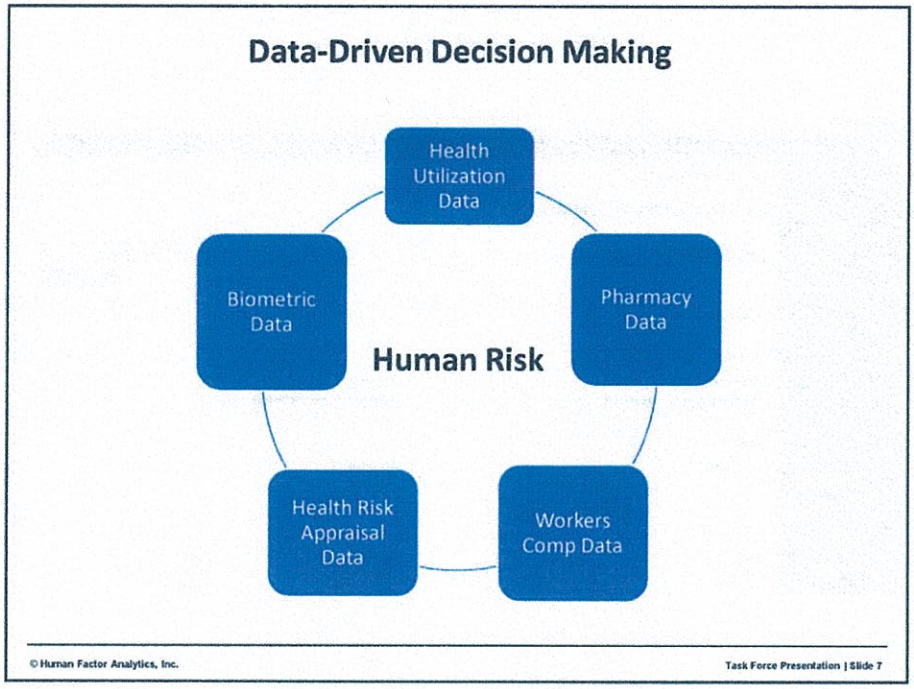
Data-Driven Decision Making
Health Utilization Data
Biometric Data
Pharmacy Data
Human Risk
Health Risk Appraisal Data
Workers Comp Data
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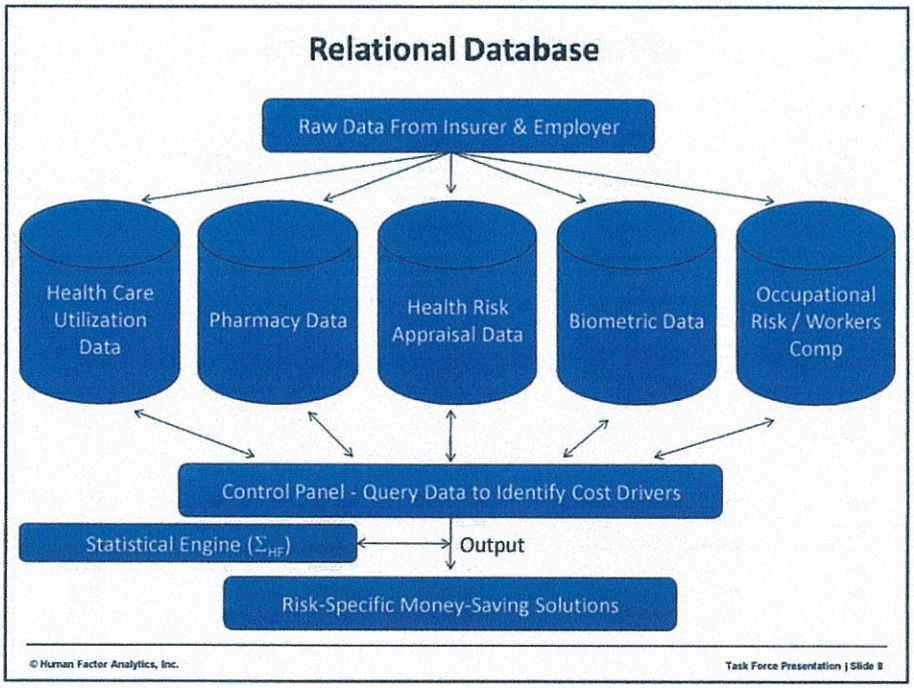
Task Force Presentation | Slide 7


Relational Database
Raw Data From Insurer & Employer
Health Care Utilization Data
Pharmacy Data
Health Risk Appraisal Data
Biometric Data
Occupational Risk / Workers Comp
Control Panel - Query Data to Identify Cost Drivers
Statistical Engine (Σ_{HF})
Output
Risk-Specific Money-Saving Solutions
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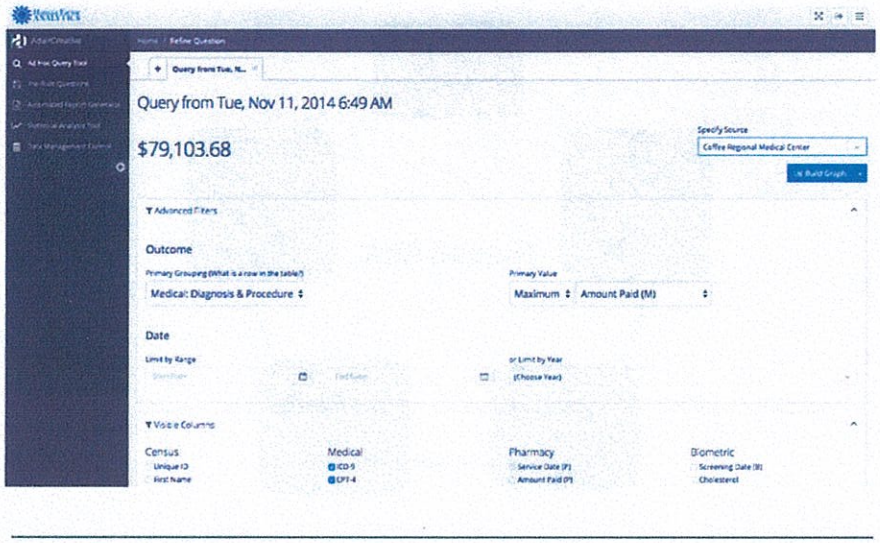
Task Force Presentation | Slide 8

HFA Analytics System



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HFA Analytics System (cont.)

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Meaningful Use of Data

Biometric variables used within the gold group criteria only explained 1% of an individual's overall spending (i.e., Glucose, Triglycerides, HDL Cholesterol, Waistline, Blood Pressure, Tobacco Use).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.105[a]	.011	.003	4586.26459

a. Predictors: (Constant), TobaccoUse, Waist Size Group, BldPressBelow130over85, GlucoseOver100, HDLCholesterolLow, TrigylceridesOver150

Amount of future spending variance explained by risk factor criteria

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.79CE8	6	29840906.133	1.413	.207[a]
	Residual	1.601E10	758	21126648.147		
	Total	1.619E10	764			

a. Predictors: (Constant), TobaccoUse, Waist Size Group, BldPressBelow130over85, GlucoseOver100, HDLCholesterolLow, TrigylceridesOver150

b. Dependent Variable: AmountPaid_post.self

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	635.947	617.438		1.030	.303
	GlucoseOver100	549.484	346.973	.059	1.584	.114
	TrigylceridesOver150	477.702	373.036	.051	1.281	.201
	HDLCholesterolLow	-41.526	359.207	-.004	-.116	.908
	Waist Size Group	274.779	354.112	.029	.776	.438
	BldPressBelow130over85	53.795	341.745	.006	.157	.875
	TobaccoUse	-525.747	341.712	-.057	-1.539	.124

a. Dependent Variable: AmountPaid_post.self

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.282[a]	.080	.065	4541.06845

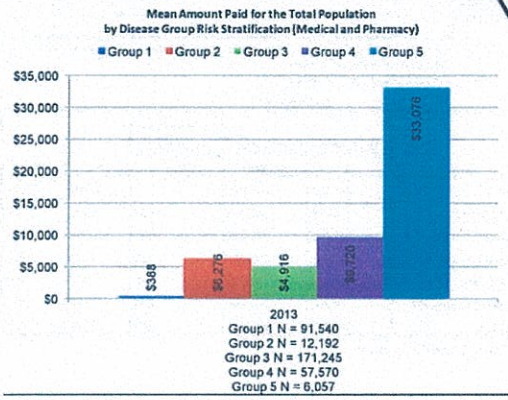
a. Predictors: (Constant), iCarePlus, Age Group, LDL Cholesterol Group, BMI Group, Glucose Group, Blood Pressure Group (Systolic), Female, Waist Size Group, nDiagsGp2010, TrigylceridesOver150, HDL Cholesterol Group, Tobacco.self, iCare

Increased explanation of future spending when contributing variables are included in analysis

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig
1	(Constant)	-1890.724	1406.508		-1.344	.179
	Age Group	519.892	219.026	.088	2.374	.018
	Female	515.413	584.294	.034	.882	.378
	nDiagsGp2010	898.270	155.738	.223	5.768	.000
	Tobacco.self	-.840	390.765	.000	-.002	.998
	BMI Group	1.116	136.300	.000	.008	.993
	Blood Pressure Group (Systolic)	86.108	224.453	.014	.384	.701
	LDL Cholesterol Group	-156.993	162.364	-.034	-.967	.334
	HDL Cholesterol Group	-243.867	275.091	-.035	-.886	.376
	Glucose Group	711.739	419.643	.061	1.696	.090
	Waist Size Group	28.960	358.856	.003	.081	.936
	TrigylceridesOver150	314.549	374.673	.033	.840	.401
	iCare	314.548	892.894	.030	.352	.725
	iCarePlus	345.939	983.628	.032	.352	.725

Disease Group Risk Stratification

Group	Description
1	No Chronic disease and less than $1,500 medical expenditures per 12 months
2	No Chronic disease and $1,500 or more medical expenditures per 12 months
3	Chronic disease with no co-morbidities
4	Chronic disease with co-morbidities
5	Chronic disease with co-morbidities and complications



Random combination of acute events, low predictability

More costly random combination of acute events, low predictability

Stabilized individuals with chronic disease

More costly group with chronic disease in combination with one or more co-morbidity

Most costly group, impacting a small percentage of the population, extremely difficult to move from Group 5 to other groups, best chance is to stabilize the population

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Human Factor ANALYTICS

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