AGENDA

State and Public School Life and Health Insurance Board

February 20, 2018

1:00 p.m.

EBD Board Room – 501 Building, Suite 500

I.	*Call to Order*	*Dr. John Kirtley, Chair*
II.	*Approval of January 24, 2018 Minutes*	*Dr. John Kirtley, Chair*
III.	*ASE-PSE January Financials*	*Cheryl Reed, EBD Fiscal Officer*
IV.	*Benefits Sub-Committee Report*	*Chris Howlett, EBD Executive Director*
V.	*Quality of Care Report*	*Chris Howlett, EBD Executive Director*
VI.	*DUEC Report*	*Dr. Dwight Davis, UAMS*
VII.	*Cheiron Update*	*John Colberg, Cheiron*
VIII.	*Emerging Therapies*	*Laura Trivette, Frank Burrows, MiMedx Group, Inc*
IX.	*Emerging Therapies*	*Dr. David Harshfield, Morgan Pile, Regenerative Therapies*
X.	*Director's Report*	*Chris Howlett, EBD Executive Director*

Upcoming Meetings

March 20, 2018, April 17, 2018, May 22, 2018

NOTE: All material for this meeting will be available by electronic means only

Notice: Silence your cell phones. Keep your personal conversations to a minimum.

STATE AND PUBLIC SCHOOL LIFE AND HEALTH INSURANCE BOARD MEETING MINUTES

178th meeting of the State and Public School Life and Health Insurance Board (hereinafter called the Board), met on February 20, 2018 at 1:00 p.m. in the EBD Board Room, 501 Woodlane, Suite 500, Little Rock AR 72201.

Date | *time* 2/20/2018 1:00 PM | *Meeting called to order by Dr. John Kirtley, Chair*

Attendance

Members Present	Members Absent
Dr. Terry Fiddler	Dr. Lanita White
Stephanie Lilly-Palmer	
Renee Mallory- Vice-Chair – Proxy – Robert Brech	
Greg Rogers	
Melissa Moore	
Dr. John Kirtley - Chair	
Carla Haugen	
Rett Hatcher	
Dori Gutierrez	
Herb Scott	
Lisa Sherrill - Teleconference	
Cindy Gillespie	
Chris Howlett, EBD Executive Director, Employee Benefits Division	

OTHERS PRESENT:

Eric Gallo, Rhoda Classen; Gretchen Baggett, RaQueisha Washington, Ellen Justus, Cheryl Reed, EBD; Kristi Jackson, ComPsych; Sandra Wilson, ActiveHealth; Mike Motley, Elizabeth Whittington, Arlo Kahn, ACHI; Scott Pace, APA; Ronda Walthall, ARDOT; Suzanne Woodall, MedImpact; Karyn Langley, QualChoice; Frances Baughman, Nova Nordisk; Marc Watts, ASEA; Bud McConkie, Allergen; Sean Seago, MERCK, Sherry Bryant, EBRX; Jessica Akins, Takisha Sanders, Health Advantage; Marc Bagby, B Christian, Lilly; Seth Pinkerton; Dana Lazzari, ABCBS; Donna Morey, ARTA; Charlotte Downs, Sanfi; Jenna Goldman, Delta Dental; Stephen Carroll, Mark Adler, AllCare; Andrea Tedder; Catherine Kelley, Gov Office; Karen Henson, Cyndy Jones, AGFC; Carl Keller, Dr. David Harshfield, ICMC; Jill Johnson, UAMS; Jason Jersey, DataPath; Ray James, Micah McClung, Leah Lishman, Rebecca Davis, Brittany Hogan, Savanna Nellis, Mollie Hicus, Michael McMahan, Madison Christie, UALR

Approval of Minutes by: Dr. John Kirtley, Chair

Kirtley asked for a motion to approve the January 24, 2018 minutes.

Haugen motioned for adoption of the minutes. Lilly-Palmer seconded; all were in favor.

Minutes approved.

Financials by: Cheryl Reed, EBD Fiscal Officer

Reed reported financials for January 2018.
For January PSE, four (4) weeks of medical and pharmacy claims were paid. FICA savings was $524,921 for the month and year-to-date. There was a net gain of $4.56 million for the month and year-to-date.

For ASE for the month of January, four (4) weeks of medical and pharmacy claims were paid. There was a net loss of $1.02 million for the month and year-to-date. Net assets available are $33.3 million.

Gillespie questioned if EBD is seeing an impact on the financials from the flu season.

Reed stated that it hasn't been looked at and couldn't answer. She can get that information for you.

Howlett reported that we aren't seeing a dollar increase year-over-year for the vaccinations, and above that we will verify the medical costs.

Benefits Sub-Committee Report by: Chris Howlett, EBD Executive Director

Howlett reported that on February 9th, the Benefits Sub-Committee met and were provided a brief update from the last 18 months to 2 years of the financial side from an actuarial attestation perspective from Cheiron.

Quality of Care Committee Report by: Chris Howlett, EBD Executive Director

Howlett reported that on February 13th, The Quality of Care Committee met, and ACHI presented an update on the information they have been working on over the past year to a year and half. Included in the report was: general anesthesia for colonoscopies, bariatric surgery program analysis, a health risk assessment survey analysis, and wellness program support.

DUEC Report by: Scott Pace, APA & Jill Johnson, UAMS

I. The DUEC committee has decided not to change its position on Ocaliva.
II. 2nd Review of Drugs: A.Cerdelga, B. Ampyra, C. Cyramza, D. Radicava, E. Emverm F. Fluoxetine, G. Isordil, H. Doxepin 5% cream, I. Zyclara, J. Formulary Cleanup (Removal of Products), K. Formulary Cleanup (Co-payment Tier Change of Products).

Dr. Fiddler questioned, what is being used in place of the Cordran tape?

Dr. Johnson reported that it is the only tape. There are other Cordran products, or high potency products that we use instead of tape.

Dr. Kirtley asked for a motion to approve all recommendation for letters A through K. Haugen motioned for approval of the recommendations. Brech seconded.

Motion approved.

III. Rebate Review: Botulinum Toxin and Growth Hormone Products

Dr. Kirtley asked for a motion to approve the recommendation for empower EBRx to solicit rebates for these two categories of products. Dr. Fiddler motioned for approval of the recommendations. Gillespie seconded.

Motion approved.

IV. New Drugs
   a. Non-Specialty Medication Additions

Dr. Fiddler asked how long Shingrix has been on the market?

Dr. Pace stated that it came on the market in December. It has received recommendations from the ACIP for placement as a first line for Shingles Prophylaxis.

Dr. Fiddler questioned what the efficacy of it is?

Dr. Johnson reported that it is 96%-97% and varies by age. The DUEC recommended that it be covered for ages 50 and over with a $0 copay.

Dr. Kirtley asked for a motion to approve all recommendation for the Non-Specialty medication additions as presented with the correction of $0 copay for ages 50 and over to match the previous product for Shingrix. Haugen motioned for approval of the recommendations. Scott seconded.

Motion approved.

   b. Specialty Medication Additions

Dr. Kirtley asked for a motion to approve all recommendation for the Specialty medication additions as presented. Lilly-Palmer motioned for approval of the recommendations. Haugen seconded.

Motion approved.

   c. Recommended Exclusions from the EBD Formulary

Dr. Kirtley asked for a motion to approve all recommendation exclusions from the EBD Formulary as presented. Haugen motioned for approval of the recommendations. Scott seconded.

Motion approved.

   d. Tabled from the November DUEC and Revisited at the February DUEC

Dr. Kirtley asked for a motion to approve all recommendations from the Tabled Drugs as presented. Lilly-Palmer motioned for approval of the recommendations. Haugen seconded.

Motion approved.

Cheiron Presentation by: John Colberg, Cheiron

Colberg presented on the financial side of EBD over the last two years and projected future numbers and rates.

For ASE:

- Assets increased in 2017 primarily due to better claims experience than expected.
- Other income was higher than expected and increase compared to 2015 and 2016; it is the main cause for higher than expected income.
- Active enrollment in 2017 declined slightly, mainly due to drop of dependents that is partially offset by an increase in single coverage. The non-Medicare Retiree population remained stable while the Medicare Retiree population increase slightly about as projected.
- The favorable experience and additional assets will likely significantly offset any increases need for the 2019 and 2020 plan years.

For PSE:

- Assets increased in 2017 primarily due to favorable claims experience (both medical and pharmacy) and a change in the timing of some State contributions.
- Enrollment in 2017 was slightly higher than projected for actives. Classic has the most active and non-Medicare retirees enrolled. Fewer participants enrolled in Premium than projected. Fewer non-Medicare retirees enrolled than assumed, while the number of Medicare retirees was higher than projected.
- January 2018 enrollment shows a growth in active enrollment over 2017 with less of a shift from Premium to Basic than assumed. Fewer retirees have enrolled than projected.
- The favorable experience and additional assets will likely significantly offset any rate increases needed for the 2019 and 2020 plan years.

Discussion:

Dr. Fiddler asked if Cheiron knew why the large claims have continually increased each year since 2012. Is it going up each year on the cost of large claims because of medical treatment and the number of medical claims that are turned in?

Colberg stated that in general yes, but there is definitely a volatility to it. We can provide this information for you.

Dr. Fiddler questioned if the person (the sicker person) that “know” they are going to be sick are going to be the ones to buy the premium plans, correct? You have to be planning on reserves (allocated or non-allocated) to cover those future losses for those that you can see getting sicker and sicker. They continue to pay that premium knowing that they will get really sick.

Howlett stated that was a fair assumption across the healthcare landscape. As a whole, the other issue is that you have the case management interventions that we have been able to put in place that didn’t exist up to two years ago. With better contracting and outreach with our vendors, we are seeing the numbers coming back to us that we are able to reach the members with comorbidities and other condition management opportunities that we have never been able to touch. We will provide you a

break out of the high dollar claims and the areas where these hit and target in and we can look at those and possibly tie those to the medical management.

Dr. Kirtley stated he feels like Dr. Fiddler wants to know if there is a linear projection that people on that plan consistently get sicker and sicker. It could be that there are patients in there that have a linear projection that their health worsens as they age. But, we are constantly trying to look at different metrics to help cease that for better healthcare overall so that we don't have to continually build.

Dr. Fiddler stated that if your case manager says that they can see the patient ending up here, how much can we do to catch it right here to level this off to keep this patient healthier with the exception of getting old. You can do something along the way to reduce the cost of care and to help them feel better.

Howlett stated that we could pull the data that Dr. Fiddler is requesting but you may see some skewed data due to the variance in the approach and how it was administered from the last two years. We may have some artificial numbers to skew the data.

Dr. Fiddler asked if it would be possible to have a heat map of pharmaceutical claims and one heat map of how many people are enrolled in a particular area and then see the break out on the claims for this area on the claims per capita.

Howlett would contend that we will explore this to make sure we are within disclosure requirements. Under 20,000 we may run into issues when you have a population size that you are bordering. Howlett would contend that we try a different approach. We may be able to look at drug classes and drug utilization de-identified. We have certain guidelines that we have to follow.

Hatcher asked for an overview of what will happen in the rate setting process and what all goes into that.

Howlett stated that we will fine tune both trust funds financials. You will receive those along with recommendations from EBD based on the financial outlook for that. This will go through some of the other committees based on some of the perspective incurred cost that we can see legislatively and will also discuss some of the pilot programs. Right now, we are at a 3.8% claims roughly based on the national trend of about 6.4%. We will have to factor in the adjustment of those medical and pharmacy claims that are coming back to about 5.2% static line. Colberg and his team will prepare his what some of the projections will look like based on the last year to 18 months and will have his recommendation as well.

MiMedx Presentation by: Laura Trivette & Frank Burrows, MiMedx

Howlett reported that Act 1089 (Emerging Therapies Act) is passed with the provision that the State Life and Health Insurance Board explore any emerging therapy that could be beneficial based on cost effectiveness of treatments and other purposes. In the October Benefits Sub-Committee meeting, McCook motioned to recommend to the Board that they authorized the director to do whatever is necessary to fill up the criteria for operational guidelines to begin a pilot program in 2018. It was approved and made it to the Board. Decisions will need to be made in operationalizing those

decisions if that is what the Board chooses. The operational decisions would need to be completed by July 1st, 2018.

Trivette and Burrows presented on what MiMedx does and the background on their products. MiMedx® is a biopharmaceutical company developing, manufacturing and marketing regenerative biologics utilizing human placental allografts for multiple sectors of healthcare.

Discussion:

Dr. Fiddler questioned what the shelf life of the products are?

Burrows stated that it is 5 years at ambient temperature.

Dr. Fiddler asked what the control is when referring diabetic foot ulcers?

Burrows stated that the standard of care would be offloading. When offloading for a diabetic patient you would want to isolate that injury and get the weight off of it, because these are caused by pressure. There is a technique called sharp debridement, which is the removal of dead tissue.

Dr. Fiddler questioned if you tend to have to use this product multiple times, especially in the most painful, chronic pain? This is a cost factor which is a large term thing.

Burrows reported there are a couple of ways to look at this. If you are looking at a large deficit where you need to create an optimal environment for a rotational flap or surgical flap, where they move tissue from one area of the body to cover a wound. This can be utilized to prep that wound and not use a secondary closure. You do a primary close, which is taking a skin graft and covering that area. This can be utilized in both aspects of that. In the clinical study, specifically, this was a serial weekly application of the product. As the wound gets smaller, less tissue is being used and there is less cost associated with that.

Dr. Fiddler questioned if you combine this with hyper oxygenation when you put them in a chamber or anything?

Burrows stated that from hyperbaric oxygen or hyperbaric oxygenation therapy, it can be used in conjunction with that. It really comes down to the pair. We have clinical studies that show with hyperbaric oxygen that you have an increase of stem cells that are mobilized from the bone marrow into the blood stream. Those stem cells with will collocate to a wound and help that healing process, which is why HBO therapy can be utilized the phase. These cells will also collocate with our stem cells.

Dr. Fiddler questioned does the Blue Cross Blue Shield already recognized some of this treatment?

Howlett stated that some of the products are on their coverage policy but the plan does not elect to use this at this time.

Gillespie questioned if in the studies you have done, have you seen different results at 4 weeks versus if you're brought it at 12 weeks or a year later or some of these that don't heal 2 or 3 years later?

Burrows reported that the majority of the wounds that are in this study are not new wounds. There is what's called a run-in period where you have to treat the patient over a series of time. We went after the difficult to heal wounds.

Gillespie asked if you have seen any difference in your results if the wound had been open for 3 years versus 4 weeks.

Burrows stated that we have some patients in different trials that show that there was no difference between whether it was earlier or later.

Regenerative Cellular Therapy by: Dr. David Harshfield & Carl Keller

Dr. Harshfield presented on Regenerative MedicineB is now a first line treatment to avoid or delay pharmacological or surgical treatments using the body's natural healing process. The Emerging Therapies Act of 2017 was signed into law by Governor Asa Hutchinson today, empowering the EDB to initiate a pilot program to assess the efficacy providing access to State Employees and Teachers through their health care plans to Regenerative Injection Therapies (RIT) as a treatment of orthopedic conditions. Arkansas now leads the country as the first state to adopt a policy to include these emerging therapies in state employee health insurance.

Discussion:

Scott questioned if they were from Little Rock?

Harshfield stated that they are located on Markham street across from Baptist by the clubhouse at Fair Park Golf Course. It is called the Arkansas Institute of Regenerative Medicine. We are going to build centers in Little Rock, Northwest Arkansas and El Dorado, so we cover the state.

Director's Report by: Chris Howlett, EBD Executive Director

Howlett reported that if any of the Board members have any questions or information they would like that they think about later, they can get in touch with Howlett and he will get that for you. He asked that the Board be thinking about where they want to go for Act 1089 so that we can set the tone for what it will look like.

Dr. Kirtley adjourned the meeting.

Meeting Adjourned.

Public School Employees (PSE) Financials - January 1, 2018 through January 31, 2018

	EMPLOYEE ONLY				EMPLOYEE + DEPENDENTS			
	ACTIVES	RETIREES	MEDICARE	TOTAL	ACTIVES	RETIREES	MEDICARE	TOTAL
BASIC	4234	431		**4665**	6367	571		**6938**
CLASSIC	24237	2115		**26352**	45934	2513		**48447**
PREMIUM	17800	657		**18457**	23457	709		**24166**
PRIMARY		58	12181	**12239**		116	13272	**13388**
TOTAL	**46271**	**3261**	**12181**	**61713**	**75758**	**3909**	**13272**	**92939**

REVENUES & EXPENDITURES

		Current Month	Year to Date (1 Month)
	Funding		
1	Per Participating Employee Funding (PPE Funding	$ 8,378,896	$ 8,378,896
2	Employee Contribution	$ 9,817,364	$ 9,817,364
3	Department of Education $35,000,000 & $15,000,000 & Other Funding	$ 26,433,333	$ 26,433,333
4	Other	$ 652,636	$ 652,636
5	Allocation of Reserves	$ 3,655,000	$ 3,655,000
	Total Funding	$ 48,937,229	$ 48,937,229
	4 Weeks HA 4 weeks QC 4 weeks pharmacy		
	Expenses		
	Medical Expenses		
6	Claims Expense	$ 18,962,276	$ 18,962,276
7	Claims IBNR	$ -	
8	Medical Administration Fees	$ 1,690,848	$ 1,690,848
9	Refunds	$ -	
10	Employee Assistance Program (EAP)	$ 80,049	$ 80,049
	Pharmacy Expenses		
11	RX Claims	$ 4,901,920	$ 4,901,920
12	RX IBNR	$ -	
13	RX Administration	$ 329,328	$ 329,328
14	Plan Administration	$ 314,361	$ 314,361
	Total Expenses	$ 26,278,782	$ 26,278,782
15	Less DOE Allocation	$ (18,100,000)	$ (18,100,000)
16	**Net Income/(Loss)**	$ 4,558,448	$ 4,558,448

BALANCE SHEET

	Assets	
17	Bank Account	$ 26,836,833
18	State Treasury	$ 140,265,240
19	Receivable from Provider	$ 34,342
20	Accounts Receivable	$ 12,139,025
21	Due from ASE	$ 99,105
	Total Assets	$ 179,374,545
	Liabilities	
22	Accounts Payable	$ 250
23	Due to ASE	
24	Deferred Revenues	
25	Due to Federal Government ($27 fee)	
26	Health IBNR	$ 25,700,000
27	RX IBNR	$ 1,400,000
	Total Liabilities	$ 27,100,250
28	**Net Assets**	$ 152,274,295
	Less Reserves Allocated	
29		
30	Premiums for Plan Year 1/1/18 - 12/31/18 ($3,840,000 + $660,000+18,100,000 DOE)	$ (18,945,000)
31	Premiums for Plan Year 1/1/19 - 12/31/19 ($396,000)	$ (396,000)
32	Premiums for Plan Year 1/1/20 - 12/31/20 ($264,000)	$ (264,000)
33	Premium Assistance (FICA Savings)	$ (524,921)
34	Catastrophic Reserve (2017 $58,500,000)	$ (58,500,000)
35	**Net Assets Available**	$ 73,644,374

36 Fifth Week of Claims

Arkansas State Employees (ASE) Financials - January 1, 2018 through January 31, 2018

	EMPLOYEE ONLY				EMPLOYEE + DEPENDENTS			
	ACTIVES	RETIREES	MEDICARE	TOTAL	ACTIVES	RETIREES	MEDICARE	TOTAL
BASIC	1645	44		**1689**	2578	59		**2637**
CLASSIC	2019	67		**2086**	3374	90		**3464**
PREMIUM	22839	2104		**24943**	39162	2643		**41805**
PRIMARY		207	9848	**10055**		430	12777	**13207**
TOTAL	**26503**	**2422**	**9848**	**38773**	**45114**	**3222**	**12777**	**61113**

REVENUES & EXPENDITURES

		Current Month	Year to Date (1 Month)
	Funding		
1	State Contribution	$ 14,539,000	$ 14,539,000
2	Employee Contribution	$ 8,124,923	$ 8,124,923
3	Other	$ 359,225	$ 359,225
4	Allocation of Reserves	$ 1,777,500	$ 1,777,500
	Total Funding	$ 24,800,649	$ 24,800,649
	4 weeks HA 4 weeks QC 4 weeks pharmacy		
	Expenses		
	Medical Expenses		
5	Claims Expense	$ 16,450,303	$ 16,450,303
6	Claims IBNR	$ -	$ -
7	Medical Administration Fees	$ 1,136,856	$ 1,136,856
8	Refunds	$ -	$ -
9	Employee Assistance Program (EAP)	$ 54,815	$ 54,815
	Life Insurance	$ 78,990	$ 78,990
	Pharmacy Expenses		
11	RX Claims	$ 7,672,026	$ 7,672,026
12	RX IBNR	$ -	
13	RX Administration	$ 70,374	$ 70,374
14	Plan Administration	$ 352,513	$ 352,513
	Total Expenses	$ 25,815,876	$ 25,815,876
15	**Net Income/(Loss)**	$ (1,015,228)	$ (1,015,228)

BALANCE SHEET

	Assets	
16	Bank Account	$ 15,054,102
17	State Treasury	$ 96,786,079
18	Due from Cafeteria Plan	$ 5,561,503
19	Due from PSE	
20	Receivable from Provider	
21	Accounts Receivable	$ (367,511)
	Total Assets	$ 117,034,173
	Liabilities	
22	Accounts Payable	$ 839
23	Deferred Revenues	$ 3,780
24	Due to Cafeteria	$ 150
25	Due to PSE	$ 99,105
26	Due to Federal Government ($27 fee)	
27	Health IBNR	$ 25,700,000
28	RX IBNR	$ 2,000,000
	Total Liabilities	$ 27,803,874
	Net Assets	$ 89,230,299
	Less Reserves Allocated	
29	Premiums for Plan Year 1/1/18 - 12/31/18 ($5,040,000 + $8,262,000 + $4,710,000)	$ (15,079,500)
30	Premiums for Plan Year 1/1/19 - 12/31/19 ($5,508,000 + $2,826,000)	$ (8,334,000)
31	Premiums for Plan Year 1/1/20 - 12/31/20 ($1,884,000)	$ (1,884,000)
32	Catastrophic Reserve (2017 $20,600,000)	$ (30,600,000)
33	**Net Assets Available**	$ 33,332,799
34		
35	Fifth Week of Claims	

PROJECTED PAID CLAIMS AND EXPENSES BY MONTH

PSE

2018 January

Medical Claims

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
15,300,000	18,962,276	3,662,276	15,300,000	18,962,276	3,662,276

Note: IBNR decreased for Medical by $4,300,000

Pharmacy Claims

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
3,310,000	4,901,920	1,591,920	3,310,000	4,901,920	1,591,920

Note: IBNR increased for Pharmacy by $300,000

Expenses/Other

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
2,740,000	2,414,586	(325,414)	2,740,000	2,414,586	(325,414)

ASE

2018 January

Medical Claims

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
14,100,000	16,450,303	2,350,303	14,100,000	16,450,303	2,350,303

Note: IBNR decreased for Medical by $2,300,000

Pharmacy Claims

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
6,160,000	7,672,026	1,512,026	6,160,000	7,672,026	1,512,026

Note: IBNR increased for Pharmacy by $300,000

Expenses/Other

PROJECTED Monthly Amount	ACTUAL Monthly Amount	DIFFERENCE Monthly Amount	PROJECTED YTD Total	ACTUAL YTD Total	DIFFERENCE YTD Total
2,180,000	1,693,548	(486,452)	2,180,000	1,693,548	(486,452)

State and Public School Life and Health Insurance Board
Drug Utilization and Evaluation Committee Report

The following report pertains to two separate meetings of the DUEC (November 6, 2017 and February 5, 2018) at 1:00 p.m., with Dr. Scott Pace presiding.

I. Ocaliva Discussion: *Dr. Knapple*

Dr. Pace mentioned that it is not our general practice to invite or allow audience members to come up and present clinical data. This instance is a special circumstance since there is new data available. Ocaliva was approved on an accelerated pathway by the FDA even though there was no new data or significant improvements noted.

Dr. Whit Knapple is a board certified Gastroenterologist in a single specialty group practice in North Little Rock. Arkansas Gastroenterology primarily treats Primary Biliary Cholangitis, PBC, which is a liver disease that can lead to cirrhosis and ultimately lead to liver transplantation. Until recently the only medical therapy was ursodeoxycholic acid. Most individuals responded to this therapy with a significant reduction in their alkaline phosphatase. Obeticholic acid has been approved by the FDA for individuals intolerant to ursodeoxycholic acid or did not have a therapeutic decrease in their alkaline phosphatase. The goal is to slow or stop cirrhosis of the liver.

The Ocaliva package insert states it has not shown an improvement in survival or disease-related symptoms. Clinicaltrials.gov shows there is an ongoing clinical trial currently recruiting that IS measuring clinical endpoints such as death, liver transplant, uncontrolled ascites, hospitalization for variceal bleed, etc. This trial should resolve these issues with Ocaliva.

The committee asked questions of Dr. Knapple, and chose to wait on a vote for future evidence.

II. 2nd review of Drugs: *by Dr. Jill Johnson, Dr. Geri Bemberg, and Dr. Dwight Davis - UAMS*

Drs. Johnson, Bemberg and Davis reviewed and made recommendations for the following medications.

A. **Cerdelga (Eliglustat):** Dr. Johnson discussed Cerdelga, a drug used for treating Gaucher disease Type 1. The first line of therapy is enzyme replacement therapy; however, at age 18+, therapy with enzyme inhibitor therapy (Cerdelga) was shown not worse than enzyme replacement. Dr. Johnson recommends to cover the drug with prior authorization.
Recommendation: Cover with Prior Authorization.

B. **Ampyra (dalfampridine):** Ampyra is use to improve walking of patients with multiple sclerosis. **Upon re-review of dalfampridine we found no compelling data that dalfampridine offers a clinically meaningful improvement in walking speed in multiple sclerosis patients.** The average improvement on treatment was 0.51 feet/second vs. 0.17 feet/second.
Recommendation: Exclude, Code 1

C. Cyramza (ramucirumab): For metastatic non-small cell lung cancer (mNSCLC), the drug showed a median overall survival (OS) benefit over chemotherapy of 1.4 months and no difference in quality of life. For metastatic gastric cancer, the drug showed a 2.2-month OS benefit over chemotherapy without a significant delay in time to deterioration or functional status. For metastatic colorectal cancer, there was a 1.6-month OS benefit over chemotherapy; quality of life was not measured. The drug was considered to provide limited medical benefit as the OS benefits did not reach the American Society of Clinical Oncology's threshold for a clinically meaningful benefit. (generally over 2.5 months, regardless of cancer type)

Recommendation: Exclude, Code 8

D. Radicava (Edaravone): Radicava is used for Amyotrophic Lateral Sclerosis (ALS – Lou Gehrig's disease). Dr. Johnson stated that Radicava was previously excluded, but she would like to recommend coverage for patients with ALS at the stage they will likely benefit from the drug requiring meeting criteria to identify for new starts as well as criteria for continuing therapy.
Recommendation: Cover, medical PA

E. Emverm (Mebendazole): Dr. Bemberg reviewed Emverm. Mebendazole chew tabs were released onto the market in the early 2000s. At that time, the price/tablet was under $7 each. The generic products went obsolete in 2011. In early 2016, Emverm was released at $442.80/tablet. There are other options available for Emverm's indications.
Recommendation: exclude Emverm

F. Fluoxetine 60mg: Dr. Bemberg presented on fluoxetine 60mg. Fluoxetine was released by Edgemont Pharmaceuticals in November of 2011. Fluoxetine 60mg is now owned and manufactured by Almatica Pharma, and is recognized by the FDA as a single source brand. Currently, this product is processing at Tier 2 ($40) for Premium and Primary members. Other fluoxetine strengths (10mg, 20mg, 40mg) are marketed as generics and are available in both capsule and tablet, at a much cheaper rate. While there are indications for which amounts of fluoxetine over 40mg are used, there is no evidence to support the use of a "convenience dose" of 60mg total at the expense of both the member and the plan.
Recommendation: Exclude fluoxetine 60mg, effective January 1, 2018. Members may achieve this dose using a combination of currently available products

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G. Isordil (isosorbide dinitrate): Dr. Bemberg stated there is no evidence available demonstrating superiority of Isordil Titradose over currently available formulations of isosorbide dinitrate. Isordil was developed by Wyeth Pharmaceuticals, who at some point sold the rights to the drug to Biovail Pharmaceuticals. Biovail Pharma merged with Valeant Pharmaceuticals in 2010.
Recommendation: Exclude.

H. Doxepin 5% Cream: Dr. Davis presented utilization data for 4Q2017 involving doxepin 5% cream. During 4Q2017, EBD paid $82,848 for 33 prescriptions (Avg. Plan Paid/Rx = $2,581). Other less expensive agents are available for pruritus.
Recommendation: Exclude

I. Zyclara (imiquimod 3.75% cream pump): Dr. Davis presented utilization data for 4Q2017 involving topical imiquimod products. These products are used most commonly to treat actinic keratosis and are available in 2.5%, 3.75% and 5% creams with no clinical advantage between products. During this period,

EBD paid $2,131 for two prescriptions (Avg. Cost/Rx (before co-pay) is $1,146). Generic imiquimod cream is available for $95/Rx (before co-pay).
Recommendation: Exclude

J. Formulary Cleanup (Removal of products): Drs. Bemberg and Davis proposed the exclusions of Nascobal nasal spray, Verdeso foam, Desonate gel, Dexpak, Cordran tape, Noritate Cream, Azasan tablets. All of the above-mentioned products are very expensive and have suitable less costly alternatives.
Recommendation: Exclude.

K. Formulary Cleanup (Co-payment Tier Change of products): Dr. Davis proposed changing the co-payment tiers for two very expensive drugs. **Tetrabenazine**, a generic drug, currently used to treat Huntington Disease, requires a generic co-payment of $15/30-day supply. This product costs $5,752/Rx before co-payment ($66/tablet). **Aquasol A** is a brand-name injectable vitamin A product. This product costs $1,014/Rx and currently requires a $40 co-payment/30 day supply.

Recommendation: Move Tetrabenazine and Aquasol A to Tier-4 ($100 / 30-day supply).

The committee recommended approval of the above recommendations.

III. Rebate Review: *by Dr. Rachael McCaleb, UAMS*

Dr. McCaleb reviewed the Botulinum Toxin products and growth hormones.

Botulinum Toxin Summary:

- From the available evidence, there is no proven superiority for a single BTP for treatment of cervical dystonia.
- For the treatment of blephaospasm, after dosage adjustment, Botox and Xeomin are probably equivalent, and Botox and Dysport are possibly equivalent.
- No head-to-head comparison of botulinum toxin products for treatment of spasticity. However, Botox, Xeomin, and Dysport are considered as safe and effective treatment options for spasticity.
- Evidence supports that Myobloc and Botox for primary axillary hyperhidrosis have similar efficacy and safety.
- No head-to-head comparison of botulinum toxin products in chronic migraines. Only able to locate studies evaluating Botox.
- No head-to-head comparison of botulinum toxin products in overactive bladder. Botulinum toxin products are superior to placebo.

Recommendation: EBD Formulary may include up to two covered products (i.e. 1 or 2); all other products will be excluded.

Growth Hormone Summary:

The currently available growth hormone replacement products are, by definition, similar in their clinical effects. Limited head-to-head data is available. Other than slight pharmaceutical differences, no pharmacologic difference among the agents exists in terms of safety and efficacy.

Recommendations: Include 1 formulary GH product, all others will be excluded from coverage except Serostim® (indicated for HIV wasting in adults) and Zorbtive® (indication for treatment of short bowel syndrome).

The committee recommended approval of the above recommendations.

IV. New Drugs*: by Dr. Jill Johnson and Dr. Jarrod King, UAMS*

Dr. Jill Johnson and Dr. Jarrod King reported on new drugs released July 3, 2017 – September 25, 2017.

A. Recommended Additions to the EBD Formulary

1. Non-specialty Medications

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Humalog Junior Kwikpen	insulin lispro 100units/mL	$42.43/mL	Diabetes	Humalog covered Tier 2 (Rebated)	T2
Benznidazole tablets	Benznidazole 12.5mg, 100mg tablets	$3.00 - $3.60 per tablet	Chagas Disease	N/A	T3 / PA
Baxdela tablets	Delafloxacin meglumine 300mg vial, 450mg tablet	$159/vial $81/tablet	Skin and skin structure infections	Most generic antibiotics covered on tier 1. Brands covered on tiers 2 or 3	T4 PA
Heplisav-B	Hepatitis B Vaccine/CPG1018/PF 20mcg/0.5ml vial	$138.00 per vial	Hepatitis B vaccine	ACIP recommended vaccines - T0	Cover for adults>18; may block Engerix or Recombivax HB for same age group
Vabomere	meropenem-vaborbactam 2g vial	$198/vial	Urinary tract infections, complicated		Cover @Specialty tier w/ PA
Shingrix	varicella-zoster vaccine (recombinant) kit	$168/kit	Shingles prevention	Zostavax - $0 copay for 50 years of age and older	Zero Copay for age >60; T3 for all others. Awaiting final ACIP guidelines. If no booster is necessary, QL of 1/lifetime. Exclude Zostavax.

2. Specialty Medications

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Jadenu Sprinkle	deferasirox 90mg, 180mg, 360mg packets	$42.69 - $170.77/packet	Chronic iron overload	Jadenu tablets - T4PA Exjade 500mg - T4PA	T4PA. Also add all doses of Exjade to formulary.
Rituxan Hycela	rituximab/hyaluronidase 11.7/1400, 13.4/1600 vial	$622.30 - 623.63/vial	CLL, Diffuse large B-cell lymphoma, Follicular lymphoma	Rituxan - PA medical	PA, medical
Renflexis	infliximab-abda 100mg vial	$904.07/vial	Multiple indications	Biosimilar for Remicade. Remicade and Inflectra both covered PA	T4PA with same PA as Remicade; relook at TIMS
Nityr	nitisinone 2mg, 5mg, 10mg tablets	$98.08- $490.42/tablet	Hereditary tyrosinemia type 1	Orfadin capsules & suspension T4PA	Cover T4PA; exclude Orfadin capsules and suspension, code 13.
Nuwiq	antihemophilia FVIII vials	$2.03	Hemophilia	Hemophilia agents T4PA	T4PA
Mylotarg	gemtuzumab ozogamicin 4.5mg	$9,840/vial	Multiple indications	Covered oncology agents at T4PA	PA, medical
Yescarta	axicabtagene ciloleucel	$447,600	CAR-T therapy for Large B-cell lymphoma		DCWG met 1/3/2018. Cover w/PA @ Specialty tier. Medical.
Juluca	Dolutegravir/Rilpivirine 50mg-25mg tablet	$103.16/tablet	HIV	HIV agents covered T4	Specialty tier w/ PA
Hemlibra	emicizumab-kxwh 30mg/mL, 60mg/0.4mL, 105mg/0.7mL, 150mg/mL vials	$17,856/mL	Hemophilia A, prophylaxis	Hemophilia products T4PA	Cover at Specialty tier
Rebinyn	factor IX human recombinant, pegylated 500unit, 1000unit, 2000unit vials	$4.80/vial	Factor IX deficiency	Hemophilia products T4PA	Specialty tier w/ PA. Rebate opportunity

B. Recommended Exclusions from the EBD Formulary

1. Non-specialty Medications

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Alzair	Hypromellose spray	$554.15	Allergies		Exclude, code 3
Prednisolone-nepafenac	Prednisolone-nepafenac 1%-0.1% eye drops				Exclude, code 3 & 13
Prednisolone-gatifloxacin	Prednisolone-gatifloxacin 1%-0.5%				Exclude code 3, Exclude Pred Mild code 13
Prednisolone-gatifloxacin-nepafenac	Prednisolone-gatifloxacin-nepafenac 1%-0.5%-0.1%				Exclude, code 3
Mydayis	Dextroamphetamine/amphetamine 12.5mg, 25mg, 37.5mg, 50mg extended release capsules	$10.83/capsule	ADHD	Generic extended release amphetamine salts available T1/RBP (QL) (MAC)	Exclude, code 13
Cotempla XR-ODT	methylphenidate 8.6mg, 17.3mg, 25.9mg XR ODT tab	$12.79/tablet	ADHD	methylphenidate products (IR & ER) available T1 (QL) (MAC)	Exclude, code 13
ArmonAir Respiclick	fluticasone propionate 55mcg, 113mcg, 232mcg inhalers	$188.09-$251.84/inhaler	Asthma for 12 years of age and up	Asmanex, QVAR preferred at T2 (Rebated)	Exclude, code 13
Flolipid	simvastatin 20mg/5mL & 40mg/5mL oral suspension	$2.03-$2.07/mL	Hypercholesterolemia	simvastatin available tier 1 (MAC)	Exclude, code 13
L.E.T.	Lidocaine-epinephrine-tetracaine 4%-0.05%-0.5% gel				Exclude code 3

Pertzye	lipase/protease/amylase 24K-86.25K DR capsules	$7.91/capsule	Pancreatic insufficiency	Other Pertzye strengths excluded; Creon, Pancreaze, Zenpep covered T2	Exclude, code 13. Look for rebate options for single Brand

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Duzallo	lesinurad/allopurinol 200-200mg & 200-300mg tablets	$14.84/tablet	Hyperuricemia associated with gout	allopurinol T1	Exclude, code 1, 13
Carospir	spironolactone 25mg/5mL oral suspension			spironolactone tablets available T1 (MAC)	Exclude code 13
Bevyxxa	betrixaban maleate 40mg & 80mg capsules	$18/capsule	VTE prophylaxis	Xarelto & Eliquis preferred X1 inhibitors at T2 (rebated)	Exclude
Nymalize	nimodipine 30mg/10mL oral solution	$5.38/mL		nimodipine capsules T1	Exclude, code 13; PA generic nimodipine and move to T4
Endari	glutamine 5g powder packets	$22.20/packet			Exclude, code 12
Gocovri	amantadine 68.5mg, 137mg ER caps	$47.50/capsule	Multiple indications	amantadine tablets, capsules, solution covered T1	Exclude, code 13
Cinvanti	aprepitant 130mg/18ml vial	$354/vial	chemotherapy-induced N/V	Emend caps/susp covered - T2 (QL) aprepitant (generic) - T2 (QL)	Exclude, code 13

Qtern	dapagliflozin-saxagliptin 10mg-5mg tablets	$17.22/tablet	Diabetes mellitus, type 2	DPP-4 excluded; Jardiance & Synjardy covered T2PA	Exclude, code 1 & 13
Zodex	dexamethasone 1.5mg (#21) pack	$10.80/tablet	Multiple indications	dexamethasone generic tablets covered tier 1 (MAC)	Exclude, code 13
Loyon	dicaprylyl carbonate-dimeth	$343.20/bottle		Loyon lotion available on Amazon	Exclude, code 3
Diclopr	diclofenace/met salicyl/menthol 1%-30%-10% gel	$1,400 per tube	Topical pain	Topical NSAIDs are excluded from plan	Exclude, code 13, 4
Parsabiv	etelcalcetide 10mg/2mL, 2.5mg/0.5mL, 5mg/mL vials	$196.20/mL	Hyperparathyroidism, secondary (CKD patients on HD)		Exclude, code 1
Bydureon Bcise	exenatide microspheres 2mg/0.85mL auto-injector	$186.84/auto-injector	Diabetes mellitus, type 2	Rebated category; Victoza is preferred, T2PA	Exclude, code 1, 13
Xhance	fluticasone propionate 93mcg nasal spray	$510 per bottle	Allergic rhinitis	Nasal steroids referenced priced. Fluticasone available T1 copay and OTC	Exclude, code 13
Trelegy Ellipta	fluticasone-umeclidinium-vilanterol 100mcg-62.5mcg-25mcg inhaler	$636/inhaler	COPD	Rebated categories; Dulera and Symbicort T2 (ST), Stiolto Respimat T2, Spiriva T2, etc	Exclude, code 13
Fiasp & Fiasp Flextouch	insulin aspart (niacinamide) 100units/mL vial; 100units/mL pen	$330.70/vial $383.20/box of 3 pens	Diabetes mellitus	Rebated category; Humalog is preferred; others excluded	Exclude, code 13

Vyzulta	latanoprostene 0.02% drops	$432.00	glaucoma	latanoprost 0.005% drops - T1 (MAC)	Exclude, code 13
Kamdoy	lidocaine-palm oil spray				Exclude, code 3
Ximino	minocycline 45mg, 90mg, 135mg ER capsules	$27.97/capsule	Acne	generic minocycle available T1 (MAC)	Exclude, code 13
Odactra	Mite.D.Farinae-D.Pteronyssinus 12 SC-HDM Sublingual tab	$11.65/tablet	House dust mite-induced allergic rhinitis		Exclude, code 12
Symproic	naldemedine tosylate 0.2mg tablet	$12.56/tablet	Opioid-induced constipation	Movantik covered T3PA; Amitiza T3PA	Exclude, code 13; rebate opportunity
Ozempic	semaglutide 0.25mg/0.2ml pen injector, 1mg/0.75ml pen	$811.20/box	diabetes mellitus Type 2	Rebated category - Victoza (liraglutide) - T2 (PA)	Exclude, code 13, revisit 1/2019
Retin-A Micro Pump	tretinoin microspheres 0.06%	$1,093.50	Acne, palliation of fine wrinkles	Covered treatinoin topicals at T1 for generics and T2 & 3 for brands; covered for <26; PA for ≥26	Exclude, code 13.

2. Specialty Drugs

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Panhematin	hemin 350mg vial	$8,677.86/vial	Porphyria		NA Medical; exclude code 12
Nerlynx	Neratinib 40mg tablet	$70/tab	Breast cancer	Covered oncology agents at T4PA	Exclude, code 1 & 8, Relook 10/2018
Benlysta	belimumab 200mg/mL syringe & auto-injector	$1,059/syringe	Systemic lupus erythematosus (SLE)		Exclude, code 1

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Idhifa	enasidenib 50mg, 100mg tablets	$994.88/tablet	Acute myeloid luekemia (AML)	Covered oncology agents at T4PA	Exclude, code 2
Totect	dexrazoxane 500mg vial	$573.75/vial	Prevention of doxorubicin cardiomyopathy; treatment of anthracycline extravasation		Exclude from pharmacy, medical drug, code 12
Besponsa	inotuzumab ozogamicin 0.9mg vial	$22,440/vial	Acute lymphoblastic leukemia (ALL)	Covered oncology agents at T4PA	Exclude code 8, 13
Lynparza	olaparib 100mg, 150mg tablets	$134.82/tablet	Ovarian cancer	Covered oncology agents at T4PA	Exclude, code 1, revisit
Triptodur	triptorelin pamoate 22.5mg vial	$19,200/vial	Multiple indications		Exclude code 13
Jetrea	ocriplasmin/PF 0.125-0.1	$16,900/vial	Vitreomacular adhesion		Exclude, code 9
Aliqopa	copanlisib 60mg vial	$5,040/vial	Follicular lymphoma	Covered oncology agents at T4PA	Exclude code 1, 2, Relook in DCWG Oct 2018
Verzenio	abemaciclib 50mg, 100mg, 150mg, 200mg tablets	$234.60/tablet	Breast cancer, advanced or metastatic	Covered oncology agents at Tier 4, PA	Exclude, code 1, 12
Calquence	acalabrutinib 100mg capsules	$281.28/capsule	Mantle cell lymphoma	Covered oncology agents at Tier 4, PA	Exclude, code 1. ORR data only.

Fasenra	benralizumab 30mg/mL syringe	$5,702.53/syringe	asthma	Xolair, Nucala covered T4PA	Exclude, code 13
Durolane	hyaluronate, stabilized 60mg/3mL syringe			Hyaluronate products excluded due to lack of evidence	Exclude, code 1
Prevymis	Letermovir 240mg tablet, 480mg tablet	$234/tablet	CMV prophylaxis		Exclude, code 13. revisit 1/2019 for comparative data to currently used antivirals.
Elitek	rasburicase 1.5mg, 7.5mg vials	$964.43-$4,822.26/vial	Hyperuricemia associated with malignancy		Exclude, code 1 from Rx and medical.
Mepsevii	vestronidase alfa-VJBK 10mg/5ml	$2,538/vial	Mucopolysaccharidosis VII		Exclude, code 1

C. Tabled from the November DUEC and Revisited at the February DUEC

BRAND NAME	GENERIC NAME	PRICING (AWP)	INDICATION	SIMILAR THERAPIES ON FORMULARY	DUEC VOTE
Haegarda	C1 esterase inhibitor 2000 unit, 3000 unit vial	$2,256 - $3,384/vial	Hereditary angioedema prophylaxis	Cinryze - T4PA	Specialty tier, w/ PA. Rebate opportunity vs Cinryze. Choose lowest net cost.
Mavyret	glecaprevir-pibrentasvir 100mg-40mg tablet	$188.57/tablet	Chronic hepatitis C	Zepatier preferred T4PA (rebated)	Specialty tier w/ PA if cover. Rebate opportunity

Tremfya	guselkumab 100mg/mL	$11,620.80/syringe	Plaque psoriasis	Several agents available T2PA, T4PA	Specialty tier w/ PA if cover. Rebate opportunity
Vosevi	sofobuvir-velpatasvir-voxilaprevir 400mg-100mg-100mg tabs	$1,068/tablet	Chronic hepatitis C	Zepatier preferred T4PA (rebated)	Specialty tier w/ PA.
Kymriah	tisagenlecleucel	$570,000.00	ALL	Covered oncology agents at T4PA	Exclude, code 1.

The committee recommended approval of the above recommendations.

V. Board Report (November 6, 2017): *by Dr. Geri Bemberg, UAMS*

Dr. Golden made a comment of the FDA approval and the lack of data, and there is a finding study coming out that looks at drug patents that were granted from 2005-2015 and found that 74% were released on existing medications. Please note that when you see exclude on several drugs, there are already drugs on the market for conditions.

W. Board Report (February 5, 2018): *by Chris Howlett, EBD, Dr. Scott Pace, Chairman, Dr. Dwight Davis, UAMS*

Dr. Davis introduced Dr. Micah Bard who will be assuming the role as EBRx' onsite pharmacist at EBD. Dr. Bard will be replacing Dr. Geri Bemberg who recently accepted a job outside of UAMS. Drs. Pace and Davis expressed appreciation for Dr. Bemberg's excellent past service to EBD and UAMS. Mr. Howlett mentioned EBD's new Board members who had recently undergone Board orientation.

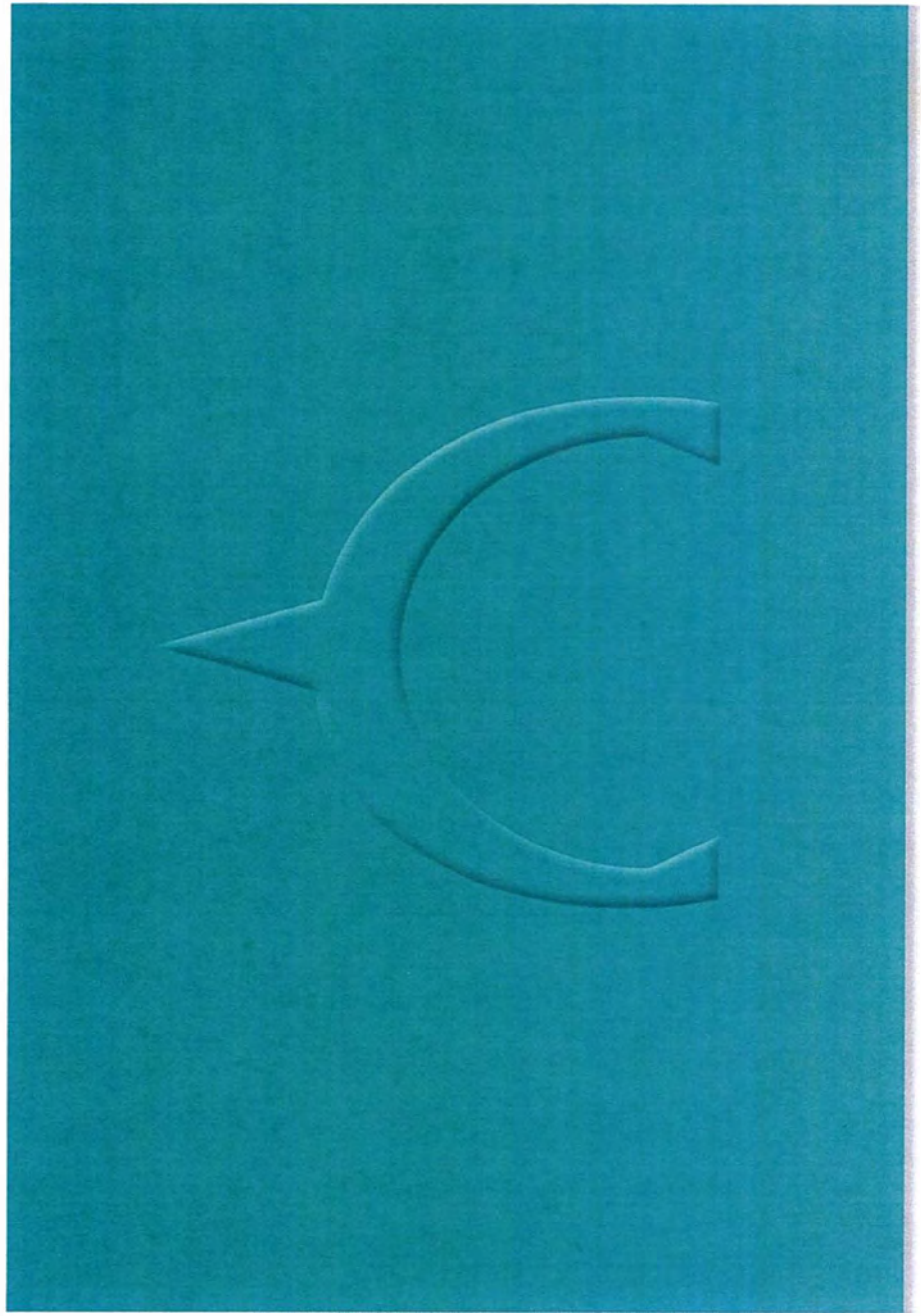
Meeting Adjourned.

Respectfully submitted,

Dr. Scott Pace
Chair, DUEC

***New Drug Code Key:**

1	Lacks meaningful clinical endpoint data; has shown efficacy for surrogate endpoints only.
2	Drug's best support is from single arm trial data
3	No information in recognized information sources (PubMed or Drug Facts & Comparisons or Lexicomp)
4	**Convenience Kit Policy** - As new drugs are released to the market through Medispan, those drugs described as "kits will not be considered for inclusion in the plan and will therefore be excluded products unless the product is available solely as a kit. Kits typically contain, in addition to a pre-packaged quantity of the featured drug(s), items that may be associated with the administration of the drug (rubber gloves, sponges, etc.) and/or additional convenience items (lotion, skin cleanser, etc.). In most cases, the cost of the "kit" is greater than the individual items purchased separately.
5	**Medical Food Policy** - Medical foods will be excluded from the plan unless two sources of peer-reviewed, published medical literature supports the use in reducing a medically necessary clinical endpoint. A medical food is defined below: A medical food, as defined in section 5(b)(3) of the Orphan Drug Act (21 U.S.C. 360ee(b)(3)), is "a food which is formulated to be consumed or administered eternally under the supervision of a physician and which is intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation." FDA considers the statutory definition of medical foods to narrowly constrain the types of products that fit within this category of food. Medical foods are distinguished from the broader category of foods for special dietary use and from foods that make health claims by the requirement that medical foods be intended to meet distinctive nutritional requirements of a disease or condition, used under medical supervision, and intended for the specific dietary management of a disease or condition. Medical foods are not those simply recommended by a physician as part of an overall diet to manage the symptoms or reduce the risk of a disease or condition, and all foods fed to sick patients are not medical foods. Instead, medical foods are foods that are specially formulated and processed (as opposed to a naturally occurring foodstuff used in a natural state) for a patient who is seriously ill or who requires use of the product as a major component of a disease or condition's specific dietary management.
6	**Cough & Cold Policy** - As new cough and cold products enter the market, they are often simply re-formulations or new combinations of existing products already in the marketplace. Many of these existing products are available in generic form and are relatively inexpensive. The new cough and cold products are branded products and are generally considerably more expensive than existing products. The policy of the ASE/PSE prescription drug program will be to default all new cough and cold products to "excluded" unless the DUEC determines the product offers a distinct advantage over existing products. If so determined, the product will be reviewed at the next regularly scheduled DUEC meeting.
7	**Multivitamin Policy** - As new vitamin products enter the market, they are often simply re-formulations or new combinations of vitamins/multivitamins in similar amounts already in the marketplace. Many of these existing products are available in generic form and are relatively inexpensive. The new vitamins are branded products and are generally considerably more expensive than existing products. The policy of the ASE/PSE prescription drug program will be to default all new vitamin/multivitamin products to "excluded" unless the DUEC determines the product offers a distinct advantage over existing products. If so determined, the product will be reviewed at the next regularly scheduled DUEC meeting.
8	Drug has limited medical benefit &/or lack of overall survival data or has overall survival data showing minimal benefit
9	Not medically necessary
10	Peer -reviewed, published cost effectiveness studies support the drug lacks value to the plan.
11	**Oral Contraceptives Policy** - OCs which are new to the market may be covered by the plan with a zero dollar, tier 1, 2, or 3 copay, or may be excluded. If a new-to-market OC provides an alternative product not similarly achieved by other OCs currently covered by the plan, the DUEC will consider it as a new drug. IF the drug does not offer a novel alternative or offers only the advantage of convenience, it may not be considered for inclusion in the plan.
12	Other
13	Insufficient clinical benefit OR alternative agent(s) available



CHEIRON

Classic Values, Innovative Advice

Arkansas State Employees (ASE)

Monitoring Report
Through December 31, 2017

Presented on
February 20, 2018

John L. Colberg, FSA, MAAA
Gaelle Gravot, FSA, MAA

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Comments

- Assets increased in 2017 primarily due to better claims experience than expected.
- Other income was higher than expected and increased compared to 2015 and 2016; it is the main cause for higher than expected income.
- Active enrollment in 2017 declined slightly, mainly due to drop of dependents that is partially offset by an increase in single coverage. The non-Medicare Retiree population remained stable while the Medicare Retiree population increased slightly about as projected.
- The favorable experience and additional assets will likely significantly offset any increases needed for the 2019 and 2020 plan years.

Please see Appendix F which describes the methods and assumptions used to develop these conclusions and includes information on the scope, limitations, and certification of this report.

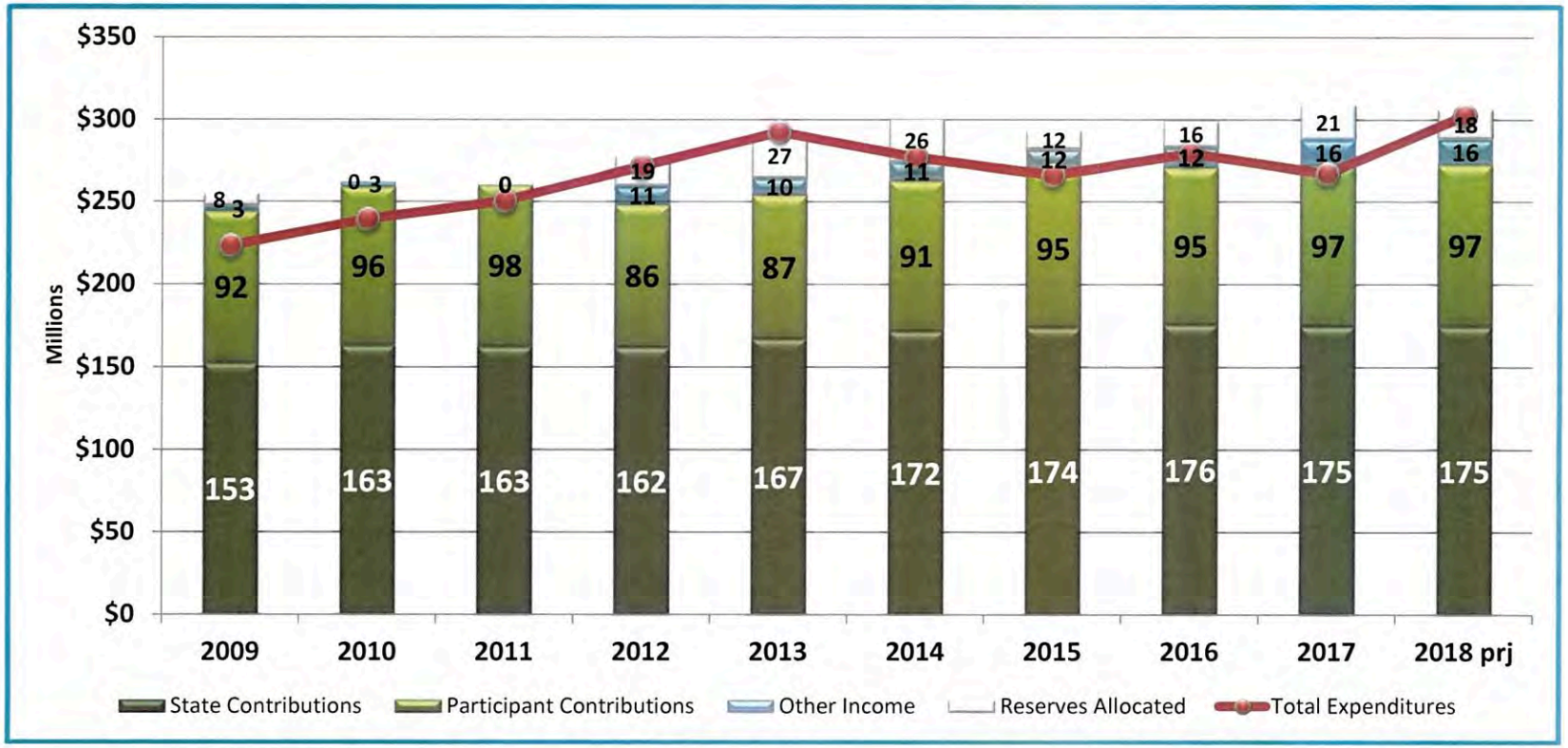
Total Plan Experience

ACCOUNTING BASIS	Calendar Year 2016 Actual	Calendar Year 2017 - 1/1/2017 - 12/31/2017 - Projection performed in Jul-16	Jun-17	Actual	Calendar Year 2018 - 1/1/2018 - 12/31/2018 - Projection performed in Jun-17	Feb-18
Employer Contributions	$ 176.0	$ 173.9	$ 175.6	$ 175.2	$ 175.4	$ 175.2
Participant Contributions	95.0	97.6	97.1	97.0	98.6	97.5
Other Income	12.2	10.8	12.2	15.6	12.2	15.6
Reserves Allocated	16.2	21.3	21.3	21.3	18.0	18.0
TOTAL INCOME	**$ 299.4**	**$ 303.6**	**$ 306.2**	**$ 309.1**	**$ 304.2**	$ 306.3
Medical Claims Paid + IBNR Change [1]	(180.1)	(195.7)	(169.8)	(169.0)	(189.4)	(188.9)
Pharmacy Claims Paid + IBNR Change [1]	(76.2)	(82.5)	(79.7)	(76.6)	(88.8)	(87.8)
Expenses / Other	(22.9)	(25.4)	(22.8)	(21.4)	(26.0)	(25.9)
TOTAL EXPENDITURES	**$ (279.2)**	**$ (303.6)**	**$ (272.3)**	**$ (267.0)**	**$ (304.2)**	$ (302.6)
NET PLAN GAIN / (LOSS)	**$ 20.2**	**$ -**	**$ 33.9**	**$ 42.1**	**$ -**	$ 3.7
PLAN ASSETS AT YEAR END						
Net Assets (Prior to IBNR)	$ 101.0	$ 64.6	$ 111.6	$ 119.9	$ 93.6	$ 105.6
IBNR Reserve	(29.7)	(29.7)	(27.7)	(27.7)	(27.7)	(27.7)
Catastrophic Reserve	(10.7)	(10.7)	(20.6)	(30.6)	(20.6)	(30.6)
Reserve for Current and Future Premiums	(40.1)	(18.8)	(28.2)	(28.2)	(10.2)	(10.2)
NET ASSETS AVAILABLE	**$ 20.5**	**$ 5.4**	**$ 35.1**	**$ 33.4**	**$ 35.1**	$ 37.1
ENROLLMENT						
Active Employees (includes COBRA)	26,181	25,941	25,917	26,150	26,033	26,037
Retirees	11,674	12,124	12,146	12,064	12,722	12,698
Total Enrolled	**37,855**	**38,065**	**38,063**	**38,214**	**38,755**	38,734
TOTAL INCOME PEPM	**$ 659**	**$ 665**	**$ 670**	**$ 674**	**$ 654**	$ 659
TOTAL EXPENDITURES PEPM	**$ (615)**	**$ (665)**	**$ (596)**	**$ (582)**	**$ (654)**	$ (651)
Dates for Medical Experience	Until 12/16	4/15-3/16	4/16-3/17	Until 12/17	4/16-3/17	4/16-3/17
paid through	Dec-17	May-16	May-17	Dec-17	May-17	May-17
Dates for Pharmacy Experience	Until 12/16	6/15-5/16	6/16-5/17	Until 12/17	6/16-5/17	6/16-5/17
Census Data through	Dec-16	May-16	May-17	Dec-17	May-17	Dec-17
Financial Statement Data through	Dec-16	May-16	May-17	Dec-17	May-17	Dec-17

[1] The IBNR Change reflects only the June 30 modification shown on the financial statements.

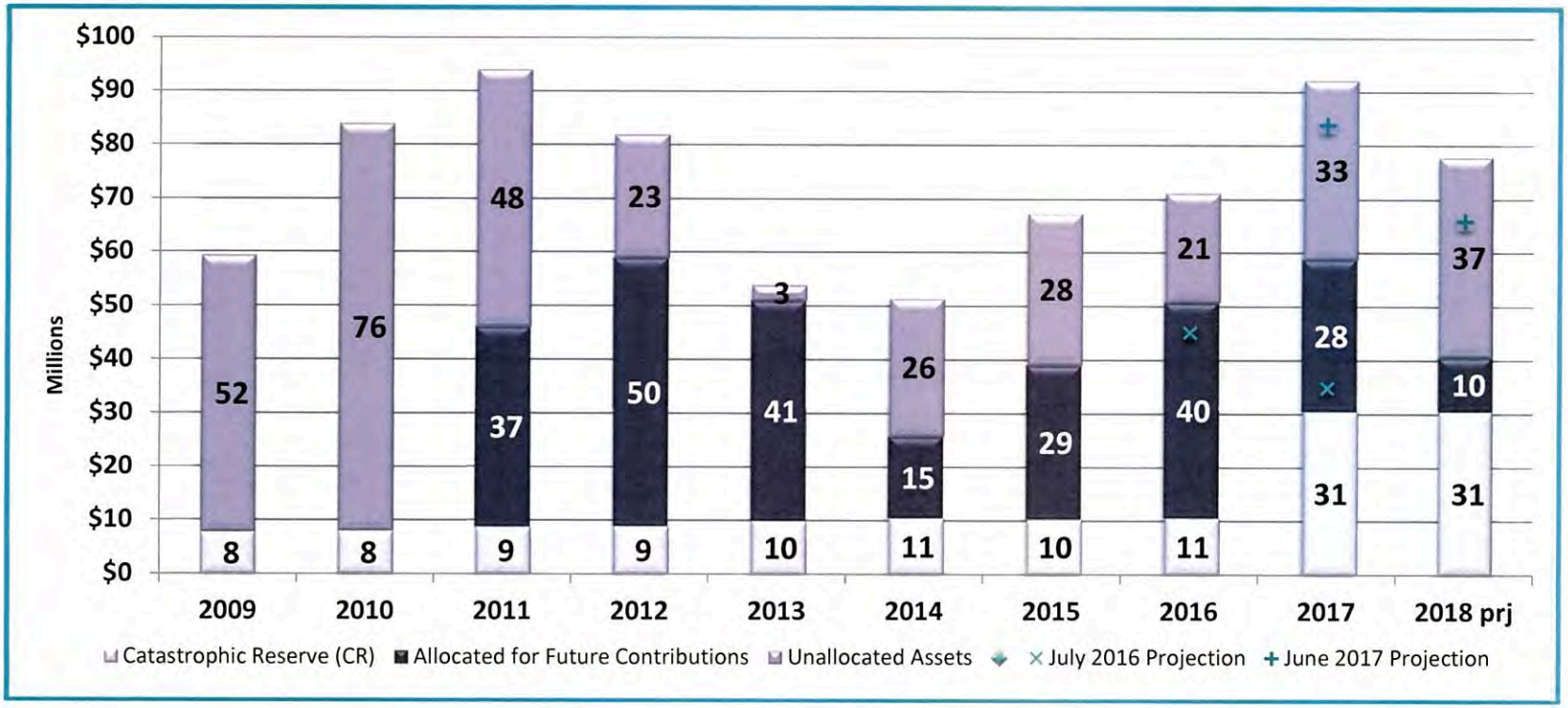
Income vs. Expenditures

The chart below displays the total income and expenditures by calendar year as reported in the financial statements. The total expenditures, shown by the red line, include paid claims, IBNR change, and expenses. The income includes State contributions, participant contributions and other income. 2018 figures are based on the updated projections.

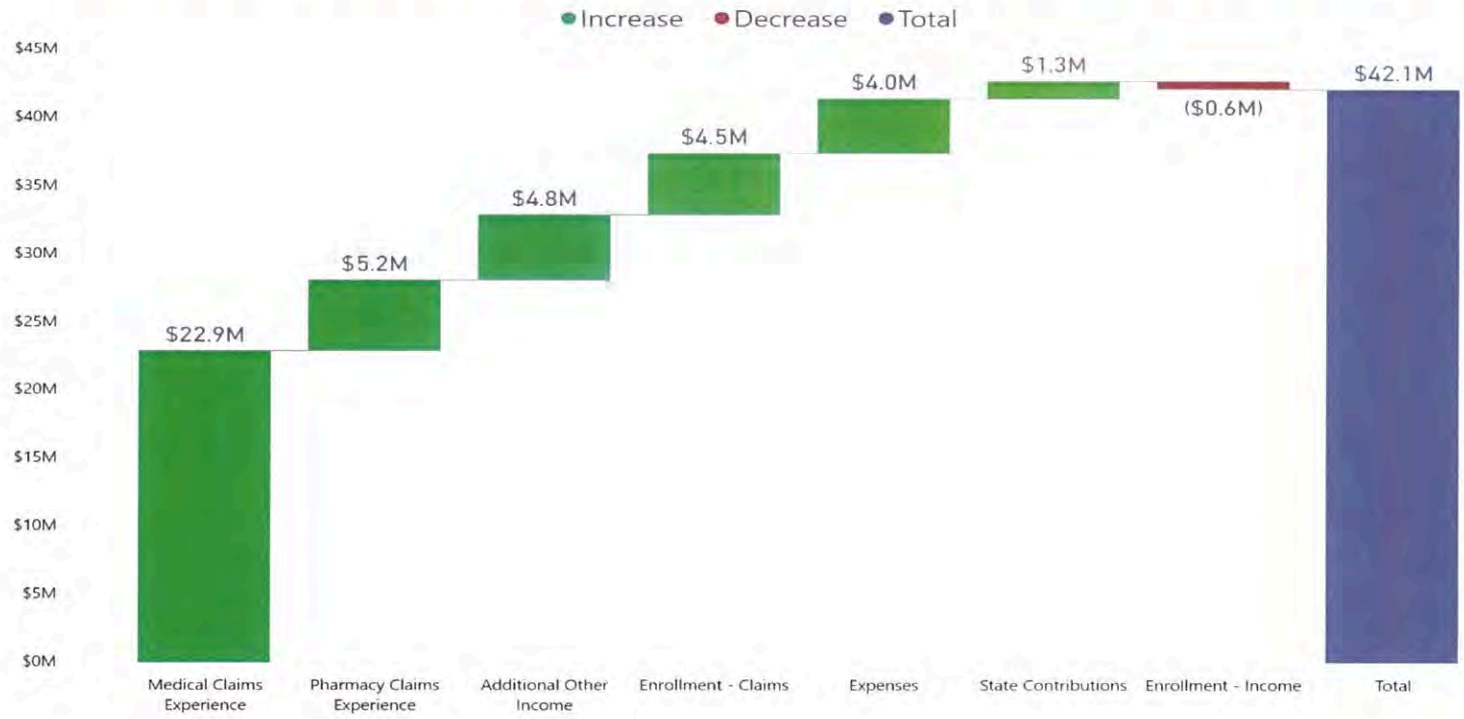


End of Year Assets Available

The chart below displays the total EOY assets available to offset for future contributions. The darker shade shows assets that have been already allocated by the Board. The unallocated assets represent any additional assets available. The lighter shade shows the allocated castastrophic reserve. The 2018 figures are based on the updated projection developed for this report.

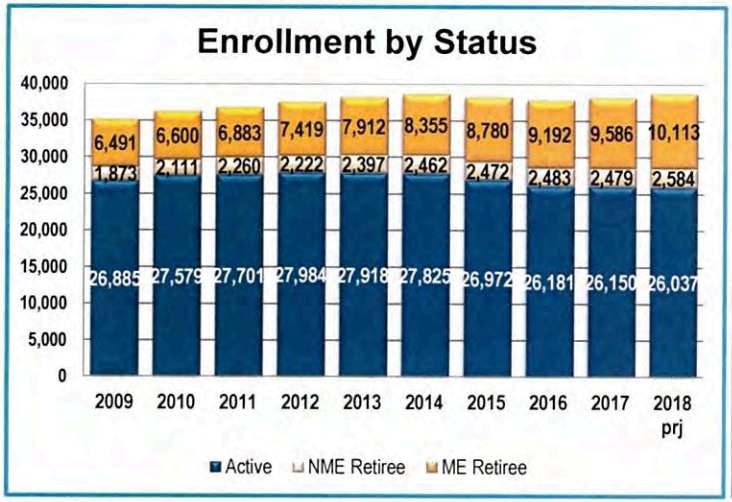


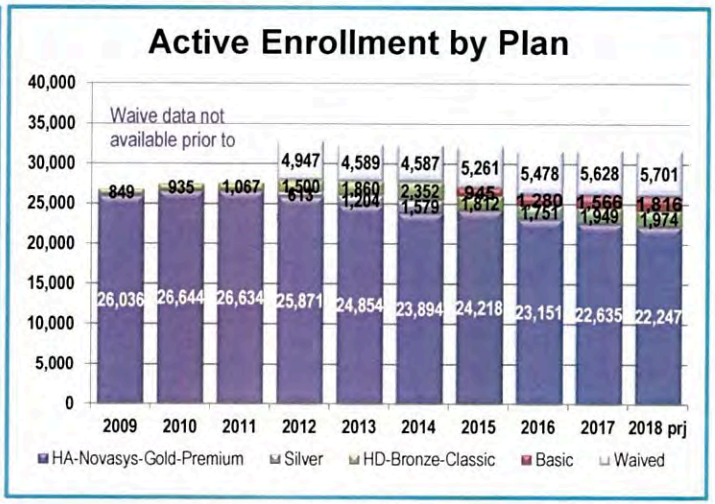
Sources of Gain / (Loss) for Calendar Year 2017



Medical Claims Experience	Medical claims experience was better than what was projected when setting the rates.
Pharmacy Claims Experience	Pharmacy claims experience was also better than what was projected when setting the rates.
Additional Other Income	Differences in investment income and other unanticipated income, such as pharmacy rebates.
Enrollment - Claims	The impact on medical and pharmacy claims due to changes in enrollment from what was projected. Because fewer employees enrolled, the claims experience was lower.
Expenses	Plan expenses were lower than assumed when setting the rates for 2017.
State Contributions	Actual State contributions received were slightly higher than assumed when setting the 2017 rates.
Enrollment - Income	The impact on income due to changes in enrollment from what was projected. This was due to fewer employees covered than projected.

Enrollment

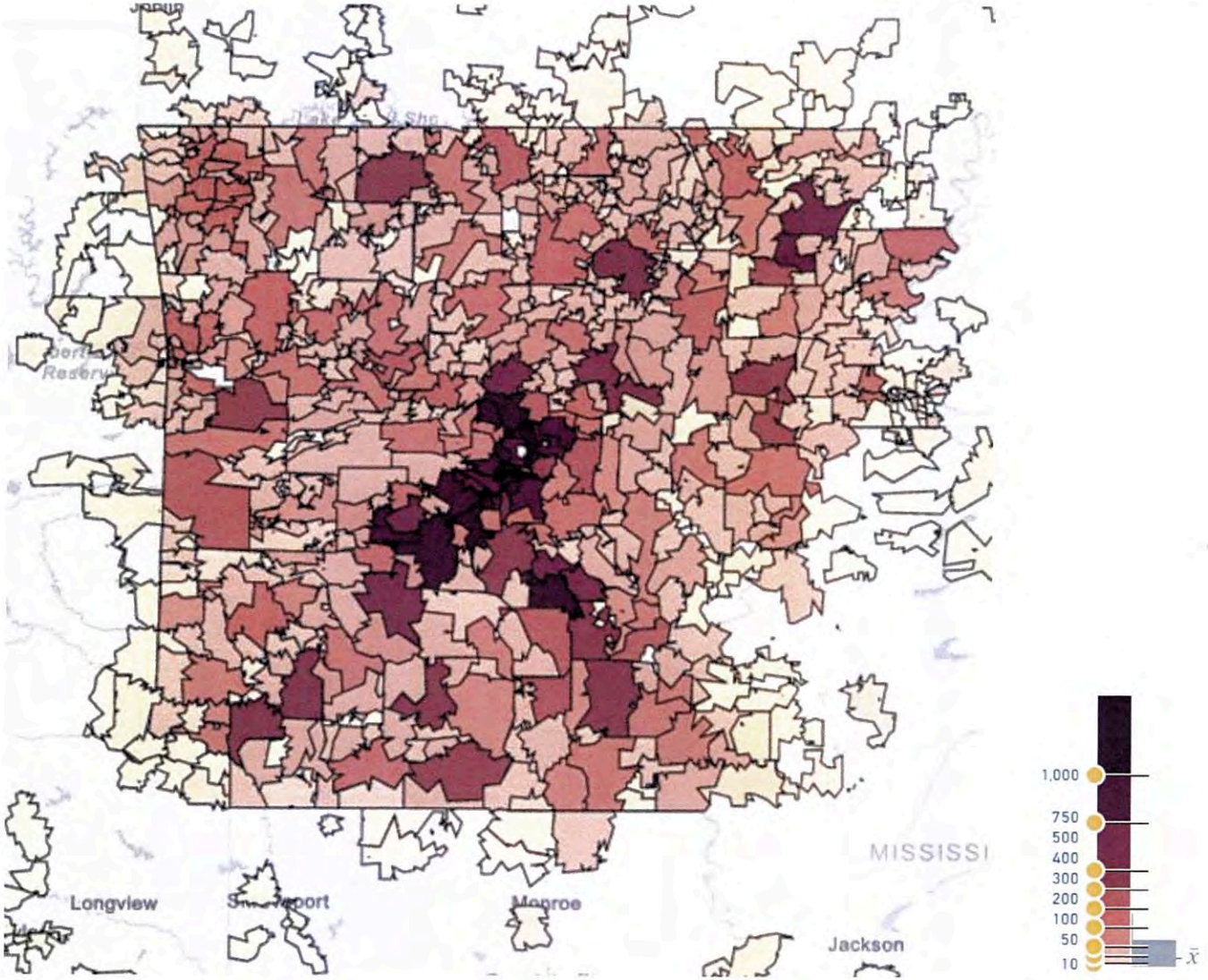




Average for Calendar Year Projection performed in (if applicable)		2016 Actual	2017 Jul-16	2017 Jun-17	2017 Actual	2018 Jun-17	2018 Feb-18
Actives by Plan **(includes COBRA contracts)**	Premium	23,151	22,463	22,505	22,635	22,243	22,247
	Classic	1,751	1,662	1,888	1,949	1,973	1,974
	Basic	1,280	1,816	1,524	1,566	1,816	1,816
	Total	**26,181**	**25,941**	**25,917**	**26,150**	**26,033**	**26,037**
	Waive	**5,478**	**n/a**	**n/a**	**5,628**	**n/a**	**5,701**
Actives by Family Status **(includes COBRA contracts)**	Single	15,676	15,528	15,818	15,986	15,897	15,900
	Ee&Spouse	2,489	2,480	2,400	2,400	2,402	2,401
	Ee&Ch(n)	5,677	5,620	5,478	5,512	5,503	5,506
	Family	2,339	2,312	2,221	2,251	2,230	2,229
	Total	**26,181**	**25,941**	**25,917**	**26,150**	**26,033**	**26,037**
	Members	**45,507**	**45,089**	**44,470**	**44,836**	**44,658**	**44,662**
Non-Medicare Retirees	Premium	2,383	2,408	2,393	2,363	2,473	2,473
	Classic	66	70	72	72	71	71
	Basic	34	40	41	43	40	40
Medicare Retirees	Premium	9,192	9,606	9,639	9,586	10,138	10,113
(includes Surviving Spouses)	**Total**	**11,674**	**12,124**	**12,146**	**12,064**	**12,722**	**12,698**
	Members	**15,416**	**15,681**	**15,956**	**15,830**	**16,391**	**16,350**
Total Employees & Retirees		**37,855**	**38,065**	**38,063**	**38,214**	**38,755**	**38,734**
Total Members		**60,923**	**60,770**	**60,426**	**60,666**	**61,049**	**61,012**

Enrollment Heat Map

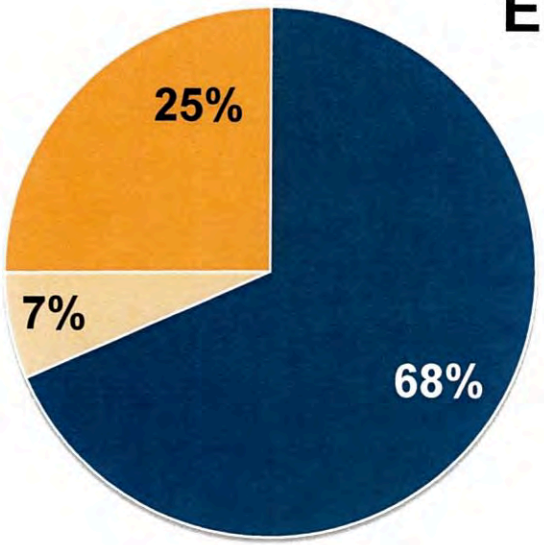
The map below shows the distribution of participants by zip code. Darker areas indicate a higher number of participants enrolled in that zip code.



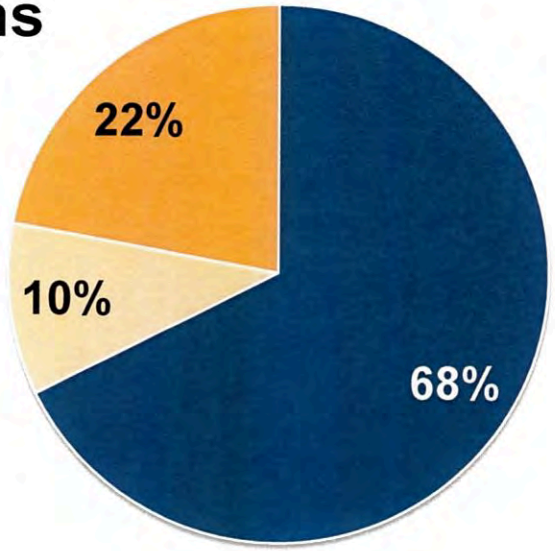
Distribution of Claims and Enrollment by Status

'The pie charts below display the distribution of Enrollment, Participation Contributions, Total Premiums and Claims by Actives, Non-Medicare Eligibles (NME) and Medicare Eligible (ME) Retirees for calendar year 2017 for all plans.

Enrollment

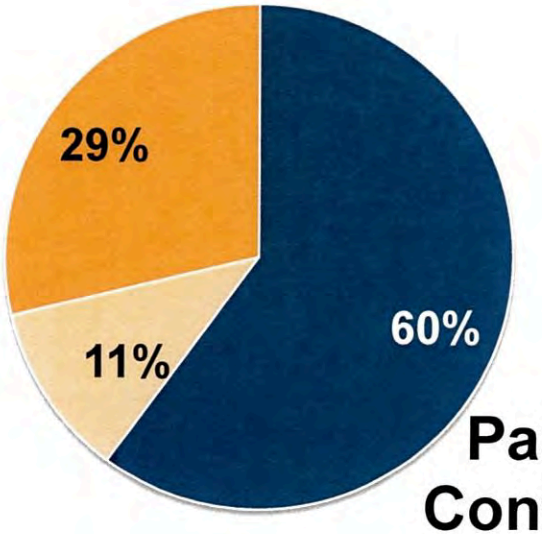


Claims

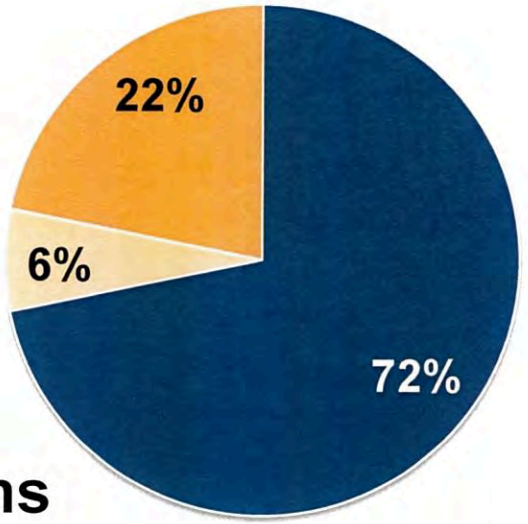


- Actives
- NME Retirees
- ME Retirees

Participant Contributions

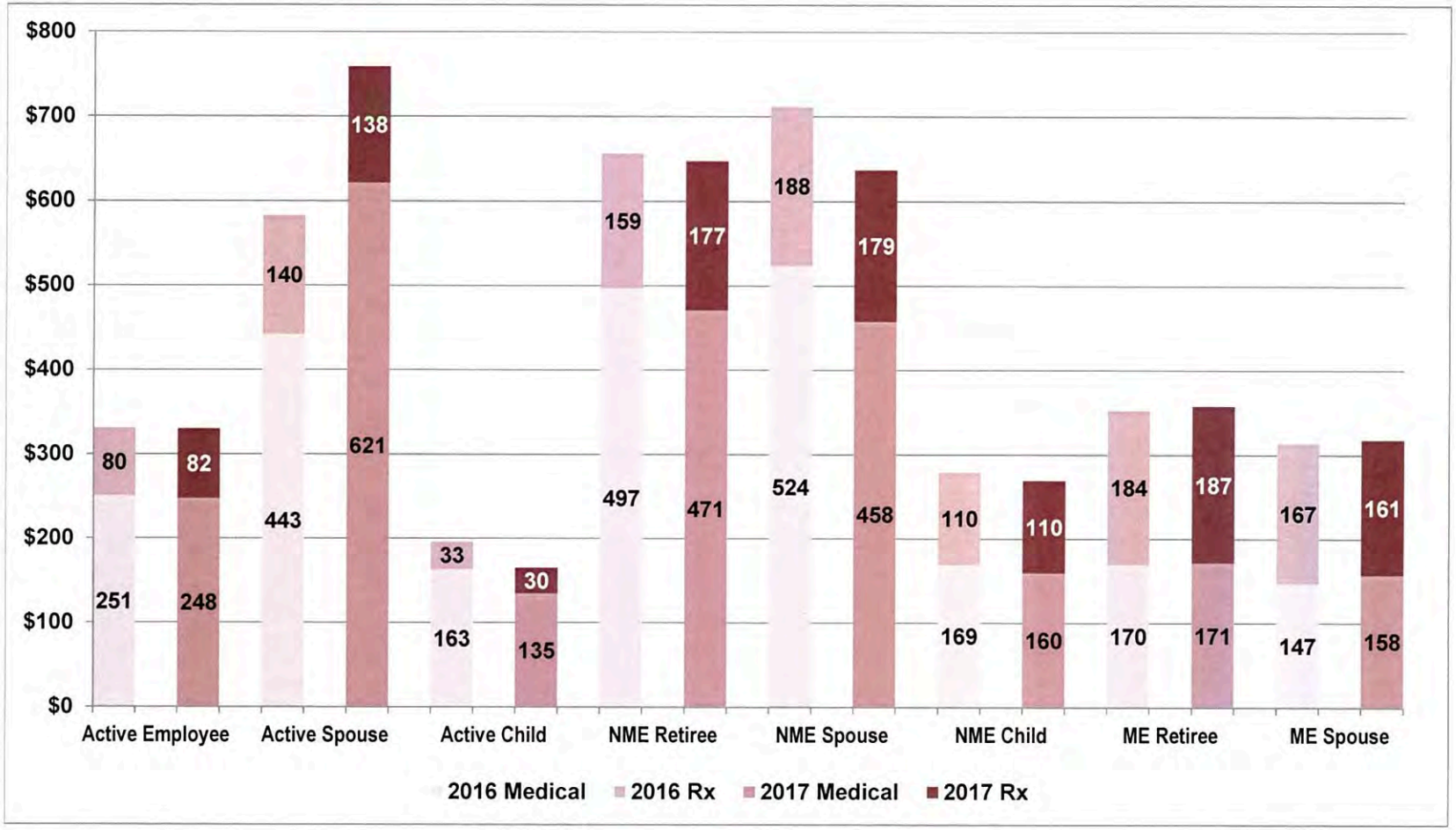


Total Premiums



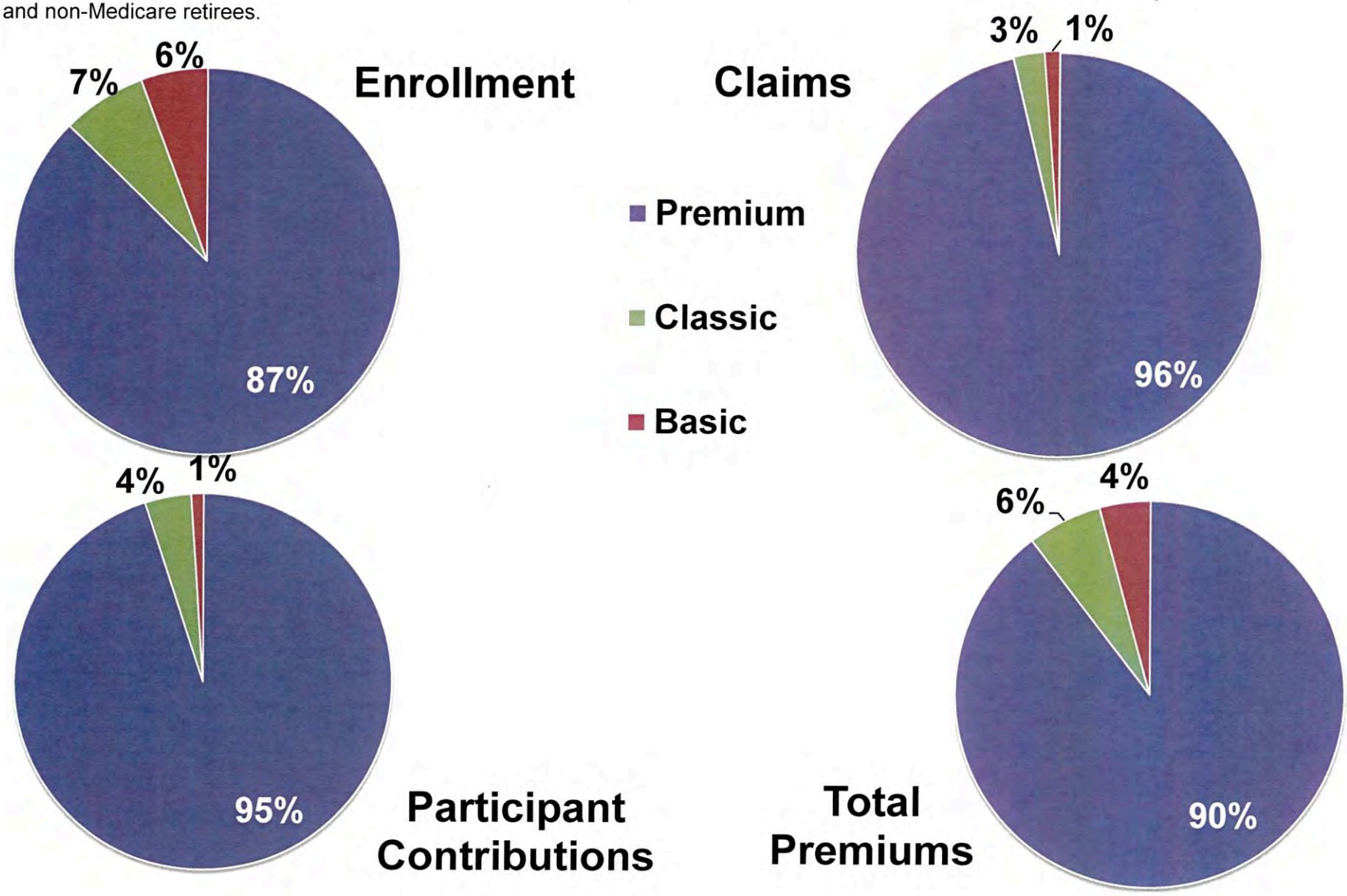
Incurred Claims PMPM by Status

The chart below shows the actual per member per month (PMPM) medical and pharmacy incurred claims by active/retiree status and by dependent status. The 2016 calendar year claims are paid through January 31, 2017. The 2017 claims completed are based on claims incurred in calendar year 2017 and paid through January 31, 2018.



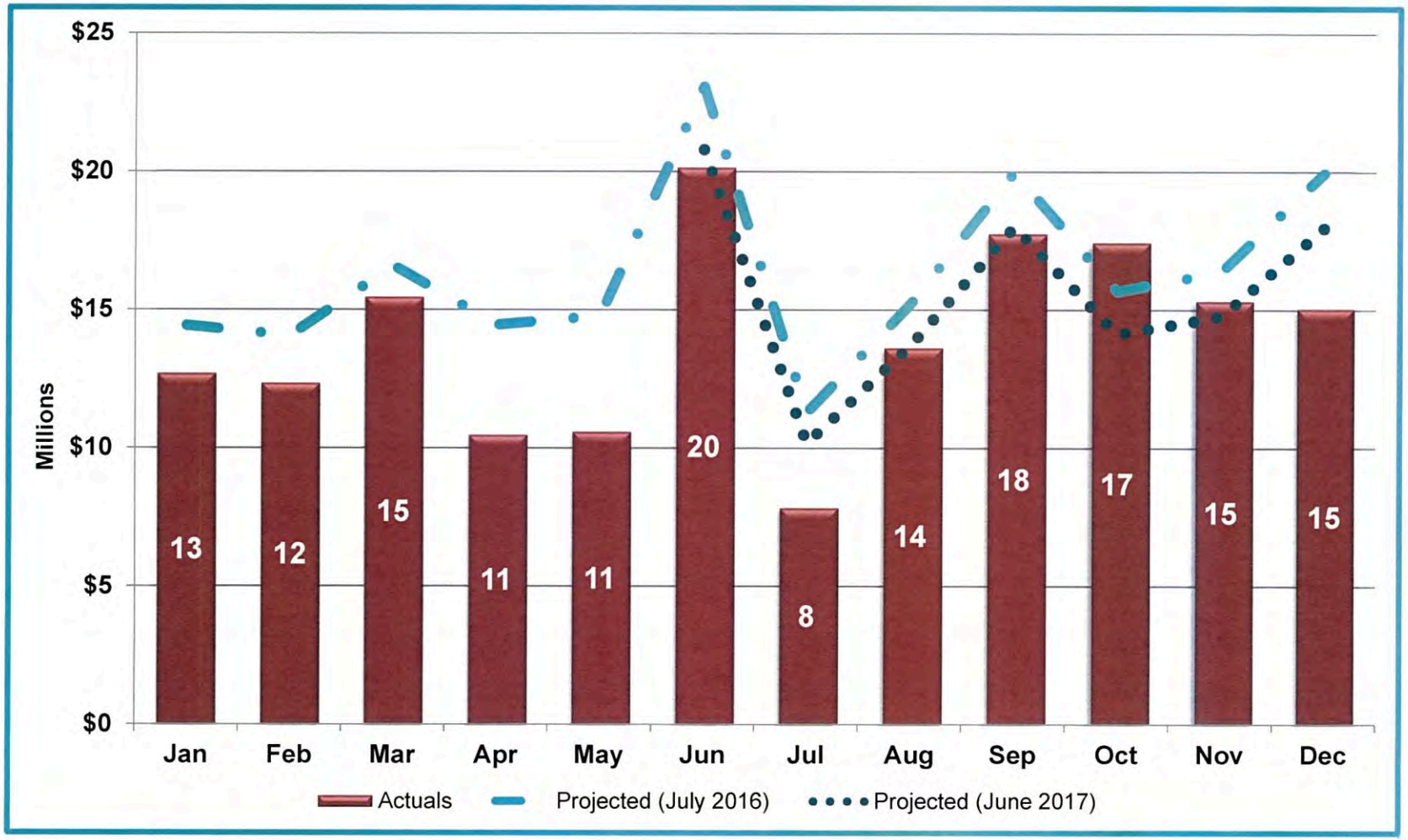
Distribution of Claims and Enrollment by Plan

The pie charts below display the distribution of Enrollment, Participation, Contributions, and Claims by Plan for calendar year 2016 for all actives and non-Medicare retirees.



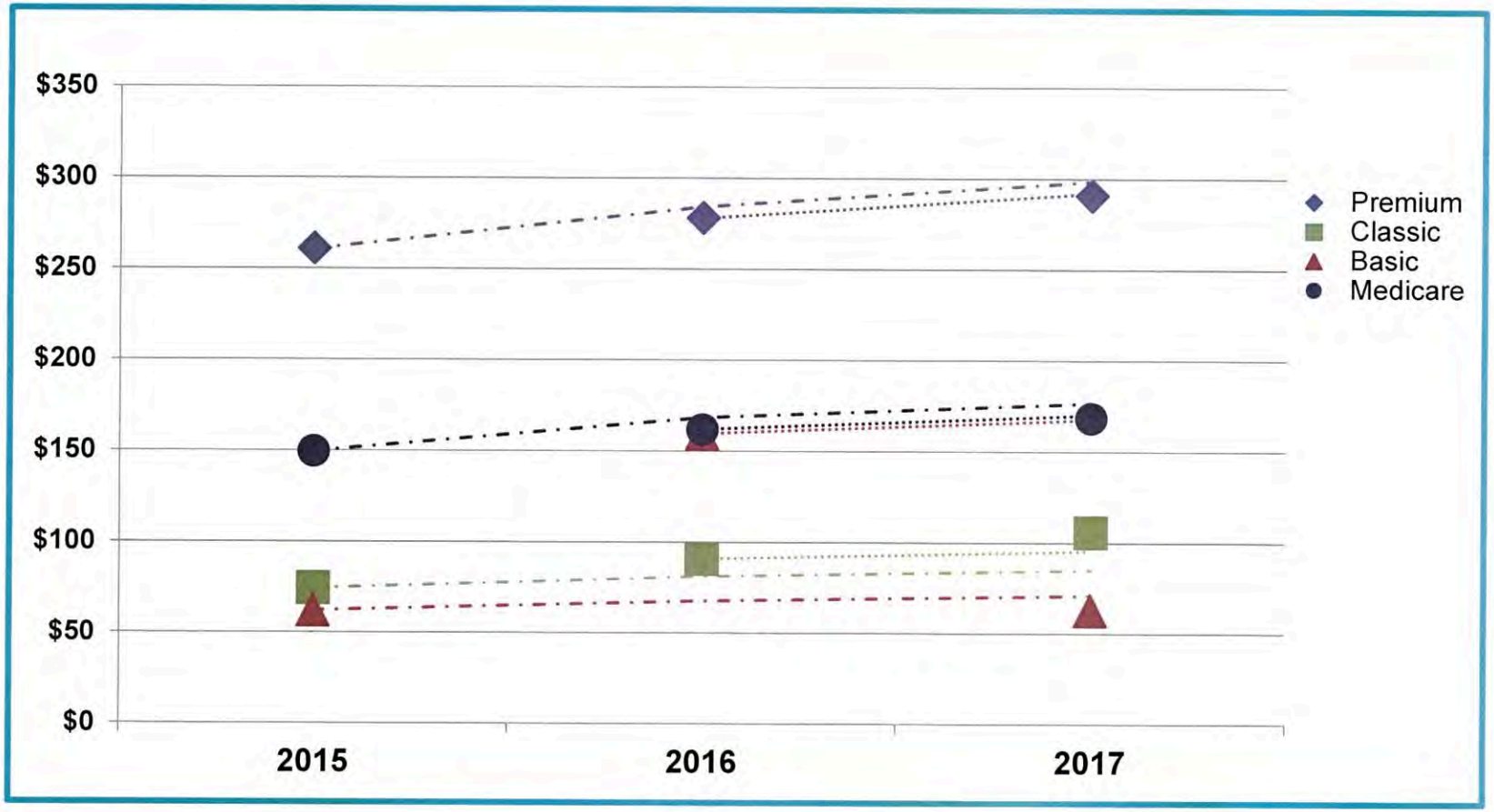
Medical Claims vs. Projections

The chart below shows the medical claims for calendar year 2017 (shown by the red bars) compared to the various medical claims projections.



Medical Claims PMPM by Plan Vs Trend

The chart below shows the actual per member per month (PMPM) medical claims compared to the PMPM for prior years trended. For 2016, a 9% annual trend is applied to all non-Medicare 2016 PMPMs (Premium, Classic, and Basic) and 12.5% for Medicare. For the 2017 PMPMs, a 5% trend was applied to non-Medicare and Medicare. PMPMs for Premium have been close to the prior year's trended amounts. PMPM's for Medicare have been below the trend. PMPMs for Classic have been above trend; however, the population is relatively small. A large claimant led to the spike in 2016 Basic costs.

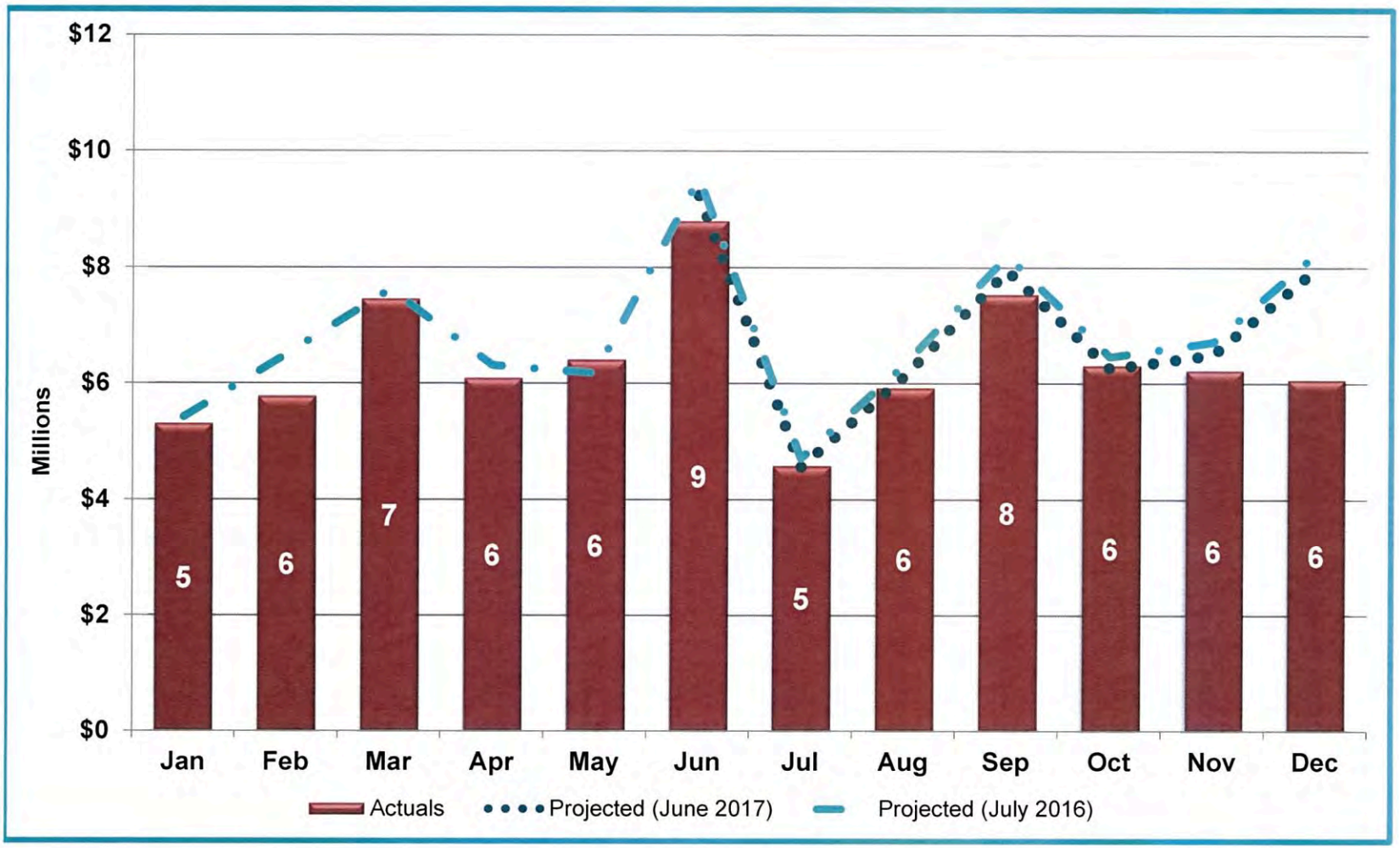


Medical Large Claims

		$100,000 - $249,999	$250,000 - $999,999	$1,000,000+	Total	Change from Prior Year
1/1/2017-12/31/2017						
Total All Plans	Number of Claimants	99	15	4	118	(30)
	Claim Amount	$ 14,063,249	$ 4,955,101	$ 11,804,805	$ 30,823,155	$ (354,019)
	Average Claim	$ 142,053	$ 330,340	$ 2,951,201	$ 261,213	$ 50,557
Premium	Number of Claimants	94	15	4	113	(28)
	Claim Amount	$ 13,404,893	$ 4,955,101	$ 11,804,805	$ 30,164,799	$ 2,557,912
	Average Claim	$ 142,605	$ 330,340	$ 2,951,201	$ 266,945	$ 71,152
Classic	Number of Claimants	4	-	-	4	(1)
	Claim Amount	$ 481,239	$ -	$ -	$ 481,239	$ (294,992)
	Average Claim	$ 120,310	$ -	$ -	$ 120,310	$ (34,937)
Basic	Number of Claimants	1	-	-	1	(1)
	Claim Amount	$ 177,117	$ -	$ -	$ 177,117	$ (2,616,938)
	Average Claim	$ 177,117	$ -	$ -	$ 177,117	$ (1,219,911)
1/1/2016-12/31/2016						
Total All Plans	Number of Claimants	123	23	2	148	2
	Claim Amount	$ 17,810,273	$ 9,581,450	$ 3,785,450	$ 31,177,173	$ 5,245,605
	Average Claim	$ 144,799	$ 416,585	$ 1,892,725	$ 210,657	$ 33,043
Premium	Number of Claimants	117	23	1	141	(1)
	Claim Amount	$ 16,845,104	$ 9,581,450	$ 1,180,334	$ 27,606,887	$ 2,493,999
	Average Claim	$ 143,975	$ 416,585	$ 1,180,334	$ 195,794	$ 18,942
Classic	Number of Claimants	5	-	-	5	2
	Claim Amount	$ 776,231	$ -	$ -	$ 776,231	$ 171,253
	Average Claim	$ 155,246	$ -	$ -	$ 155,246	$ (46,413)
Basic	Number of Claimants	1	-	1	2	1
	Claim Amount	$ 188,938	$ -	$ 2,605,117	$ 2,794,055	$ 2,580,353
	Average Claim	$ 188,938	$ -	$ 2,605,117	$ 1,397,027	$ 1,183,325

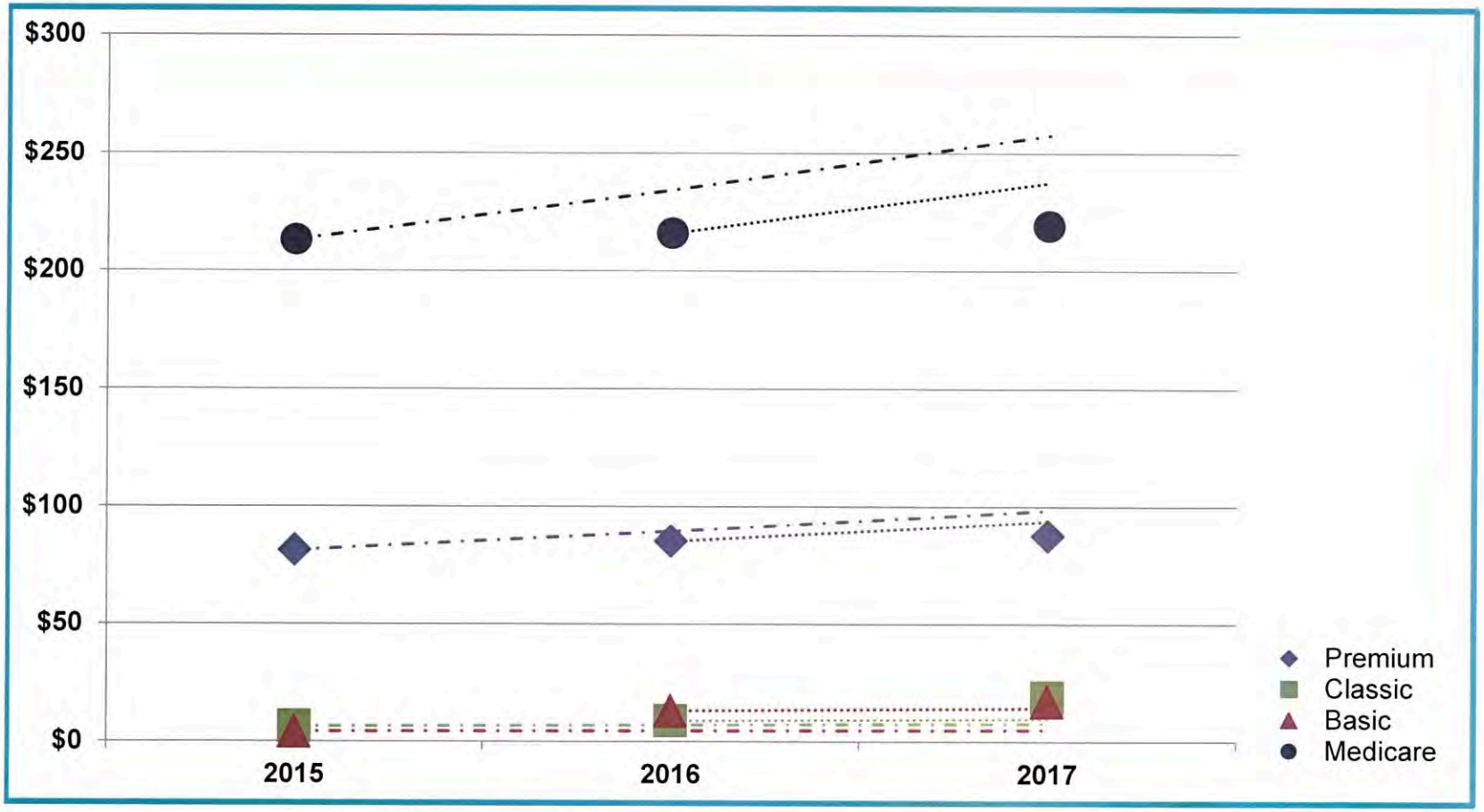
Pharmacy Claims vs. Projections

The chart below shows the medical claims for calendar year 2017 (shown by the red bars) compared to the various pharmacy claims projections.



Pharmacy Claims PMPM by Plan vs. Trend

The chart below shows the actual per member per month (PMPM) pharmacy claims compared to the PMPM for prior years trended. A 10% annual trend is applied to 2016 and 2017 respectively to all PMPMs. PMPMs for Premium and Medicare have been below prior years' trended amounts. PMPMs for Classic and Basic have been above trend; however, the population in those plans is relatively small.



Pharmacy Large Claims

		$25,000 - $49,999	$50,000 - $99,999	$100,000+	Total	Change from Prior Year
1/1/2017-12/31/2017						
Total All Plans	Number of Claimants	227	190	51	468	6
	Claim Amount	$ 8,345,048	$ 12,793,327	$ 7,863,158	$ 29,001,533	$ 1,648,613
	Average Claim	$ 36,762	$ 67,333	$ 154,180	$ 61,969	$ 2,764
Premium	Number of Claimants	221	188	49	458	4
	Claim Amount	$ 8,108,708	$ 12,661,277	$ 7,580,605	$ 28,350,590	$ 1,339,063
	Average Claim	$ 36,691	$ 67,347	$ 154,706	$ 61,901	$ 2,404
Classic	Number of Claimants	2	2	1	5	1
	Claim Amount	$ 73,842	$ 132,050	$ 142,314	$ 348,207	$ 199,280
	Average Claim	$ 36,921	$ 66,025	$ 142,314	$ 69,641	$ 32,410
Basic	Number of Claimants	4	-	1	5	1
	Claim Amount	$ 162,498	$ -	$ 140,239	$ 302,736	$ 110,270
	Average Claim	$ 40,624	$ -	$ 140,239	$ 60,547	$ 12,431
1/1/2016-12/31/2016						
Total All Plans	Number of Claimants	248	172	42	462	38
	Claim Amount	$ 9,000,899	$ 11,835,681	$ 6,516,341	$ 27,352,921	$ 4,688,059
	Average Claim	$ 36,294	$ 68,812	$ 155,151	$ 59,205	$ 5,751
Premium	Number of Claimants	241	171	42	454	32
	Claim Amount	$ 8,725,523	$ 11,769,663	$ 6,516,341	$ 27,011,527	$ 4,406,184
	Average Claim	$ 36,205	$ 68,828	$ 155,151	$ 59,497	$ 5,930
Classic	Number of Claimants	4	-	-	4	2
	Claim Amount	$ 148,926	$ -	$ -	$ 148,926	$ 89,408
	Average Claim	$ 37,232	$ -	$ -	$ 37,232	$ 7,472
Basic	Number of Claimants	3	1	-	4	4
	Claim Amount	$ 126,449	$ 66,018	$ -	$ 192,467	$ 192,467
	Average Claim	$ 42,150	$ 66,018	$ -	$ 48,117	$ 48,117

Appendix A. - Contribution Rates: Actives
Calendar Year 2018

Actives	Total Monthly Premium	State Contributions	Reserve Allocation	2018 EE Total Cost*	2017 EE Total Cost*	Change in Premiums ($ / %)		Assumed Enrollment
Premium								
Employee Only	$ 488.72	$ 346.20	$34.60	$ 107.92	$107.92	$0.00	0%	13,365
Employee & Spouse	1,097.30	642.61	64.23	390.46	390.46	0.00	0%	2,095
Employee & Child(ren)	819.46	548.31	54.81	216.34	216.34	0.00	0%	4,907
Family	1,428.04	844.73	84.43	498.88	498.88	0.00	0%	1,876
Est. Monthly Total ($mil)	$ 15.5	$ 10.2	$ 1.0	$ 4.3	$ 4.3	$ -		22,243
Classic								
Employee Only	$ 425.50	$ 343.31	$34.31	$ 47.88	$ 47.88	$0.00	0%	1,293
Employee & Spouse	950.36	636.43	63.61	250.32	250.32	0.00	0%	154
Employee & Child(ren)	710.76	543.68	54.34	112.74	112.74	0.00	0%	340
Family	1,235.62	836.80	83.64	315.18	315.18	0.00	0%	187
Est. Monthly Total ($mil)	$ 1.2	$ 0.9	$ 0.1	$ 0.2	$ 0.2	$ -		1,973
Basic								
Employee Only	$ 375.36	$ 341.25	$34.11	$ -	$ -	$0.00	n/a	1,239
Employee & Spouse	831.10	631.52	63.12	136.46	136.46	0.00	0%	153
Employee & Child(ren)	623.04	540.06	53.98	29.00	29.00	0.00	0%	256
Family	1,078.80	830.34	83.00	165.46	165.46	0.00	0%	168
Est. Monthly Total ($mil)	$ 0.9	$ 0.8	$ 0.1	$ 0.1	$ 0.1	$ -		1,816
Total (Monthly) ($ mil)	$ 17.6	$ 11.9	$ 1.2	$ 4.5	$ 4.5	$ -		26,033
Est Annual Total ($ mil)	$ 211.6	$ 143.1	$ 14.3	$ 54.1	$ 54.1	$ -		

* Monthly Total EE Cost is $75 higher if no wellness credit

Appendix A. - Contribution Rates: Retirees
Calendar Year 2018

Non Medicare Eligible Retirees	Total Monthly Premium	State Contributions	Reserve Allocation	2018 Ret. Total Cost	2017 Ret. Total Cost	Change in Premiums ($ / %)		Assumed Enrollment
Premium								
Retiree Only	$488.72	$ 202.12	$20.20	$ 266.40	$ 266.40	$0.00	0%	1,749
Retiree & NME SP	1,097.30	377.67	37.75	681.88	681.88	0.00	0%	386
Retiree & Child(ren)	819.46	297.45	29.73	492.28	492.28	0.00	0%	96
Retiree & NME SP&CH	1,428.04	473.00	47.28	907.76	907.76	0.00	0%	43
Retiree & ME SP	881.20	333.12	33.30	514.78	514.78	0.00	0%	190
Retiree & ME SP & CH	1,211.94	428.45	42.83	740.66	740.66	0.00	0%	9
Est. Monthly Total ($mil)	$ 1.6	$ 0.6	$ 0.1	$ 0.9	$ 0.9	$ -		2,473
Classic								
Employee Only	$ 425.50	$ 199.23	$19.91	$ 206.36	$ 206.36	$0.00	0%	49
Employee & Spouse	950.36	371.49	37.13	541.74	541.74	0.00	0%	17
Employee & Child(ren)	710.76	292.81	29.27	388.68	388.68	0.00	0%	3
Family	1,235.62	465.07	46.49	724.06	724.06	0.00	0%	2
Est. Monthly Total ($mil)	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ -		71
Basic								
Employee Only	$ 375.36	$ 197.17	$19.71	$ 158.48	$ 158.48	$0.00	0%	30
Employee & Spouse	831.10	366.58	36.64	427.88	427.88	0.00	0%	7
Employee & Child(ren)	623.04	289.19	28.91	304.94	304.94	0.00	0%	2
Family	1,078.80	458.62	45.84	574.34	574.34	0.00	0%	2
Est. Monthly Total ($mil)	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ -		40
Total (Monthly) ($ mil)	$ 1.7	$ 0.6	$ 0.1	$ 1.0	$ 1.0	$ -		2,584
Est Annual Total ($ mil)	$ 19.9	$ 7.7	$ 0.8	$ 11.4	$ 11.4	$ -		

ME Retirees	Total Monthly Premium	State Contributions	Reserve Allocation	2018 Ret. Total Cost	2017 Ret. Total Cost	Change in Premiums ($ / %)		Assumed Enrollment
Medicare Eligible								
Retiree Only	$392.48	$205.15	$20.51	$166.82	$166.82	$0.00	0%	7,104
Retiree & NME SP	881.20	271.74	27.16	582.30	582.30	0.00	0%	344
Retiree & Child(ren)	770.38	343.36	34.32	392.70	392.70	0.00	0%	78
Retiree & NME SP&CH	1,331.82	476.06	47.58	808.18	808.18	0.00	0%	24
Retiree & ME SP	761.08	328.58	32.84	399.66	399.66	0.00	0%	2,551
Retiree & ME SP & CH	1,138.98	466.78	46.66	625.54	625.54	0.00	0%	37
Est. Monthly Total ($ mil)	$ 5.2	$ 2.4	$ 0.2	$ 2.5	$ 2.5	$ -		10,138
Total (Est. Annual)	$ 62.0	$ 29.3	$ 2.9	$ 29.7	$ 29.7	$ -		

Appendix A. - Contribution Rates: Actives

Calendar Year 2017

Actives	Total Monthly Premium	State Contributions	Reserve Allocation	2017 EE Total Cost	2016 EE Total Cost	Change in Premiums ($ / %)		Assumed Enrollment
Premium								
Employee Only	$ 478.84	$ 331.10	$ 39.82	$ 107.92	$ 104.78	$3.14	3%	13,301
Employee & Spouse	1,083.42	618.57	74.39	390.46	379.08	11.38	3%	2,171
Employee & Child(ren)	807.42	527.63	63.45	216.34	210.04	6.30	3%	5,021
Family	1,412.00	815.10	98.02	498.88	484.34	14.54	3%	1,970
Est. Monthly Total ($mil)	$ 15.6	$ 10.0	$ 1.2	$ 4.4	$ 4.2	$ 0.1		22,463
Classic								
Employee Only	$ 415.98	$ 328.59	$39.51	$ 47.88	$ 46.48	$1.40	3%	1,068
Employee & Spouse	937.40	613.32	73.76	250.32	243.02	7.30	3%	139
Employee & Child(ren)	699.36	523.65	62.97	112.74	109.46	3.28	3%	298
Family	1,220.78	808.39	97.21	315.18	306.00	9.18	3%	157
Est. Monthly Total ($mil)	$ 1.0	$ 0.7	$ 0.1	$ 0.2	$ 0.2	$ 0.0		1,662
Basic								
Employee Only	$ 366.10	$ 326.80	$39.30	$ -	$0.00	$0.00	n/a	1,159
Employee & Spouse	818.86	609.15	73.25	136.46	132.48	3.98	3%	170
Employee & Child(ren)	612.18	520.58	62.60	29.00	28.16	0.84	3%	301
Family	1,064.94	802.92	96.56	165.46	160.64	4.82	3%	185
Est. Monthly Total ($mil)	$ 0.9	$ 0.8	$ 0.1	$ 0.1	$ 0.1	$ 0.0		1,816
Total (Monthly) ($ mil)	$ 17.5	$ 11.5	$ 1.4	$ 4.6	$ 4.5	$ 0.1		25,941
Est. Annual Total ($ mil)	$ 209.7	$ 138.1	$ 16.6	$ 55.0	$ 53.4	$ 1.6		

* Monthly Total EE Cost is $75 higher if no wellness credit

Appendix A. - Contribution Rates: Retirees
Calendar Year 2017

Non-Medicare Eligible Retirees	Total Monthly Premium	State Contributions	Reserve Allocation	2017 EE Total Cost	2016 EE Total Cost	Change in Premiums ($ / %)		Assumed Enrollment
Premium								
Retiree Only	$ 478.84	$ 189.63	$22.81	$ 266.40	$ 258.64	$7.76	3%	1,684
Retiree & NME SP	1,083.42	358.44	43.10	681.88	662.02	19.86	3%	378
Retiree & Child(ren)	807.42	281.31	33.83	492.28	477.94	14.34	3%	101
Retiree & NME SP&CH	1,412.00	450.11	54.13	907.76	881.32	26.44	3%	45
Retiree & ME SP	908.00	351.01	42.21	514.78	499.78	15.00	3%	192
Retiree & ME SP & CH	1,236.58	442.68	53.24	740.66	719.08	21.58	3%	7
Est. Monthly Total ($mil)	$ 1.5	$ 0.6	$ 0.1	$ 0.9	$ 0.9	$ 0.0		2,408
Classic								
Employee Only	$ 415.98	$ 187.12	$22.50	$ 206.36	$ 200.34	$6.02	3%	50
Employee & Spouse	937.40	353.19	42.47	541.74	525.96	15.78	3%	14
Employee & Child(ren)	699.36	277.33	33.35	388.68	377.36	11.32	3%	2
Family	1,220.78	443.40	53.32	724.06	702.98	21.08	3%	4
Est. Monthly Total ($mil)	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0		70
Basic								
Employee Only	$ 366.10	$ 185.33	$22.29	$ 158.48	$ 153.86	$4.62	3%	27
Employee & Spouse	818.86	349.01	41.97	427.88	415.42	12.46	3%	6
Employee & Child(ren)	612.18	274.26	32.98	304.94	296.06	8.88	3%	3
Family	1,064.94	437.93	52.67	574.34	557.62	16.72	3%	4
Est. Monthly Total ($mil)	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0		40
Total (Monthly) ($ mil)	$ 1.6	$ 0.6	$ 0.1	$ 0.9	$ 0.9	$ 0.0		2,518
Est Annual Total ($ mil)	$ 19.3	$ 7.2	$ 0.9	$ 11.2	$ 10.9	$ 0.3		

ME Retirees	Total Monthly Premium	State Contributions	Reserve Allocation	2017 EE Total Cost	2016 EE Total Cost	Change in Premiums ($ / %)		Assumed Enrollment
Medicare Eligible								
Retiree Only	$ 429.16	$ 234.17	$ 28.17	$ 166.82	$ 161.96	$4.86	3%	6,643
Retiree & NME SP	907.99	290.73	34.96	582.30	565.34	16.96	3%	393
Retiree & Child(ren)	798.20	361.97	43.53	392.70	381.26	11.44	3%	77
Retiree & NME SP&CH	1,362.33	494.66	59.49	808.18	784.64	23.54	3%	27
Retiree & ME SP	834.42	388.09	46.67	399.66	388.02	11.64	3%	2,435
Retiree & ME SP & CH	1,203.47	515.89	62.04	625.54	607.32	18.22	3%	31
Est. Monthly Total ($ mil)	$5.4	$2.7	$0.3	$2.4	$2.3	$0.1		9,606
Total (Est. Annual)	$64.5	$32.1	$3.9	$28.6	$27.7	$0.8		

Appendix B. - Summary of Plan or Policy Changes

Date	Major Change
For 2018 Plan Year	No changes.
For 2017 Plan Year	$75 wellness credit extended to spouses of active employees. Participants must have had wellness exam and taken a health assessment in the previous year.
For 2016 Plan Year	Embedded Individual Medical OOP Max is applied for Classic and Basic within the family OOP Max. The individual and family OOP max amounts remain the same as in 2015. Effective 7/1/2016 Change to MedImpact Healthcare Systems Inc. as the pharmacy benefits manager.
For 2015 Plan Year	Plans were renamed Premium, Classic, and Basic to avoid confusion with metallic plans from Exchange. Premium is former Gold with $500/$1,000 deductible for individual/family, Office Visit copays at $25/$50 for Primary Care Physician (PCP)/Specialists, no copay on hospitalization, $3,600/$7,200 individual/family Out-of-Pocket (OOP) max for Rx, $1000/$2000 deductible for Out-of-Network (OON) benefits, and no OOP max for OON benefits Classic is former Bronze with a $25/$50 for individual/family monthly HSA contribution, a $2,500/$5,000 deductible for individual/family, a $3,950/$7,900 coinsurance OOP max for individual/family, and a true OOP max (including deductible, coinsurance, copays) of $6,450/$12,900 for individual/family. Classic provides no coverage for non-preferred brand drugs, has a $4,000/$8,000 deductible for individual/family and no OOP max for OON benefits. Basic is another HSA qualified plan with $25/$50 individual/family monthly HSA contributions, a $6,450/$12,900 individual/family In-Network deductible,100% coverage thereafter. Basic provides no coverage for non-preferred brand drugs, and no OON coverage. Wellness credit: Active employee contributions are reduced by $75/month if the employee had a physical exam in the past year (new hires get the credit automatically).
For 2014 Plan Year	Increase Gold Plan In-network maximum out-of-pocket (MOOP) to $2,500 for individual, $5,000 for family Increase Gold and Silver Plans' Office Visit copays to $35/$70 for Primary Care Physician (PCP)/Specialists Increase Gold and Silver Plans' Pharmacy copays to $15/$40/$80/$100 for Generic/Preferred Brand/non-Preferred Brand/Specialty drugs Increase Gold Plan ER copay to $250, Silver Plan ER copay to $300, Gold and Silver Plans' Ambulance copay to $50 Change Gold and Silver Plans' rehab cost share to $35 copay Increase Silver Plan In-Network deductible to $1,000 for individual, $2,000 for family, MOOP to $3,000 for individual, $6,000 for family Increase Silver Plan Out-of-Network deductible to $2,000 for individual, $4,000 for family, MOOP to $8,000 for individual, $16,000 for family Increase Bronze Plan In-Network deductible to $2,000 for individual, $3,000 for family, MOOP to $6,350 for individual, $9,525 for family Increase Bronze Plan Out-of-Network deductible to $4,000 for individual, $8,000 for family, MOOP to $12,700 for individual, $19,000 for family
For 2013 Plan Year	Women's preventive care covered at 100%
For 2012 Plan Year	ARHealth plan became Gold Plan; network is only Health Advantage (NovaSys no longer an option) HD PPO became Bronze Plan; network changed from NovaSys to Health Advantage Silver Plan with $25 PCP copay and $750 deductible offered through QualChoice NME Retirees eligible to elect Gold, Silver, or Bronze (ME Retirees are Gold only) Bariatric surgery covered through pilot program Coverage for Autism added Behavioral Health changed to self-insured and integrated with Medical
For 2011 Plan Year	Lifetime Max for Out-of-Network (OON) changed to match the In-Network's (INN) Unlimited Lifetime Maximum Immunizations covered at 100% for OON coverage Some services under behavioral health now do not require pre-authorization Intensive Out-Patient Services under behavioral health now require 20% member coinsurance $10,000 Benefit Maximum Removed for Durable Medical Equipment / Enteral Feeding Hearing/Vision Screening copayment changed to $35 OON (ARHealth), and $35 INN & OON (ARHealth HD) Active and non-Medicare retiree experience was blended in determining the rates Increased credibility was given to the High Deductible Plan in determining the rates Child covered until age 26

Appendix B. - Summary of 2017 & 2018 Benefits

Benefit Option Name: Last Modified: Provider Network:	Premium 1/1/2015 Health Advantage	Classic 1/1/2016 Health Advantage	Basic 1/1/2016 Health Advantage
In-Network (INN) Benefits			
Deductible (Individual / Family)	$500 / $1000	$2500 / $5000[3]	$6450 / $12900[3]
Coinsurance	20%	20%	0%
Coinsurance limit (after Ded.) Individual/Family	$2500 / $5000	$3950 / $7900	n/a / n/a
Copays			
Office Visit - Primary Care (PCP)	$25	Ded. & Coins.	Ded. & Coins.
OV - Specialist Care Provider (SCP)	$50	Ded. & Coins.	Ded. & Coins.
Urgent Care (UC)	$100	Ded. & Coins.	Ded. & Coins.
Emergency Room (ER) Non-admitted	$250	Ded. & Coins.	Ded. & Coins.
Emergency Transportation-Ambulance	$50	Ded. & Coins.	Ded. & Coins.
Hospital Facility - Inpatient & SNF (Co-pay/Admission)[4]	$250	Ded. & Coins.	Ded. & Coins.
Hospital Facility - Outpatient - Co-Pay[4]	$100	Ded. & Coins.	Ded. & Coins.
Out-of-Pocket Max (Individual / Family)[2]	$3000 / $6000	$6450 / $12900[3]	$6450 / $12900[3]
Out-of-Network (OON) Benefits [1]			
Deductible (Individual / Family)	$2000 / $4000	$4000 / $8000[3]	Not Covered
Coinsurance	40%	40%	
Out-of-Pocket Max (Individual / Family)[2]	Unlimited / Unlimited	Unlimited / Unlimited	
Annual Maximum INN / OON	Unlimited	Unlimited	Unlimited
Prescription Drugs			
Separate Deductible then the following Copays:	None	Included with Medical	Included with Medical
Retail (31 Days) - Generic/Formulary /Non-Form./ Specialty	$15 / $40 / $80 / $100		
Mail Order (93 Days) - Generic/Form. /Non-Form./Specialty	$45 / $120/ $240/ $300		
Non-Formulary Covered	Yes		
Out-of-Pocket Max (Individual / Family)[2]	$3100 / $6200	n/a / n/a	n/a / n/a
Selected Detail Benefits			
Psychiatry	INN: $25 Copay; OON: Ded & Coins.	Ded & Coins.	Ded. & Coins.
Rehabilitation (i.e., speech, occup. physical):	INN: $25 Copay; OON: Ded. & Coins.	Ded & Coins.	Ded. & Coins.
Chiropractors	INN: $25 Copay; OON: Ded & Coins.	Ded & Coins.	Ded. & Coins.
Hearing Aids	No Copay; Limit of $1400 per ear every 3 years	Ded. & Coins.; Limit of $1400 per ear every 3 years	Ded. & Coins.; Limit of $1400 per ear every 3 years
Durable Medical Equipment (DME)	Ded. & Coins.	Ded. & Coins.	Ded. & Coins.
Monthly HSA Contributions	N/A	$25 Single/$50 Family	$25 Single/$50 Family

[1]When an in-network provider is not available within 50 miles for a hospital and 25 miles for all other providers, then in-network benefits apply.

[2]OOP Max includes the deductible.

[3]Deductible and OOP Max are embedded; meaning the individual deductible and OOP max are applied for an individual family member.

[4]Deductible and Co-Insurance also applies

Appendix C. - Provider Contract Summary

Service Providers	Cost		Effective Dates
Benefit and Claims Coordination (Actives & Retirees)			
- Premium (Health Advantage)	$26.70	Per Employee Per Month	For Calendar Years
- Classic (Health Advantage)	$24.60	Per Employee Per Month	2016 & 2017 unless noted
- Basic (Health Advantage)	$24.60	Per Employee Per Month	
- Primary (QualChoice)	$23.89	Per Employee Per Month	
Prescription Drugs Claims Administration	All Plans		
- CatamaranRx (Includes staff)	$2.75	Per Member Per Month	Ended June 30, 2016
- Retiree Drug Subsidy - RDS	$0.102	Per RDS Member Per Month	Ended June 30, 2016
- MedImpact (Does NOT include contract employees)	$1.05	Per Member Per Month	Began 7/1/2016
- MedImpact Employees	$25,598	Monthly (salary & benefits)	Began 7/1/2016
Medical Appeals - UAMS			
- Physician Appeals	$150.00	Per Physician Appeal	No payment made in 2016
Pharmacy Prior Authorization - EBRx			
- Prior Authorization & on-site pharmacist	$1.16	Per Employee Per Month	
Pharmacy Appeals			
Physician Appeals - American Health Holding Inc.	$150.00	Per Physician Appeal	Ends 2/28/17, Pd $1,160 in 2016
Physician Appeals - ActiveHealth Management, Inc.	$100.00	Per Physician Appeal	Begins 3/1/17
Medical Utilization Review - American Health Holding, Inc.	$0.97	Per Member Per Month	Ends 2/28/17
Condition Management - American Health Holding, Inc.	$3.22	Per Member Per Month	Ends 2/28/17
Case Management - American Health Holding, Inc.	$0.89	Per Member Per Month	Ends 2/28/17
Medical Utilization/Condition Mgmt/Case Management- ActiveHealth	$3.58	Per Member Per Month	Begins 3/1/17
ACHI	$0.25	Per Member Per Month	
Life Insurance - Minnesota Life	$2.50	Per Employee Per Month (actives)	
Employee Assistance Program - ComPsych	$1.73	Per Employee Per Month	
Health Savings Account (HSA) Administrator -WageWorks	$1.90	Per Enrolled Per Month	Ended 12/31/2016
Flexible Spending Account (FHSA) Administrator - WageWorks	$3.25	Per Enrolled Per Month	Ended 12/31/2016
COBRA admin fee - WageWorks	$0.20	Per Active Ee Per Month	Ended 12/31/2016
Health Savings Account (HSA) Administrator -DataPath	$2.25	Per Enrolled Per Month	Effective 1/1/2017
Flexible Spending Account (FHSA) Administrator - DataPath	$2.25	Per Enrolled Per Month	Effective 1/1/2017
COBRA admin fee - DataPath	$0.38	Per Active Ee Per Month	Effective 1/1/2017
Office of Health Information Technology (Actives and NME Retirees)	$0.20	Per Employee Per Month	

Appendix D. - Additional Incurred Claims Details

			CY 2016 (in $000s)	CY 2017 (in $000s)	PMPM 2015	PMPM 2016	% Change
TOTAL		Actual Incurred Claims	$ 270,425	$ 270,175	$ 595.31	$ 589.17	(1.0%)
		Projected	297,333	306,887	636.72	671.84	
		Actual vs. Projected	(26,908)	(36,712)	(41.41)	(82.67)	
Medical	All	Actual Incurred Claims	$ 177,062	$ 179,451	$ 242.19	$ 246.50	1.8%
		Projected	186,502	200,675	250.74	281.19	
		Actual vs. Projected	(9,440)	(21,224)	(8.55)	(34.69)	
	Premium	Actual Incurred Claims	$ 146,838	$ 148,633	$ 278.16	$ 290.94	4.6%
		Projected	156,510	164,859	282.83	323.54	
		Actual vs. Projected	(9,672)	(16,226)	(4.67)	(32.60)	
	Classic	Actual Incurred Claims	$ 3,299	$ 4,239	$ 90.73	$ 105.82	16.6%
		Projected	3,814	3,143	99.44	90.90	
		Actual vs. Projected	(515)	1,096	(8.71)	14.92	
	Basic	Actual Incurred Claims	$ 4,160	$ 1,926	$ 159.37	$ 62.84	(60.6%)
		Projected	1,248	2,978	112.77	133.66	
		Actual vs. Projected	2,912	(1,052)	46.60	(70.82)	
	ME	Actual Incurred Claims	$ 22,765	$ 24,653	$ 161.78	$ 168.39	4.1%
		Projected	24,931	29,695	176.79	201.64	
		Actual vs. Projected	(2,166)	(5,042)	(15.01)	(33.25)	
Rx	All	Actual Incurred Claims	$ 76,023	$ 78,066	$ 103.99	$ 107.23	3.1%
		Projected	84,309	82,457	118.25	120.96	
		Actual vs. Projected	(8,286)	(4,391)	(14.26)	(13.73)	
	Premium	Actual Incurred Claims	$ 44,988	$ 44,720	$ 85.22	$ 87.53	2.7%
		Projected	48,902	45,385	88.37	89.07	
		Actual vs. Projected	(3,914)	(665)	(3.15)	(1.54)	
	Classic	Actual Incurred Claims	$ 319	$ 752	$ 8.77	$ 18.77	114.0%
		Projected	394	238	10.27	6.88	
		Actual vs. Projected	(75)	514	(1.50)	11.89	
	Basic	Actual Incurred Claims	$ 336	$ 517	$ 12.87	$ 16.88	31.2%
		Projected	169	301	15.24	13.50	
		Actual vs. Projected	167	216	(2.37)	3.38	
	ME	Actual Incurred Claims	$ 30,380	$ 32,077	$ 215.89	$ 219.10	1.5%
		Projected	34,844	36,532	316.26	316.91	
		Actual vs. Projected	(4,464)	(4,455)	(100.37)	(97.81)	
Expenses & Other	All	Actual Incurred Claims	$ 17,339	$ 12,659	$ 22.56	$ 16.39	(27.3%)
		Projected	24,672	23,754	31.08	30.93	-0.5%
		Actual vs. Projected	(7,333)	(11,095)	(8.52)	(14.54)	

Incurred claims will differ slightly from financial statement claims paid plus change in IBNR.

Appendix E. - Enrollment Details: Actives

Average for Calendar Year Projection performed in (if applicable)		2016 Actual		2017 Jul-16	2017 Jun-17	2017 Actual		2018 Jun-17	2018 Feb-17
Premium	Single	**13,697**		13,301	13,528	**13,624**		13,365	13,368
	Employee/Spouse	**2,230**		2,171	2,119	**2,113**		2,095	2,094
	Employee/Child(ren)	**5,190**		5,021	4,960	**4,982**		4,907	4,910
	Family	**2,034**		1,970	1,898	**1,917**		1,876	1,875
	Total	**23,151**		22,463	22,505	**22,635**		22,243	22,247
	Member Counts	**40,441**		39,212	38,891	**39,101**		38,440	38,444
Classic	Single	**1,125**		1,068	1,232	**1,275**		1,293	1,293
	Employee/Spouse	**145**		139	152	**155**		154	154
	Employee/Child(ren)	**311**		298	327	**331**		340	340
	Family	**170**		157	178	**187**		187	187
	Total	**1,751**		1,662	1,888	**1,949**		1,973	1,974
	Member Counts	**2,940**		2,786	3,138	**3,240**		3,273	3,273
Basic	Single	**854**		1,159	1,058	**1,088**		1,239	1,239
	Employee/Spouse	**115**		170	129	**132**		153	153
	Employee/Child(ren)	**176**		301	191	**199**		256	256
	Family	**135**		185	146	**147**		168	168
	Total	**1,280**		1,816	1,524	**1,566**		1,816	1,816
	Member Counts	**2,126**		3,092	2,441	**2,495**		2,945	2,945
TOTAL	Single	**15,676**		15,528	15,818	**15,986**		15,897	15,900
	Employee/Spouse	**2,489**		2,480	2,400	**2,400**		2,402	2,401
	Employee/Child(ren)	**5,677**		5,620	5,478	**5,512**		5,503	5,506
	Family	**2,339**		2,312	2,221	**2,251**		2,230	2,229
	Total	**26,181**		25,941	25,917	**26,150**		26,033	26,037
	Member Counts	**45,507**		45,089	44,470	**44,836**		44,658	44,662

Appendix E. - Enrollment Details: Retirees

Average for Calendar Year		2016		2017				2018	
Projection performed in (if applicable)		Actual		Jun-15	Jul-16	Actual		Jul-16	Feb-17
Retirees Non-Medicare Eligible (NME) Premium	Retiree Only	1,657		1,684	1,699	1,678		1,749	1,745
	Retiree + NME Spouse	375		378	366	350		386	383
	Retiree + Child(ren)	98		101	96	95		96	96
	Retiree + NME Spouse + Child(ren)	45		45	39	39		43	43
	Retiree + ME Spouse	201		192	183	190		190	197
	Retiree + ME Spouse + Child(ren)	7		7	10	10		9	9
	Total	2,383		2,408	2,393	2,363		2,473	2,473
Classic	Retiree Only	47		50	50	51		49	49
	Retiree + NME Spouse	14		14	17	16		17	17
	Retiree + Child(ren)	2		2	3	4		3	3
	Retiree + NME Spouse + Child(ren)	3		4	1	2		2	2
	Total	66		70	72	72		71	71
Basic	Retiree Only	24		27	30	31		30	30
	Retiree + NME Spouse	5		6	7	7		7	7
	Retiree + Child(ren)	3		3	2	3		2	2
	Retiree + NME Spouse + Child(ren)	2		4	2	2		2	2
	Total	34		40	41	43		40	40
TOTAL	**NME Retirees**	2,483		2,518	2,506	2,479		2,584	2,584
	NME Member Counts	3,689		3,409	3,672	3,629		3,466	3,471

Retirees Medicare Eligible (ME)	Retiree Only	6,419		6,643	6,764	6,739		7,104	7,093
	Retiree + NME Spouse	355		393	322	328		344	358
	Retiree + Child(ren)	71		77	81	84		78	78
	Retiree + NME Spouse + Child(ren)	22		27	20	21		24	25
	Retiree + ME Spouse	2,294		2,435	2,417	2,382		2,551	2,522
	Retiree + ME Spouse + Child(ren)	32		31	35	32		37	36
	Total	9,192		9,606	9,639	9,586		10,138	10,113
	ME Member Counts	11,727		12,272	12,285	12,200		12,925	12,879

Appendix F. - Definitions & Methods

Definitions:

Actual: Results based on actual incurred claims and enrollment experience through December 2017, paid through January 2018. Actual incurred reflects an updated estimate of incurred but not recorded (IBNR) claims.

Projected: Projections produced for use in setting annual rates. Details on the assumptions & methods used for Cheiron's 2018 and 2017 projections can be found in our October 24, 2017 (for 2018) and our November 4, 2016 (for 2017) letters to the Exective Director.

Updated Projections: Projections produced in July 2017 by Cheiron, adjusted for actual asset experience through December 2017 and any enrollment changes through January 2018.

Methods:

Updated Projections: Population projections for the remainder of 2018 are based population as of January 2018 and historical monthly changes. Claims projections for 2018 use the same method as original projections but are adjusted for count changes and associated expected changes in risk characteristics for each plan in accordance with the population change. Trends rates for 2018 were applied.
Note that the updated projections presented in this report do NOT reflect updated claims experience.

Incurred Claims: Based on service dates through December 31, 2017 and process dates through January 31, 2018. Claims are before subtracting retiree drug subsidy or rebates. A blend of methods based on actuarial judgment was used to estimate the incurred claims by month.

IBNR (Incurred But Not Recorded) Claim Reserves: Actual Reserves are those certified by Cheiron and effective July 2017. Original and updated Reserve projections are based on expected changes in incurred and paid claims. ***Note that any projected IBNR Reserves presented in this report may NOT be used for financial statements.***

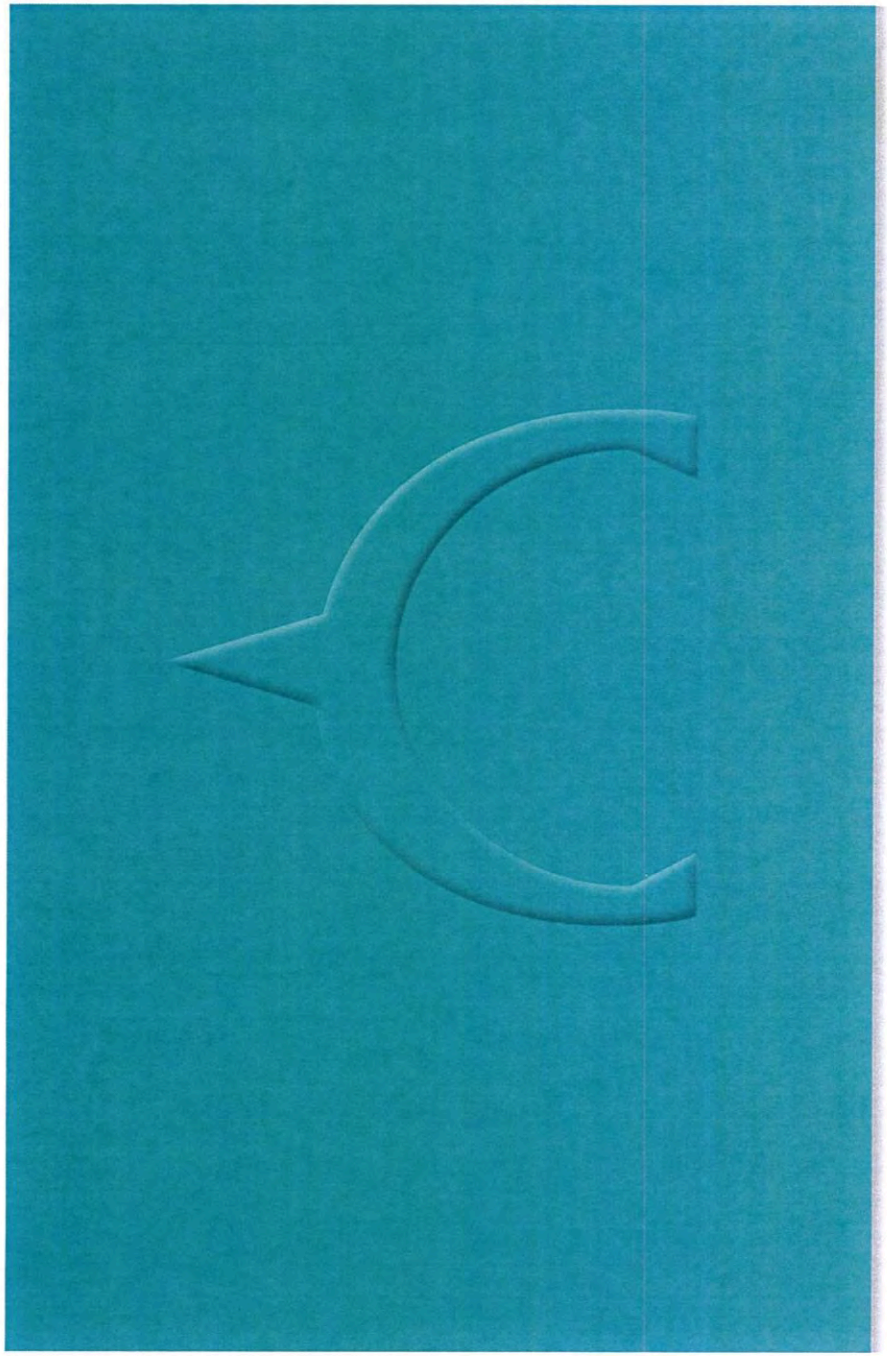
Qualification Statements:

Reliance Statement: In preparing our report, we relied without audit, on information (some oral and some written) supplied by the Employee Benefits Division and the Plan's vendors. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Scope: Actuarial computations provided in this report are for purposes of assisting the Trustees in monitoring the Plan's experience. The projections and reserve calculations reported in the enclosed exhibits have been made on a basis consistent with our understanding of the associated Actuarial Standards of Practice. Determinations for purposes other than monitoring the Plan's performance (for example: rate setting, benefit design changes or vendor evaluation) may be significantly different from the results in this report. Actual results will be different than our projections and vary to the extent that the Plan experience differs from the assumptions.

Certification: To the best of our knowledge, this report has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Actuarial Standards of Practice as promulgated by the Actuarial Standards Board. We are members of the American Academy of Actuaries, and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. This report does not address any contractual or legal issues. We are neither attorneys nor accountants, and our firm does not provide any legal or tax services or advice.

Third Party Reliance: This report was prepared for the Arkansas State Employees (ASE) and Public School Employees (PSE) Health Benefits Program Trustees for the purposes described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.



CHEIRON

Classic Values, Innovative Advice.

Arkansas Public School Employees (PSE)

Monitoring Report
Through December 31, 2017

Presented on
February 20, 2018

John L. Colberg, FSA, MAAA
Gaelle Gravot, FSA, MAAA

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Comments

- Assets increased in 2017 primarily due to favorable claims experience (both medical and pharmacy) and a change in the timing of some State contributions.

- Enrollment in 2017 was slightly higher than projected for actives. Classic has the most active and non-Medicare retirees enrolled. Fewer participants enrolled in Premium than projected. Fewer non-Medicare retirees enrolled than assumed, while the number of Medicare retirees was higher than projected.

- January 2018 enrollment shows a growth in active enrollment over 2017 with less of a shift from Premium to Basic than assumed. Fewer retirees have enrolled than projected.

- The favorable experience and additional assets will likely significantly offset any rate increases needed for the 2019 and 2020 plan years.

Please see Appendix F, which describes the methods and assumptions used to develop these conclusions and includes information on the scope, limitations, and certification of this report.

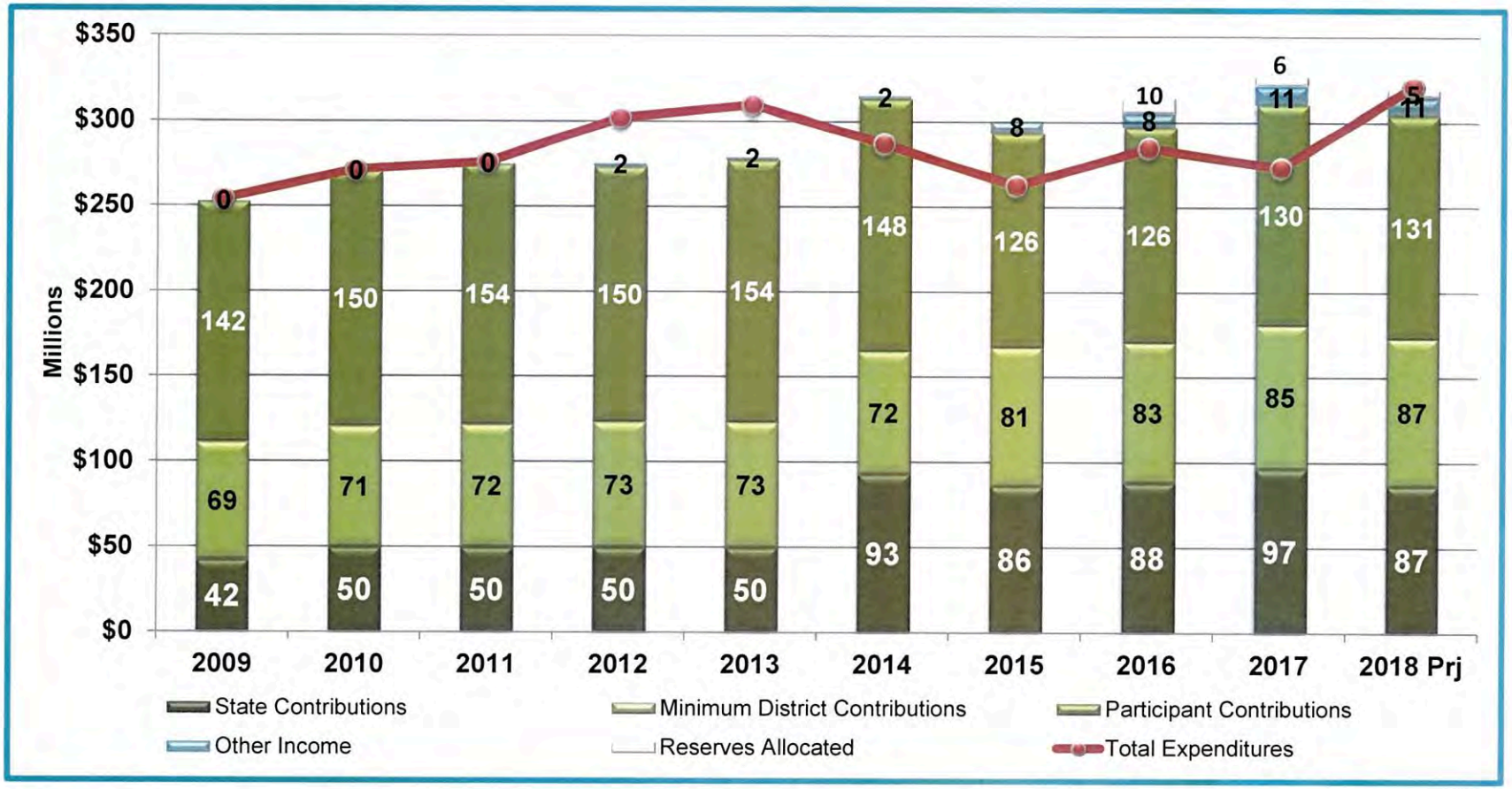
Total Plan Experience

ACCOUNTING BASIS	Calendar Year 2016 Actual	Plan Year 2017 - 1/1/2017 - 12/31/2017 - Projection performed in Jul-16	Plan Year 2017 Projection performed in Jun-17	Plan Year 2017 Actual	Plan Year 2018 - 1/1/2018 - 12/31/2018 - Projection performed in Jun-17	Plan Year 2018 Projection performed in Feb-18
State Contributions for Plan Year	$ 88.1	$ 88.1	$ 86.5	$ 96.5	$ 88.1	$ 86.5
Minimum District Contributions	82.5	82.8	83.9	84.5	85.1	86.7
Participant Contributions	126.4	129.9	130.2	129.5	129.1	130.9
Reserve Allocated	9.6	5.8	5.8	5.8	4.5	4.5
Other Income	8.0	6.6	8.5	10.7	8.4	10.7
TOTAL INCOME	**$ 314.6**	**$ 313.2**	**$ 314.9**	**$ 327.0**	**$ 315.2**	$ 319.3
Medical Claims Paid + IBNR Change[1]	(202.0)	(219.6)	(205.1)	(192.9)	(221.0)	(225.4)
Pharmacy Claims Paid + IBNR Change[1]	(50.9)	(57.4)	(56.3)	(51.1)	(61.5)	(62.6)
Expenses	(31.5)	(32.9)	(30.3)	(29.0)	(32.7)	(32.9)
TOTAL EXPENDITURES	**$ (284.4)**	**$ (309.9)**	**$ (291.7)**	**$ (273.0)**	**$ (315.2)**	$ (320.9)
NET PLAN GAIN / (LOSS)	**$ 30.2**	**3.3**	**23.2**	**54.0**	**$ -**	$ (1.6)
PLAN ASSETS (END OF YEAR)						
Assets	**$ 136.3**	**$ 130.5**	**$ 129.7**	**$ 160.4**	**$ 125.2**	$ 130.1
State Contrib. Paid for Following Plan Year	-	(38.1)	-	-	-	-
Assets Net of Prepaid State Contributions	**$ 136.3**	**$ 92.4**	**$ 129.7**	**$ 160.4**	**$ 125.2**	$ 130.1
IBNR Reserve	(31.1)	(31.1)	(27.1)	(27.1)	(27.1)	(27.1)
Catastrophic Reserve	(10.5)	(10.5)	(40.5)	(58.5)	(40.5)	(58.5)
Reserve for Future Premiums	(29.6)	(3.8)	(5.2)	(5.2)	(0.7)	(0.7)
NET ASSETS AVAILABLE	**$ 65.1**	**$ 47.0**	**$ 56.9**	**$ 69.6**	**$ 56.9**	$ 43.8
ENROLLMENT						
Active Employees (includes COBRA)	44,493	**44,246**	**45,011**	**45,143**	**45,012**	45,857
Retirees	14,226	**14,865**	**15,052**	**14,999**	**16,118**	15,838
TOTAL ENROLLED	**58,719**	**59,111**	**60,063**	**60,143**	**61,130**	61,694
TOTAL INCOME PEPM	**$ 446**	**$ 442**	**$ 437**	**$ 453**	**$ 430**	$ 431
TOTAL EXPENDITURES PEPM	**$ (404)**	**$ (437)**	**$ (405)**	**$ (401)**	**$ (430)**	$ (433)
Dates for Medical Experience	Until 12/16	4/15-3/16	4/16-3/17	Until 12/17	4/16-3/17	4/16-3/17
paid through	Dec-16	May-16	May-17	Dec-17	May-17	May-17
Dates for Pharmacy Experience	Until 12/16	6/15-5/16	6/17-5/17	Until 12/17	6/17-5/17	6/17-5/17
Census Data through	Dec-16	May-16	May-17	Dec-17	May-17	Dec-17
Financial Statement Data through	Dec-16	May-16	May-17	Dec-17	May-17	Dec-17

[1] The IBNR Change reflects only the June 30 modification shown on the financial statements.

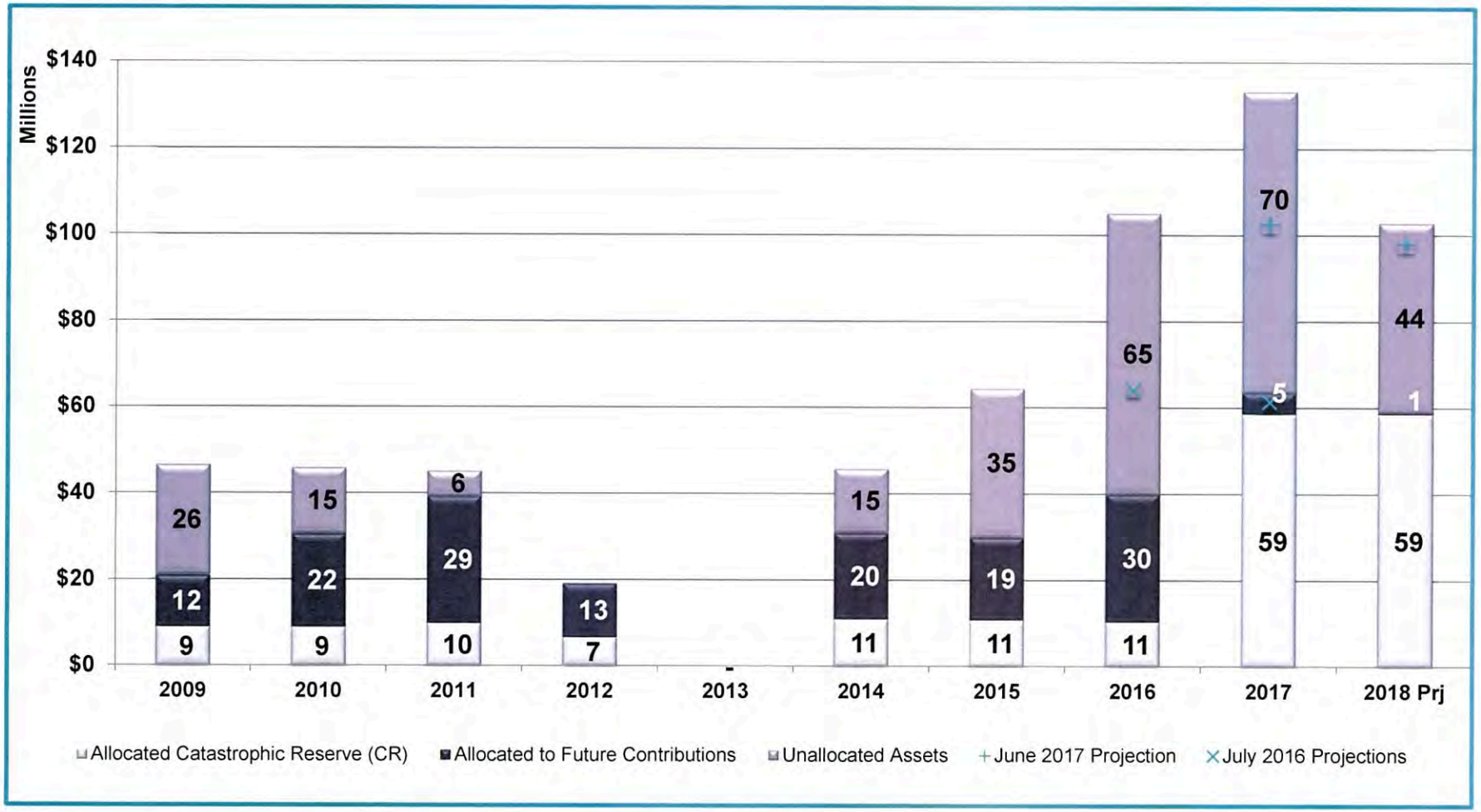
Income vs. Expenditures

The chart below displays the total income and expenditures by calendar year as reported in the financial statements; however, State contributions are allocated to the fiscal for which they are used to offset the rates even if they were contributed in the prior calendar year. The total expenditures shown by the red line include paid claims, IBNR change, and expenses. The income includes State contributions, minimum District contribution, participant contributions and other income. 2018 figures are based on the updated projections developed for this report.

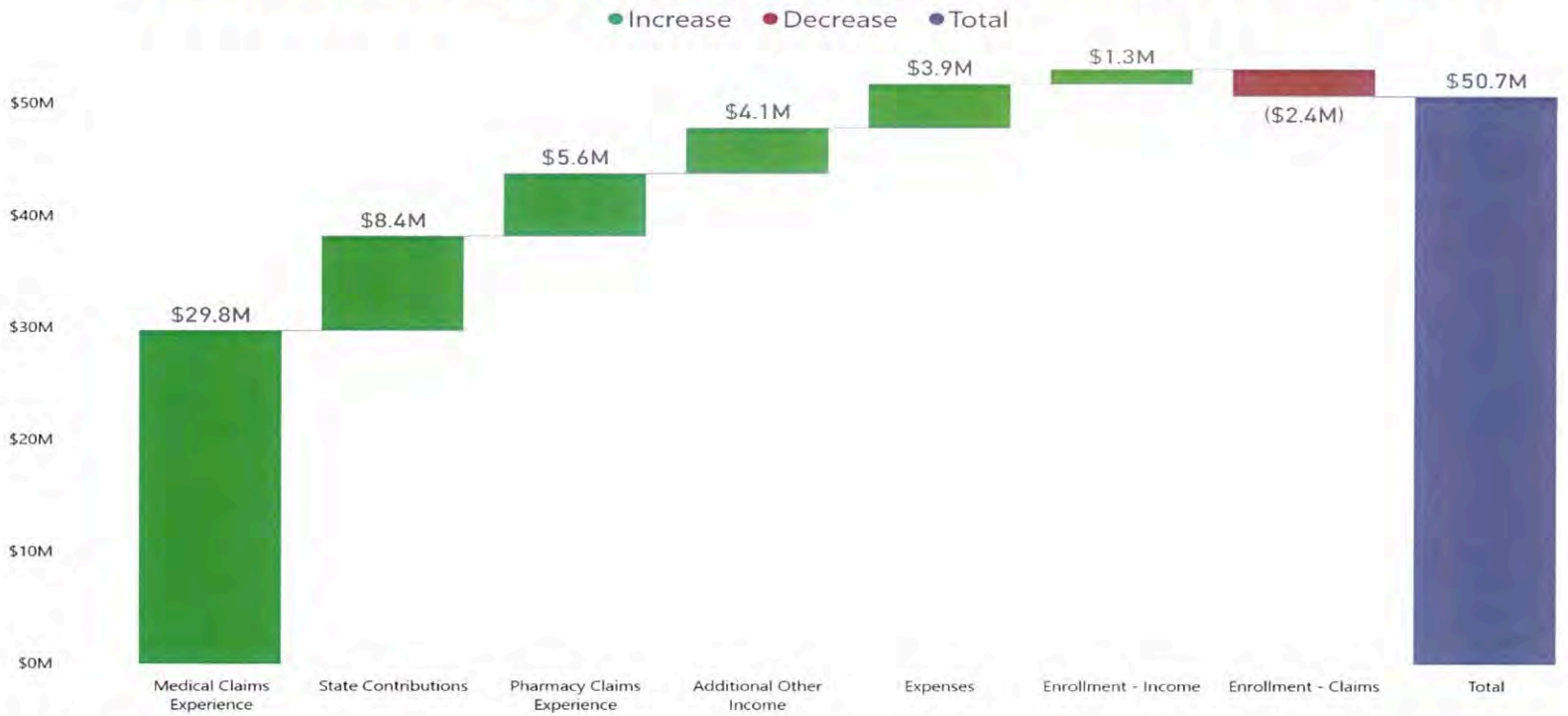


End of Year Assets Available

The chart below displays the total EOY assets available to offset for future contributions, excluding amounts that are contributed by the State for the following plan year. The darker shade shows assets that have been already allocated by the Board. The unallocated assets represent any additional assets available. The lighter shade shows the allocated catastrophic reserve.The 2018 figures are based on the updated projection developed for this report.

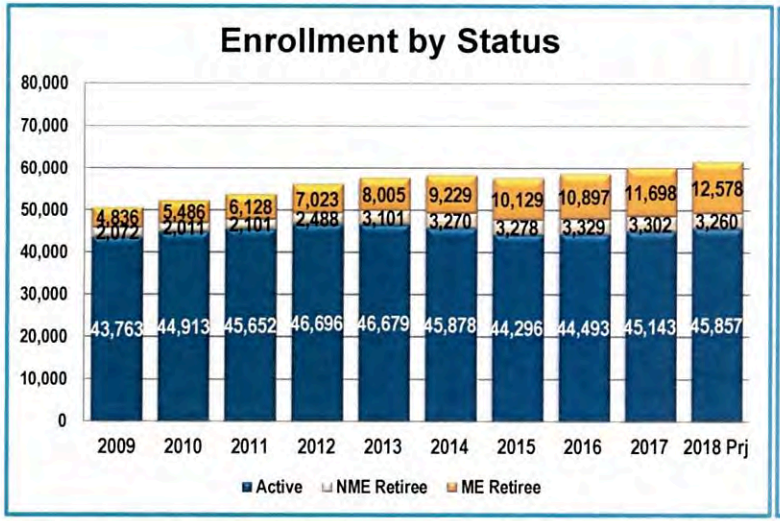


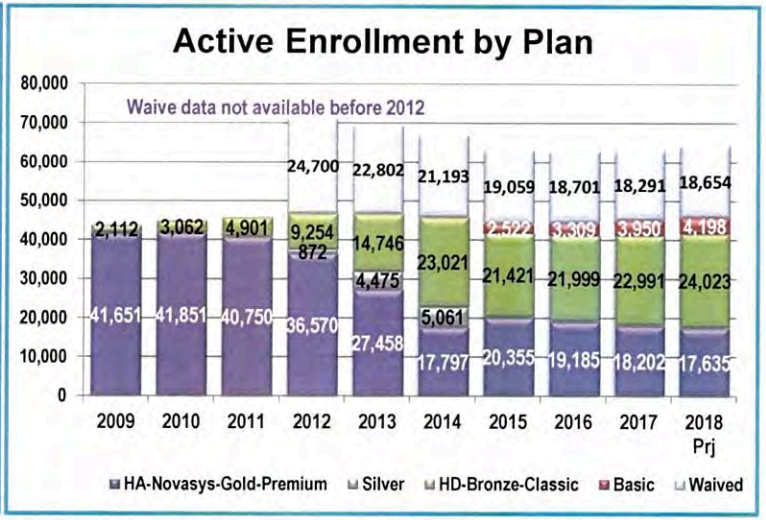
Sources of Gain / (Loss) for Calendar Year 2017



Medical Claims Experience	Medical claims experience was more favorable than projected when setting the rates.
State Contributions	Actual state contributions received were higher than assumed when setting the 2017 rates due to the conversion of a contribution normally received in the beginning of the following year converted to a monthly contribution.
Pharmacy Claims Experience	Pharmacy claims experience was very close to projections when setting the rates.
Additional Other Income	Differences in investment income and other unanticipated income such as pharmacy rebates.
Expenses	Plan expenses were lower than projected when setting the rates for 2017.
Enrollment - Income	The impact on income due to changes in enrollment from what was projected.
Enrollment - Claims	The impact on medical and pharmacy claims due to changes in enrollment from what was projected.

Enrollment

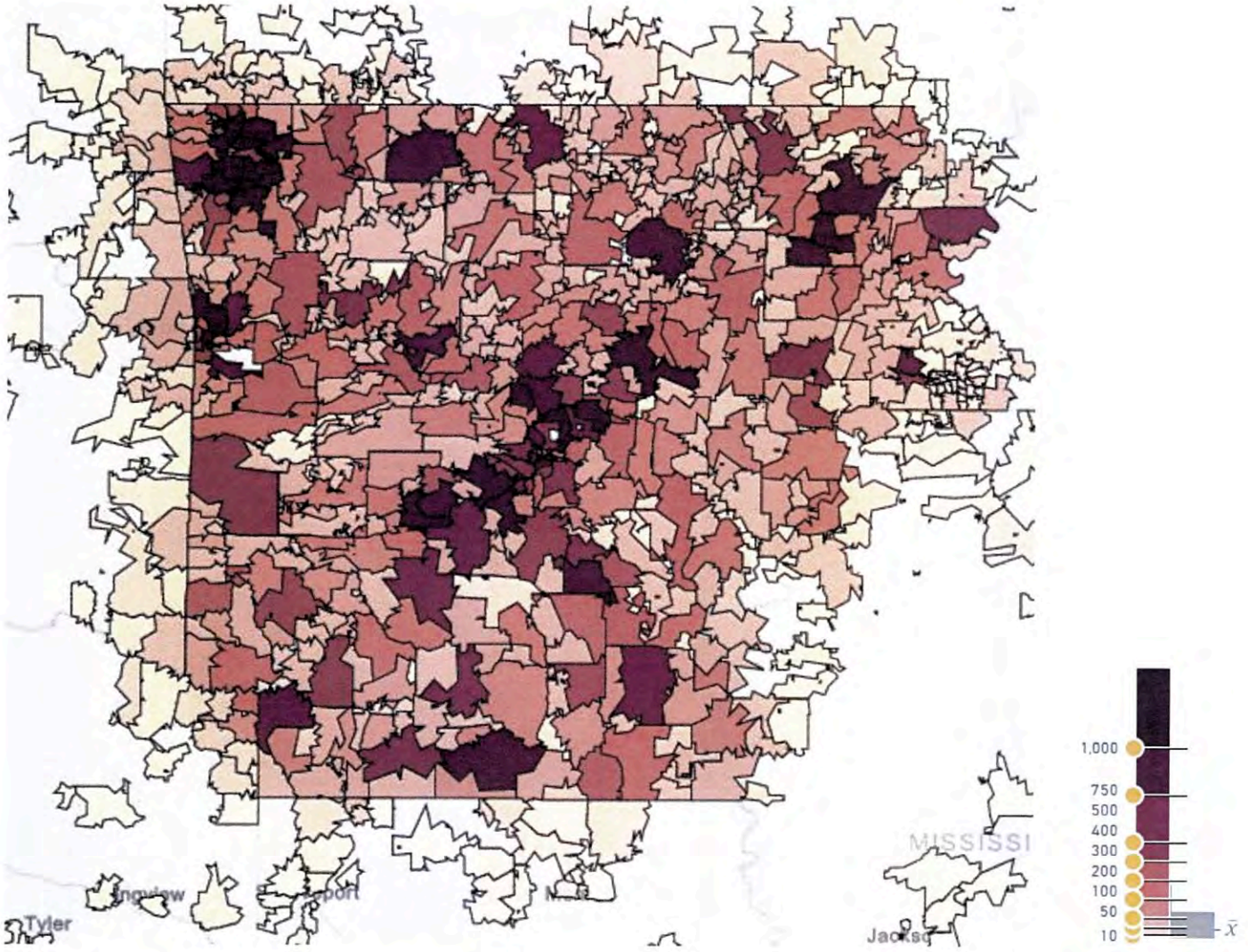




Average for Calendar Year Projection performed in (if applicable)		2016 Actual	2017 Jul-16	2017 Jun-17	2017 Actual	2018 Jun-17	2018 Jan-18
Actives by Plan **(includes COBRA contracts)**	Premium	19,185	18,749	18,419	18,202	17,289	17,635
	Classic	21,999	21,734	22,753	22,991	23,327	24,023
	Basic	3,309	3,763	3,839	3,950	4,396	4,198
	Total	**44,493**	**44,246**	**45,011**	**45,143**	**45,012**	**45,857**
	Waive	18,701	n/a	n/a	18,291	n/a	18,654
Actives by Family Status **(includes COBRA contracts)**	Single	31,756	31,748	31,685	31,651	31,788	31,766
	Ee&Spouse	1,791	1,791	1,881	1,857	1,854	1,993
	Ee&Ch(n)	7,247	7,074	7,581	7,726	7,519	7,989
	Family	3,700	3,634	3,864	3,910	3,852	4,109
	Total	**44,493**	**44,246**	**45,011**	**45,143**	**45,012**	**45,857**
	Members	**70,969**	**70,231**	**72,646**	**73,158**	**72,467**	**75,093**
Non-Medicare Retirees	Premium	1,076	1,218	903	841	901	708
	Classic	1,974	2,131	2,057	2,072	2,152	2,120
	Basic	280	406	357	390	425	432
Medicare Retirees	Premium	10,897	11,110	11,735	11,698	12,639	12,578
(includes Surviving Spouses)	**Total**	**14,226**	**14,865**	**15,052**	**14,999**	**16,118**	**15,838**
	Members	**15,797**	**16,629**	**13,833**	**16,601**	**17,935**	**17,484**
Total Employees & Retirees		**58,719**	**59,111**	**60,063**	**60,143**	**61,130**	**61,694**
Total Members		**86,766**	**86,861**	**86,480**	**89,759**	**90,401**	**92,577**

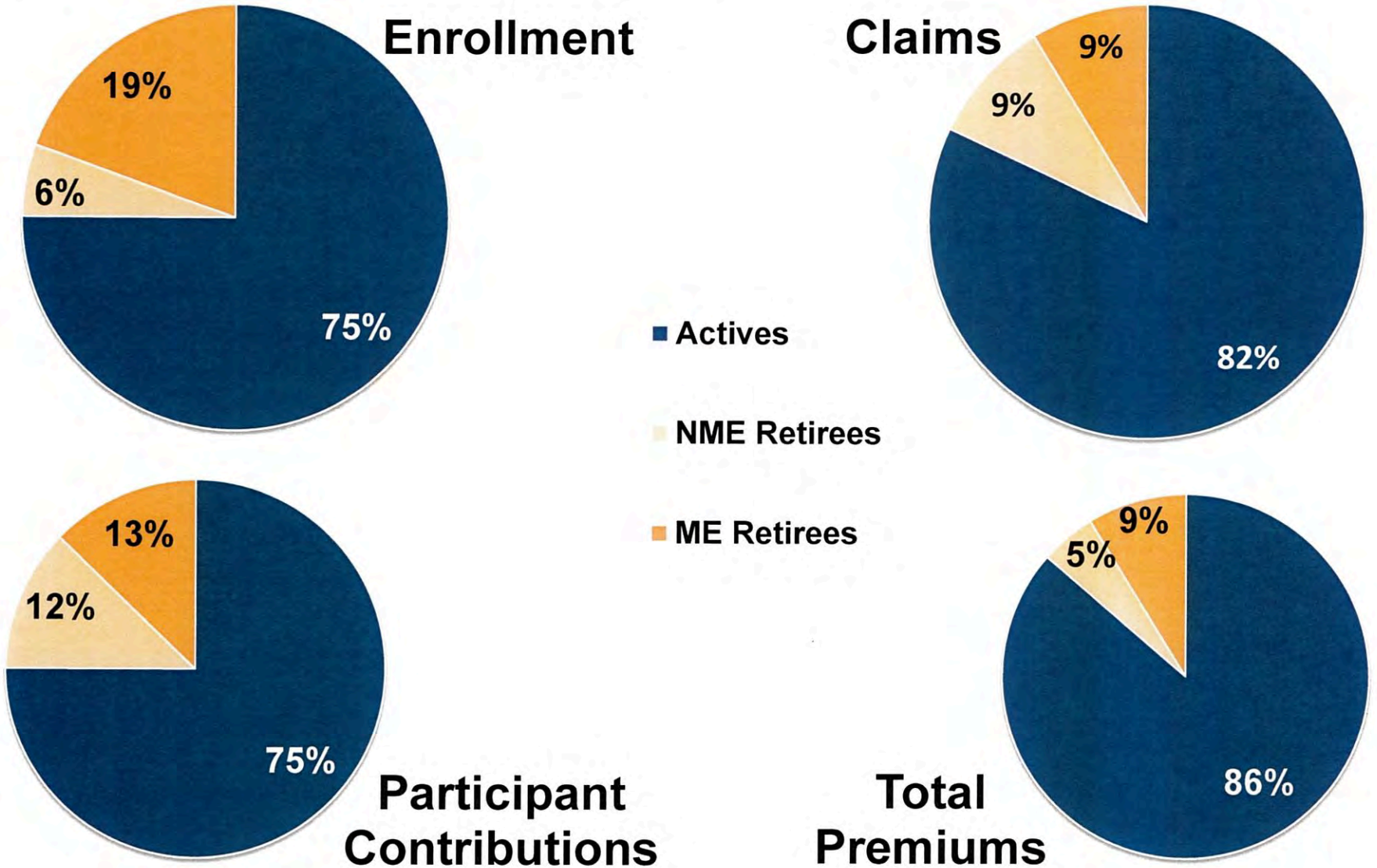
Enrollment Heat Map

The map below shows the distribution of all members (covered lives) by zip code. Darker areas indicate a higher number of members enrolled in that zip code.



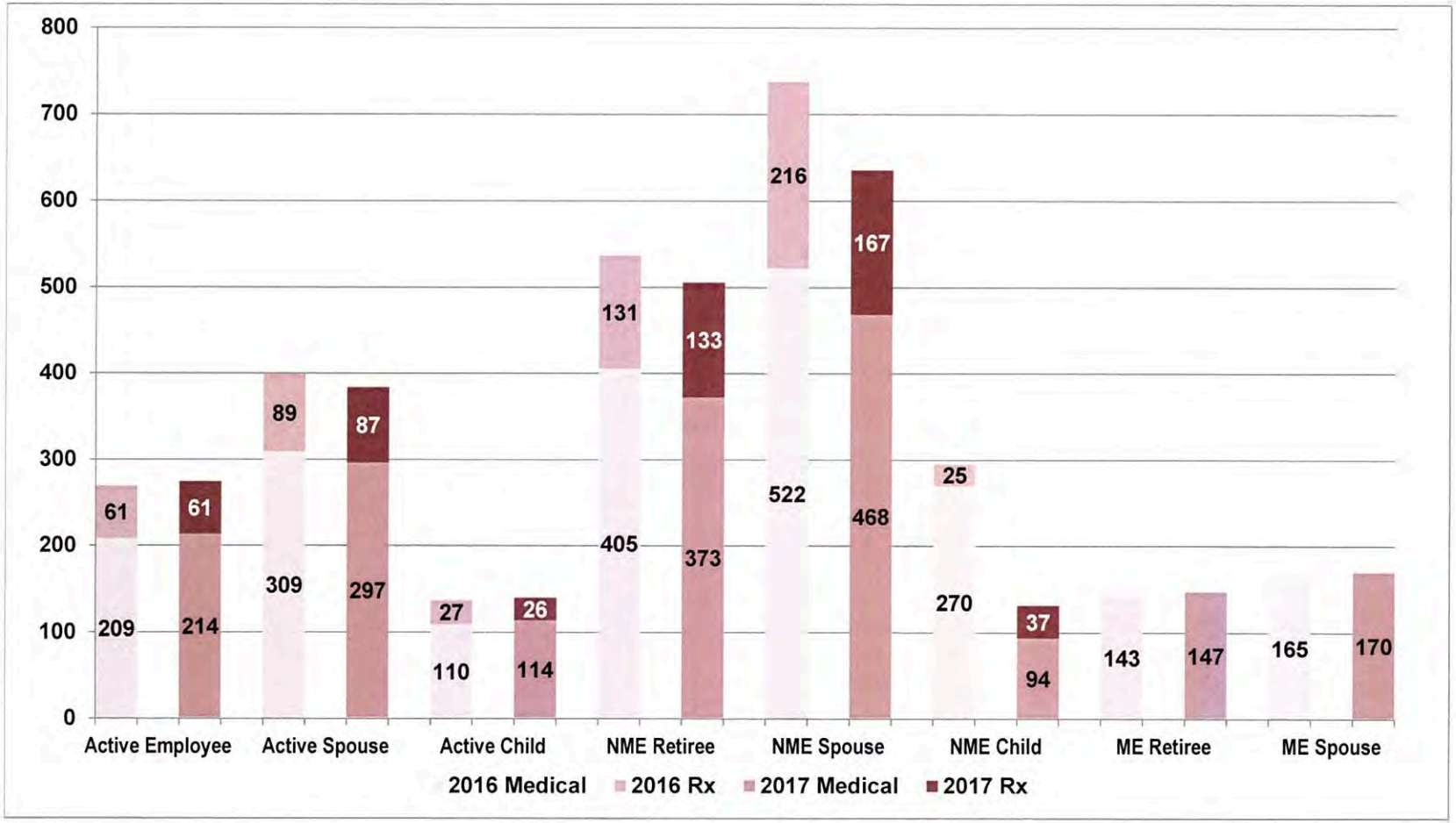
Distribution of Claims and Enrollment by Status

The pie charts below display the distribution of Enrollment, Participant Contributions, Total Premiums, and Claims by Actives, Non-Medicare Eligibles (NME) and Medicare Eligible (ME) Retirees for calendar year 2017 for all plans.



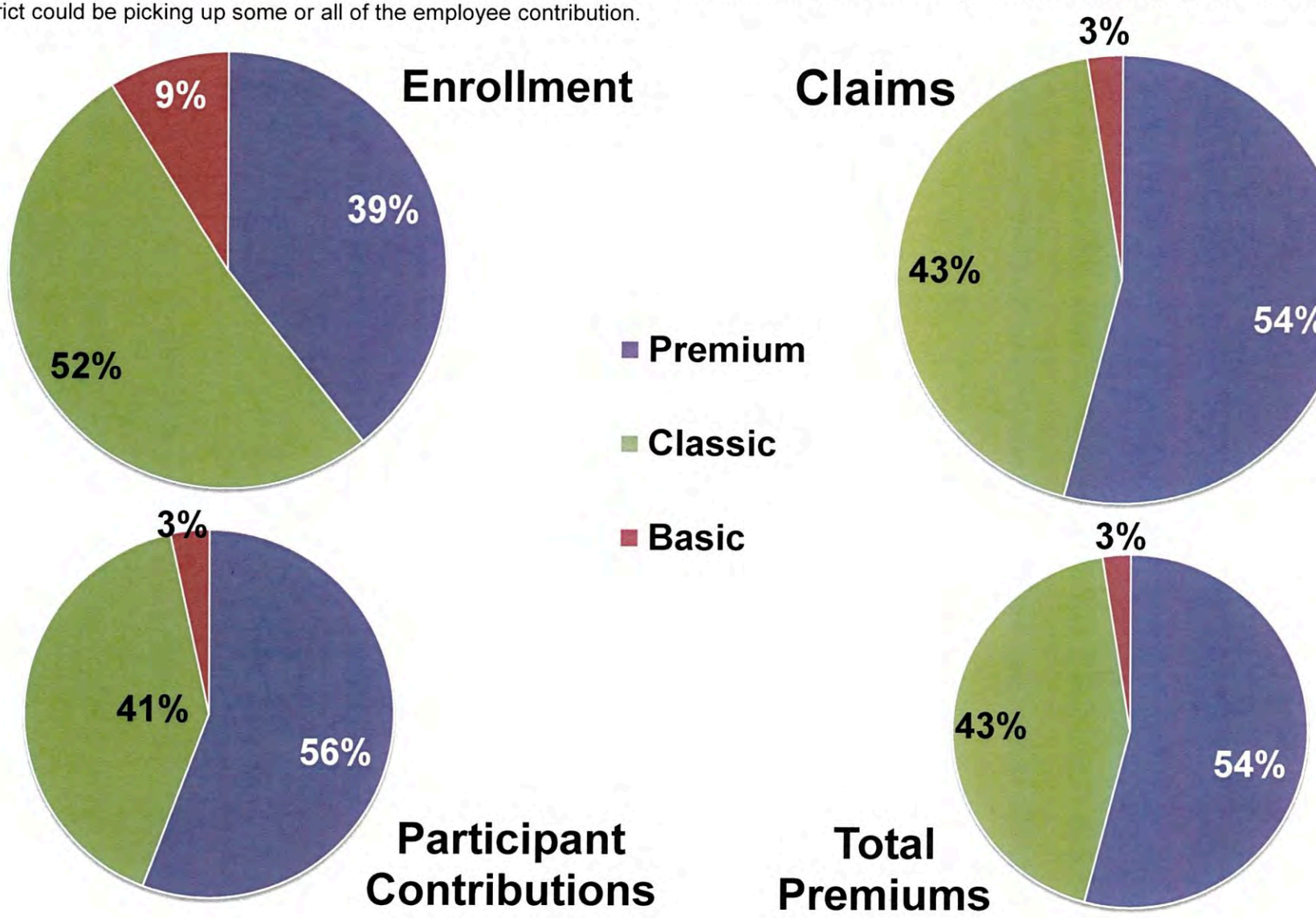
Incurred Claims PMPM by Status

The chart below shows the actual per member per month (PMPM) medical and pharmacy incurred claims by active/retiree status and by dependent status. The 2016 calendar year claims are paid through January 31, 2017. The 2017 claims completed are based on claims incurred in calendar year 2017 and paid through January 31, 2018.



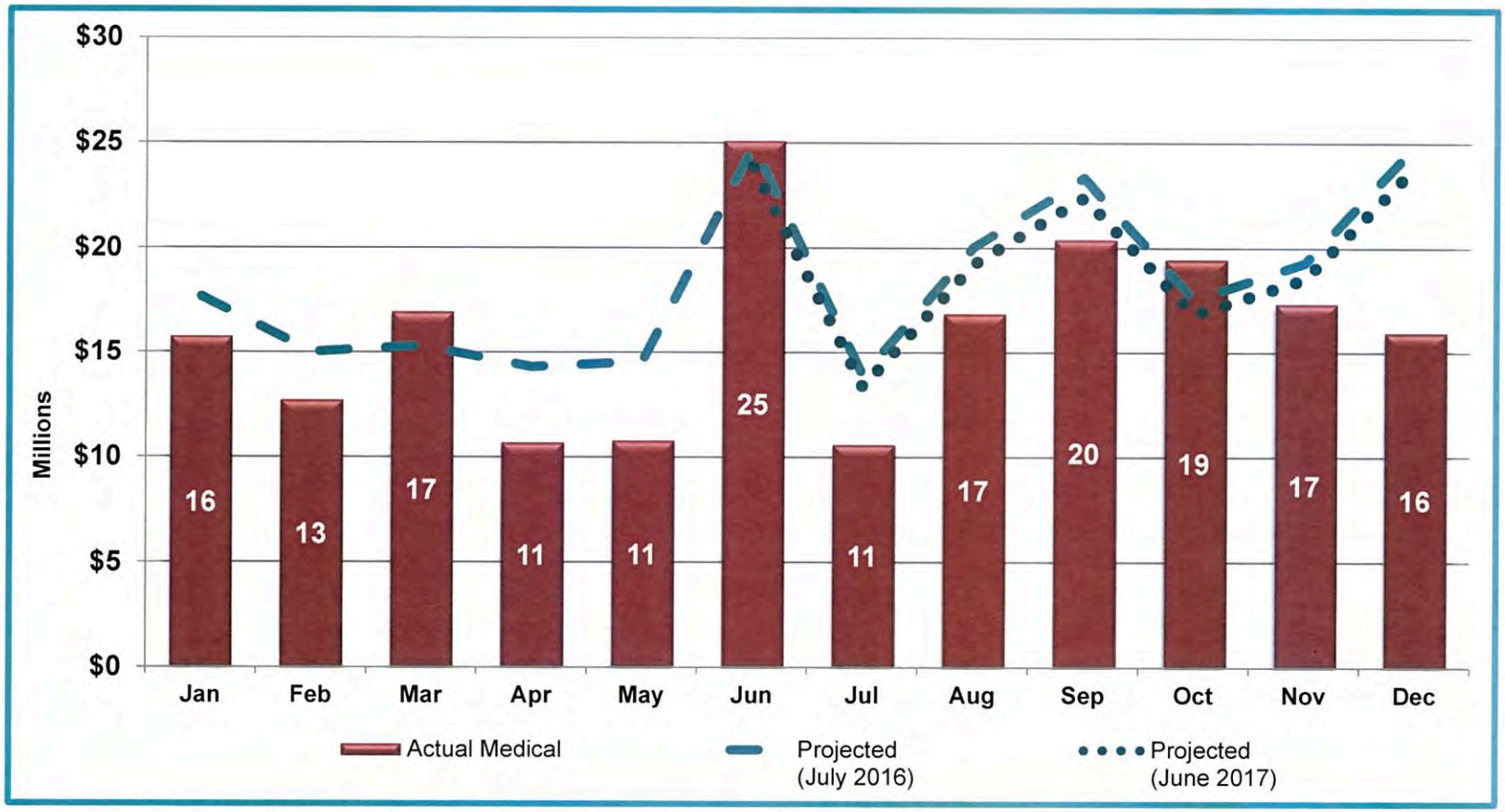
Distribution of Claims and Enrollment by Plan

The pie charts below display the distribution of Enrollment, Participation Contributions, Claims, and Total Premium by Plan for calendar year 2017 for all actives and non-Medicare retirees. Note that participant contributions may not be entirely what participants pay because their District could be picking up some or all of the employee contribution.



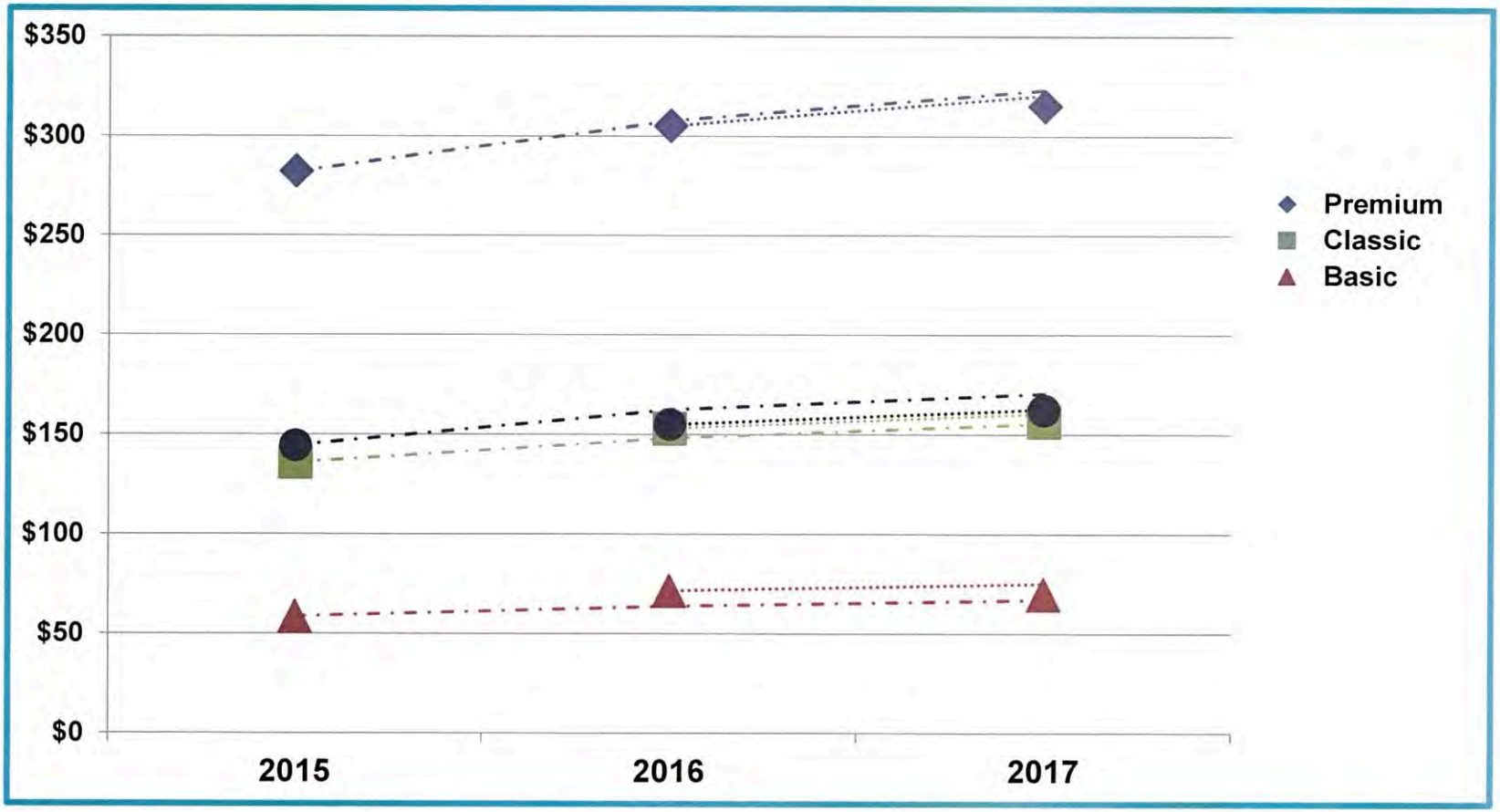
Medical Claims vs. Projections

The chart below shows the medical claims for calendar year 2017 (shown by the red bars) compared to the various medical claims projections.



Medical Claims PMPM by Plan Vs Trend

The chart below shows the actual per member per month (PMPM) medical claims compared to the PMPM for prior years trended. For 2016, a 9% annual trend is applied to all non-Medicare 2015 PMPMs (Premium, Classic, and Basic) and 12.5% for Medicare. For the 2017 PMPMs, a 5% trend was applied to non-Medicare and Medicare. PMPMs for Premium, Classic, Basic, and Medicare have been below the prior years' trended amounts.

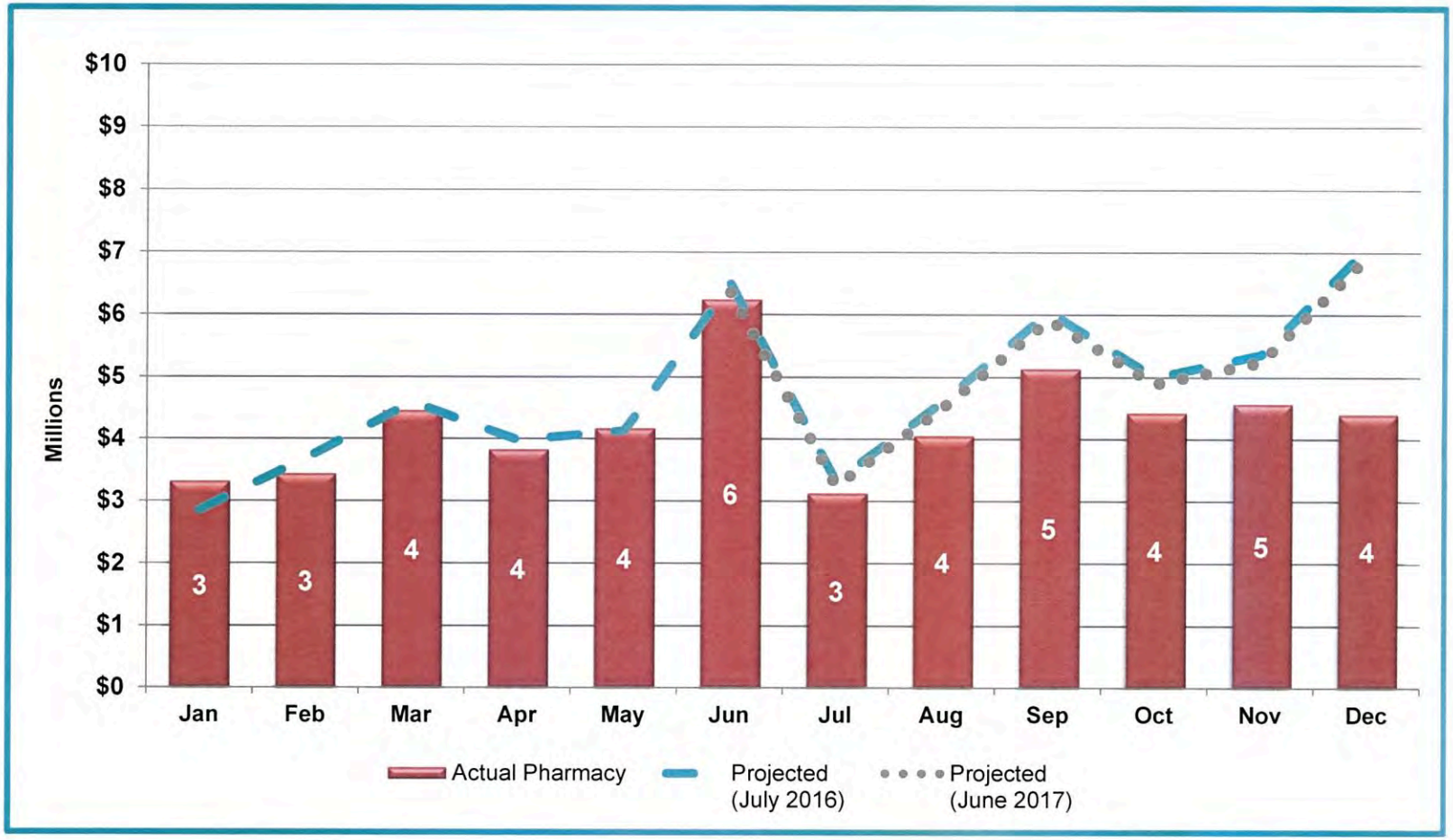


Medical Large Claims

		$100,000 - $249,999	$250,000 - $999,999	$1,000,000+	Total	Change from Prior Year
1/1/2017-12/31/2017						
Total All Plans	Number of Claimants	137	32	1	170	6
	Claim Amount	$ 20,338,628	$ 13,953,747	$ 1,003,809	$ 35,296,184	$ 2,384,994
	Average Claim	$ 148,457	$ 436,055	$ 1,003,809	$ 207,625	$ 6,947
Premium	Number of Claimants	78	16	-	94	-
	Claim Amount	$ 11,639,104	$ 8,087,200	$ -	$ 19,726,304	$ 1,213,157
	Average Claim	$ 149,219	$ 505,450	$ -	$ 209,854	$ 12,906
Classic	Number of Claimants	54	16	1	71	4
	Claim Amount	$ 8,025,442	$ 5,866,547	$ 1,003,809	$ 14,895,798	$ 1,074,260
	Average Claim	$ 148,619	$ 366,659	$ 1,003,809	$ 209,800	$ 3,508
Basic	Number of Claimants	5	-	-	5	2
	Claim Amount	$ 674,082	$ -	$ -	$ 674,082	$ 97,577
	Average Claim	$ 134,816	$ -	$ -	$ 134,816	$ (57,352)
1/1/2016-12/31/2016						
Total All Plans	Number of Claimants	133	31	-	164	16
	Claim Amount	$ 20,165,595	$ 12,745,595	$ -	$ 32,911,190	$ 5,859,373
	Average Claim	$ 151,621	$ 411,148	$ -	$ 200,678	$ 17,895
Premium	Number of Claimants	80	14	-	94	2
	Claim Amount	$ 12,091,837	$ 6,421,309	$ -	$ 18,513,147	$ 2,167,776
	Average Claim	$ 151,148	$ 458,665	$ -	$ 196,948	$ 19,281
Classic	Number of Claimants	51	16	-	67	12
	Claim Amount	$ 7,767,077	$ 6,054,462	$ -	$ 13,821,539	$ 3,308,319
	Average Claim	$ 152,296	$ 378,404	$ -	$ 206,292	$ 15,142
Basic	Number of Claimants	2	1	-	3	2
	Claim Amount	$ 306,681	$ 269,824	$ -	$ 576,505	$ 383,278
	Average Claim	$ 153,340	$ 269,824	$ -	$ 192,168	$ (1,059)
1/1/2015-12/31/2015						
Total All Plans	Number of Claimants	120	28	-	148	(3)
	Claim Amount	$ 16,654,317	$ 10,397,500	$ -	$ 27,051,818	$ (4,248,778)
	Average Claim	$ 138,786	$ 371,339	$ -	$ 182,783	$ (24,506)
Premium	Number of Claimants	75	17	-	92	
	Claim Amount	$ 10,433,914	$ 5,911,456	$ -	$ 16,345,371	
	Average Claim	$ 139,119	$ 347,733	$ -	$ 177,667	
Classic	Number of Claimants	44	11	-	55	
	Claim Amount	$ 6,027,176	$ 4,486,044	$ -	$ 10,513,220	
	Average Claim	$ 136,981	$ 407,822	$ -	$ 191,149	
Basic	Number of Claimants	1	-	-	1	
	Claim Amount	$ 193,227	$ -	$ -	$ 193,227	
	Average Claim	$ 193,227	$ -	$ -	$ 193,227	

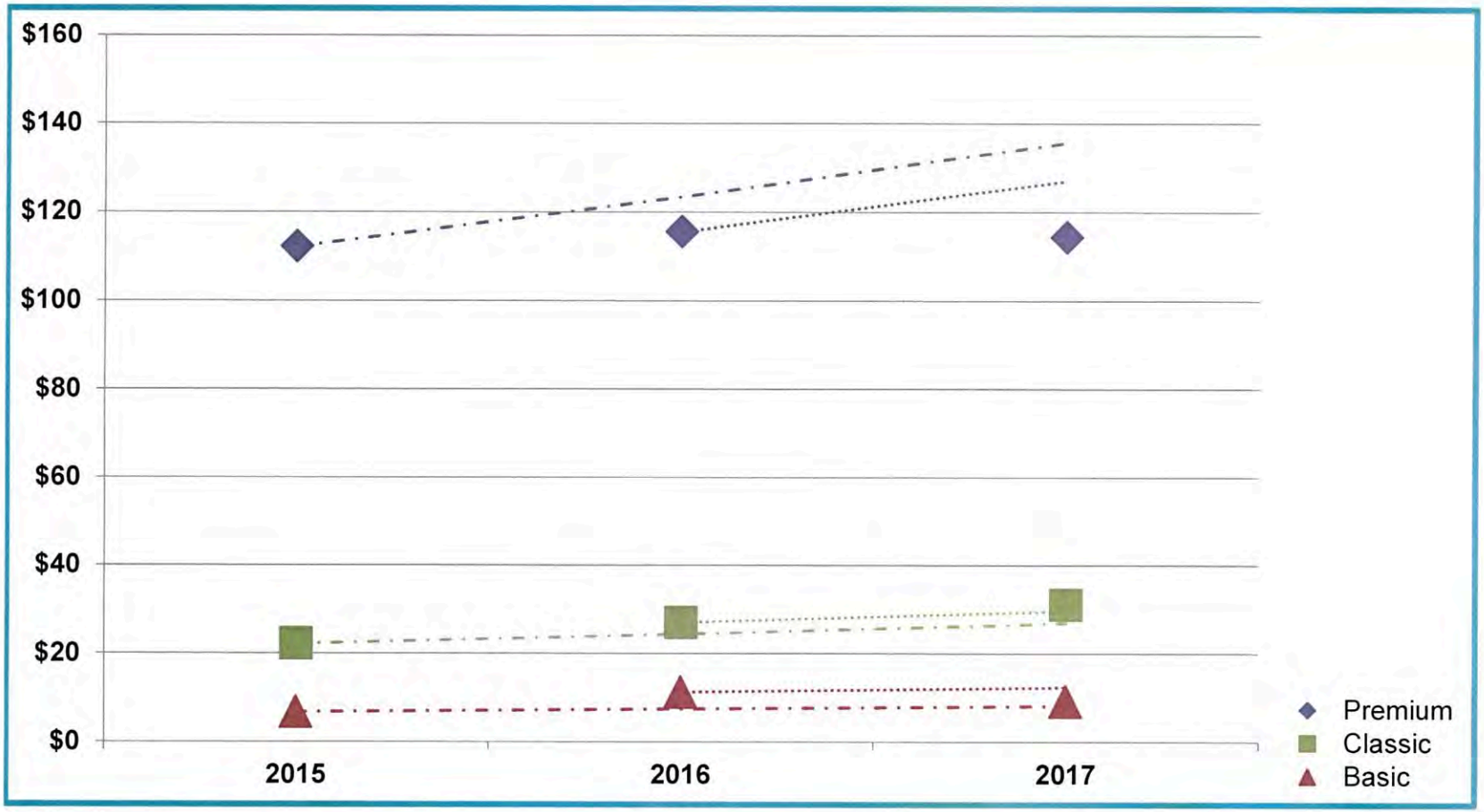
Pharmacy Claims vs. Projections

The chart below shows the pharmacy claims for calendar year 2017 (shown by the red bars) compared to the various pharmacy claims projections.



Pharmacy Claims PMPM by Plan vs. Trend

The chart below shows the actual per member per month (PMPM) pharmacy claims compared to the PMPM for prior years trended. For both years, a 10% annual trend is applied to all prior year PMPMs. PMPMs for Premium have been significantly below the prior years' trended amounts.



Pharmacy Large Claims

		$25,000 - $49,999	$50,000 - $99,999	$100,000+	Total	Change from Prior Year
1/1/2017-12/31/2017						
Total All Plans	Number of Claimants	194	158	31	383	14
	Claim Amount	$ 7,131,468	$ 10,412,354	$ 5,066,435	$ 22,610,257	$ 1,544,125
	Average Claim	$ 36,760	$ 65,901	$ 163,433	$ 59,035	$ 1,945
Premium	Number of Claimants	132	106	14	252	(12)
	Claim Amount	$ 4,802,697	$ 7,081,959	$ 2,431,632	$ 14,316,288	$ (151,352)
	Average Claim	$ 36,384	$ 66,811	$ 173,688	$ 56,811	$ 2,009
Classic	Number of Claimants	62	50	17	129	32
	Claim Amount	$ 2,328,771	$ 3,215,892	$ 2,634,803	$ 8,179,466	$ 2,023,498
	Average Claim	$ 37,561	$ 64,318	$ 154,988	$ 63,407	$ (57)
Basic	Number of Claimants	-	2	-	2	(6)
	Claim Amount	$ -	$ 114,503	$ -	$ 114,503	$ (328,022)
	Average Claim	$ -	$ 57,251	$ -	$ 57,251	$ 1,936
1/1/2016-12/31/2016						
Total All Plans	Number of Claimants	210	130	29	369	52
	Claim Amount	$ 7,701,801	$ 9,006,700	$ 4,357,631	$ 21,066,132	$ 3,310,037
	Average Claim	$ 36,675	$ 69,282	$ 150,263	$ 57,090	$ 1,077
Premium	Number of Claimants	156	89	19	264	26
	Claim Amount	$ 5,601,459	$ 6,134,260	$ 2,731,921	$ 14,467,640	$ 751,066
	Average Claim	$ 35,907	$ 68,924	$ 143,785	$ 54,802	$ (2,831)
Classic	Number of Claimants	51	37	9	97	20
	Claim Amount	$ 2,004,689	$ 2,635,257	$ 1,516,021	$ 6,155,967	$ 2,222,570
	Average Claim	$ 39,308	$ 71,223	$ 168,447	$ 63,464	$ 12,380
Basic	Number of Claimants	3	4	1	8	6
	Claim Amount	$ 95,653	$ 237,183	$ 109,689	$ 442,525	$ 336,401
	Average Claim	$ 31,884	$ 59,296	$ 109,689	$ 55,316	$ 2,254

Appendix A. - Contribution Rates: Actives

Calendar Year 2018

Actives	Base Monthly Premium	State and Plan Contribution	School Disctrict Contribution	2018 Total EE Cost*	2017 Total EE Cost*	Change in Premiums ($/%)		Assumed Enrollment
Premium								
Employee Only	$584.28	$243.32	$157.50	$183.46	$183.46	$ -	0%	14,620
Employee & Spouse	1,362.48	373.78	157.50	831.20	831.20	-	0%	273
Employee & Child(ren)	1,022.96	394.92	157.50	470.54	470.54	-	0%	1,989
Family	1,801.16	810.22	157.50	833.44	833.44	-	0%	407
Est. Monthly Total ($mil)	$ 11.7	$ 4.8	$ 2.7	$ 4.2	$ 4.2	$ -		17,289
Classic								
Employee Only	$284.04	$80.52	$157.50	$46.02	$ 46.02	$ -	0%	13,633
Employee & Spouse	627.22	115.10	157.50	354.62	354.62	-	0%	1,394
Employee & Child(ren)	477.50	161.58	157.50	158.42	158.42	-	0%	5,163
Family	820.68	304.86	157.50	358.32	358.32	-	0%	3,136
Est. Monthly Total ($mil)	$ 9.8	$ 3.0	$ 3.7	$ 3.1	$ 3.1	$ -		23,327
Basic								
Employee Only	$157.68	($11.08)	$157.50	$11.26	$ 11.26	$ 0.00	0%	3,535
Employee & Spouse	316.58	(113.70)	157.50	272.78	272.78	-	0%	187
Employee & Child(ren)	247.26	(32.10)	157.50	121.86	121.86	-	0%	366
Family	406.18	(26.94)	157.50	275.62	275.62	-	0%	308
Est. Monthly Total ($mil)	$ 0.8	$ (0.1)	$ 0.7	$ 0.2	$ 0.2	$ 0.0		4,396
Total (Monthly) ($ mil)	$ 22.3	$ 7.7	$ 7.1	$ 7.5	$ 7.5	$ 0.0		*45,012*
Est. Annual Total ($ mil)	$ 267.6	$ 92.9	$ 85.1	$ 89.6	$ 89.6	$ 0.0		

Employee Cost assumes wellness participation. Wellness penalties subtracted from Total Rates.

Appendix A. - Contribution Rates: Retirees
Calendar Year 2018

Non-Medicare Eligible Retirees	Base Monthly Premium	Direct State Contributions	Reserve Used / (Added)	2018 Total Ret. Cost	2017 Total Ret. Cost	Change in Premiums ($/%)		Assumed Enrollment
Premium								
Retiree Only	$584.28	$0.00	($56.86)	$641.14	$641.14	$0.00	0%	778
Retiree & NME SP	1,362.48	0.00	(94.70)	1,457.18	1,457.18	0.00	0%	38
Retiree & Child(ren)	1,022.96	0.00	(169.64)	1,192.60	1,192.60	0.00	0%	9
Retiree & NME SP&CH	1,801.16	0.00	(207.48)	2,008.64	2,008.64	0.00	0%	6
Retiree & ME SP	767.26	0.00	(27.86)	795.12	795.12	0.00	0%	68
Retiree & ME SP & CH	1,205.94	0.00	(140.64)	1,346.58	1,346.58	0.00	0%	2
Est. Monthly Total ($mil)	$ 0.6	$ -	($0.1)	$ 0.6	$ 0.6	$ -		901
Classic								
Employee Only	$284.04	$0.00	$10.74	$ 273.30	$ 273.30	$ -	0%	1,799
Employee & Spouse	627.22	0.00	61.44	565.78	565.78	-	0%	252
Employee & Child(ren)	477.50	0.00	7.68	469.82	469.82	-	0%	53
Family	820.68	0.00	74.48	746.20	746.20	-	0%	48
Est. Monthly Total ($mil)	$ 0.7	$ -	$ 0.04	$ 0.7	$ 0.69	$ -		2,152
Basic								
Employee Only	$157.68	$0.00	$9.18	$ 148.50	$ 148.50	$0.00	0%	344
Employee & Spouse	316.58	0.00	46.86	269.72	269.72	0.00	0%	59
Employee & Child(ren)	247.26	0.00	8.74	238.52	238.52	0.00	0%	14
Family	406.18	0.00	70.46	335.72	335.72	0.00	0%	8
Est. Monthly Total ($mil)	$ 0.1	$ -	$ 0.01	$ 0.1	$ 0.1	$ -		425
Total (Monthly) ($ mil)	$ 1.4	$ -	$ (0.01)	$ 1.4	$ 1.4	$ -		3,478
Est. Annual Total ($ mil)	$ 16.7	$ -	$ (0.09)	$ 16.8	$ 16.8	$ -		

ME Retirees	Base Monthly Premium	Direct State Contributions	Reserve Used / (Added)	2018 Total Ret. Cost	2017 Total Ret. Cost	Change in Premiums ($/%)		Assumed Enrollment
Medicare Eligible								
Retiree Only	$182.98	$43.20	$39.00	$100.78	$100.78	$ -	0%	11,508
Retiree & NME SP	756.08	(27.84)	0.00	783.92	783.92	-	0%	82
Retiree & Child(ren)	672.16	(84.94)	0.00	757.10	757.10	-	0%	15
Retiree & NME SP&CH	1,399.86	(121.62)	0.00	1,521.48	1,521.48	-	0%	1
Retiree & ME SP	342.08	48.07	30.97	263.04	263.04	-	0%	1,033
Retiree & ME SP & CH	831.26	(57.32)	0.00	888.58	888.58	-	0%	0
Est. Monthly Total ($mil)	$ 2.5	$ 0.54	$ 0.48	$ 1.51	$ 1.51	$ -		12639
Total (Est. Annual)	$ 30.4	$ 6.52	$ 5.77	$ 18.11	$ 18.11	$ -		

Appendix A. - Contribution Rates: Actives
Calendar Year 2017

Actives	Base Monthly Premium	State and Plan Contribution	School Disctrict Contribution	2017 EE Total Cost*	2016 EE Total Cost*	Change in Premiums ($/%)		Assumed Enrollment
Premium								
Employee Only	$584.64	$ 245.25	$ 155.93	$183.46	$ 179.38	$ 4.08	2%	15,959
Employee & Spouse	1,366.90	379.77	155.93	831.20	$ 812.72	18.48	2%	318
Employee & Child(ren)	1,025.62	399.15	155.93	470.54	$ 460.08	10.46	2%	2,044
Family	1,807.88	818.51	155.93	833.44	$ 814.92	18.52	2%	428
Est. Monthly Total ($mil)	$ 12.6	$ 5.2	$ 2.9	$ 4.5	$ 4.4	$ 0.1		18,749
Classic								
Employee Only	$276.18	$ 74.23	$ 155.93	$46.02	$ 45.00	$ 1.02	2%	12,875
Employee & Spouse	611.52	100.97	155.93	354.62	$ 346.74	7.88	2%	1,288
Employee & Child(ren)	465.22	150.87	155.93	158.42	$ 154.90	3.52	2%	4,687
Family	800.56	286.31	155.93	358.32	$ 350.36	7.96	2%	2,885
Est. Monthly Total ($mil)	$ 8.8	$ 2.6	$ 3.4	$ 2.8	$ 2.8	$ 0.1		21,734
Basic								
Employee Only	$134.50	$ (32.69)	$ 155.93	$11.26	$ 11.00	$ 0.26	2%	2,915
Employee & Spouse	263.18	(165.53)	155.93	272.78	$ 266.72	6.06	2%	184
Employee & Child(ren)	207.04	(70.75)	155.93	121.86	$ 119.16	2.70	2%	343
Family	335.72	(95.83)	155.93	275.62	$ 269.50	6.12	2%	320
Est. Monthly Total ($mil)	$ 0.6	$ (0.2)	$ 0.6	$ 0.2	$ 0.2	$ 0.0		3,763
Total (Monthly) ($ mil)	$ 22.1	$ 7.6	$ 6.9	$ 7.5	$ 7.4	$ 0.2		44,246
Est. Annual Total ($ mil)	$ 265.1	$ 91.7	$ 82.8	$ 90.6	$ 88.6	$ 2.0		

* Monthly Total EE Cost is $75 higher if no wellness credit.

Appendix A. - Contribution Rates: Retirees
Calendar Year 2017

Non-Medicare Eligible Retirees	Base Monthly Premium	Direct State Contributions	Reserve Used / (Added)	2017 Total Ret. Cost	2016 Total Ret. Cost	Change in Premiums ($/%)		Assumed Enrollment
Premium								
Retiree Only	$590.40	$0.00	(50.74)	$641.14	$ 641.14	$0.00	0%	1,320
Retiree & NME SP	1,308.18	0.00	(149.00)	1,457.18	1,457.18	0.00	0%	72
Retiree & Child(ren)	1,077.80	0.00	(114.80)	1,192.60	1,192.60	0.00	0%	13
Retiree & NME SP&CH	1,795.58	0.00	(213.06)	2,008.64	2,008.64	0.00	0%	8
Retiree & ME SP	768.26	0.00	(26.86)	795.12	795.12	0.00	0%	120
Retiree & ME SP & CH	1,255.66	0.00	(90.92)	1,346.58	1,346.58	0.00	0%	1
Est. Monthly Total ($mil)	$ 0.99	$ -	$ (0.08)	$ 1.08	$ 1.08	$ -		1,534
Classic								
Employee Only	$ 270.02	$0.00	2.08	$ 267.94	$ 267.94	$0.00	0%	1,329
Employee & Spouse	562.28	0.00	7.60	554.68	554.68	0.00	0%	205
Employee & Child(ren)	468.48	0.00	(1.34)	469.82	469.82	0.00	0%	40
Family	760.74	0.00	29.18	731.56	731.56	0.00	0%	35
Est. Monthly Total ($mil)	$ 0.52	$ -	$ 0.01	$ 0.51	$ 0.51	$ -		1,610
Basic								
Employee Only	$ 133.02	$0.00	(15.48)	$ 148.50	$ 148.50	$0.00	0%	117
Employee & Spouse	242.22	0.00	(27.50)	269.72	269.72	0.00	0%	15
Employee & Child(ren)	207.18	0.00	(31.34)	238.52	238.52	0.00	0%	1
Family	316.38	0.00	(18.36)	334.74	334.74	0.00	0%	3
Est. Monthly Total ($mil)	$ 0.02	$ -	$ (0.00)	$ 0.02	$ 0.02	$ -		136
Total (Monthly) ($ mil)	$ 1.54	$ -	$ (0.08)	$ 1.62	$ 1.62	$ -		3,279
Est. Annual Total ($ mil)	$ 18.42	$ -	$ (0.97)	$ 19.39	$ 19.39	$ -		-

ME Retirees	Base Monthly Premium	Direct State Contributions	Reserve Used / (Added)	2016 Total Ret. Cost	2015 Total Ret. Cost	Change in Premiums ($/%)		Assumed Enrollment
Medicare Eligible								
Retiree Only	$177.86	$50.66	28.40	$ 98.80	$ 98.80	$0.00	0%	10,106
Retiree & NME SP	757.06	(26.86)	0.00	783.92	783.92	0.00	0%	85
Retiree & Child(ren)	718.76	(38.33)	0.00	757.10	757.10	0.00	0%	17
Retiree & NME SP&CH	1,383.03	(138.45)	0.00	1,521.48	1,521.48	0.00	0%	2
Retiree & ME SP	331.82	25.32	48.63	257.88	257.88	0.00	0%	928
Retiree & ME SP & CH	872.73	(15.84)	0.00	888.57	888.57	0.00	0%	0
Est. Monthly Total ($mil)	$ 2.19	$ 0.53	$ 0.33	$ 1.32	$ 1.32	$ -		11,138
Total (Est. Annual)	$ 26.22	$ 6.39	$ 3.99	$ 15.85	$ 15.85	$ -		

Appendix B. - Summary of Plan or Policy Changes

Date	Major Change
For 2018 Plan Year	No changes.
For 2017 Plan Year	$75 wellness credit extended to spouses of active employees. Participants must have had wellness exam and taken a health assessment in the past year.
For 2016 Plan Year	Embedded Individual Medical OOP Max is applied for Classic and Basic within the family OOP Max. The individual and family OOP max amounts remain the same as in 2015. Effective 7/1/2016 Change to MedImpact Healthcare Systems Inc. as the pharmacy benefits manager.
For 2015 Plan Year	Plans were renamed Premium, Classic, and Basic to avoid confusion with metallic plans from Exchange. Premium is former Gold with $1,000/$2,000 deductible for individual/family, Office Visit copays at $25/$50 for Primary Care Physician (PCP)/Specialists, no copay on hospitalization, $3,100/$6,600 individual/family Out-of-Pocket (OOP) max for Rx, $2,000/$4,000 deductible for Out-of-Network (OON) benefits, and no OOP max for OON benefits. Classic is former Bronze with a $4,450/$6,675 coinsurance OOP max, and a true OOP max (including deductible, coinsurance, copays) of $6,450/$9,675 for individual/family. Classic provides no coverage for non-preferred brand drugs, and no OOP max for OON benefits. Basic is another HSA qualified plan with a $4,250/$8,500 individual/family In-Network deductible, a $2,200/$4,400 coinsurance max, and a true OOP max of $6,450/$12,900. Basic provides no coverage for non-preferred brand drugs, and no OON coverage. Wellness credit: Active employee contributions are reduced by $75/mo if the employee had a physical exam in the past year (new hires get the credit automatically) .
For 2014 Plan Year	Increase Gold Plan In-Network maximum out of pocket (MOOP) to $2,500 for individual, $5,000 for family. Increase Gold and Silver Plans' Office Visit copays to $35/$70 for Primary Care Physician (PCP)/Specialists. Increase Gold and Silver Plans' Pharmacy copays to $15/$40/$80/$100 for Generic/Preferred Brand/Non-Preferred Brand/Specialty drugs. Increase Gold Plan ER copay to $250, Silver plan ER copay to $300, Gold and Silver Plans' Ambulance copay to $50. Change Gold and Silver Plans' rehab cost share to $35 copay. Increase Silver Plan In-Network deductible to $1,000 for individual, $2,000 for family, maximum out of pocket to $3,000 for individual, $6,000 for family. Increase Silver Plan Out-Of-Network deductible to $2,000 for individual, $4,000 for family, maximum out of pocket to $8,000 for individual, $16,000 for family. Increase Bronze Plan In-Network deductible to $2,000 for individual, $3,000 for family, MOOP to $6,350 for individual, $9,525 for family. Increase Bronze Plan Out-Of-Network deductible to $4,000 for individual, $8,000 for family, MOOP to $12,700 for individual, $19,000 for family.
For 2013 Plan Year	Women's preventive care covered at 100%.
For 2012 Plan Year	ARHealth plan became Gold Plan; network is only Health Advantage (NovaSys no longer an option). HD PPO became Bronze Plan; network changed from NovaSys to Health Advantage. Silver Plan with $25 PCP copay and $750 deductible offered through QualChoice. NME Retirees eligible to elect Gold, Silver or Bronze (ME Retirees are Gold only). Bariatric surgery covered through pilot program. Coverage for Autism added. Behavioral Health changed to self-insured and integrated with Medical.
For 2011 Plan Year	Lifetime Max for Out-of-Network (OON) changed to match the In Network's (INN) Unlimited Lifetime Maximum. Immunizations covered at 100% for OON coverage. Some services under Behavioral Health now do not require pre-authorization. Intensive Out-Patient Services under Behavioral Health now require 20% member coinsurance. $10,000 Benefit Maximum Removed for Durable Medical Equipment / Enteral Feeding. Hearing/Vision Screening copayment changed to $35 OON (ARHealth), and $35 INN & OON (ARHealth HD). Active and non-Medicare experience was blended in determining the rates. Increased credibility was given to the High Deductible Plan in determining the rates. Child covered until age 26.

Appendix B. - Summary of 2017/2018 Benefits for AR Health (PSE)

Benefit Option Name: Last Modified: Provider Network:	Premium 1/1/2016 Health Advantage	Classic 1/1/2016 Health Advantage	Basic 1/1/2016 Health Advantage
In-Network (INN) Benefits			
Deductible (Individual / Family)	$1000 / $2000	$2000 / $3000[3]	$4250 / $8500[3]
Coinsurance	20%	20%	20%
Coinsurance limit (after Ded.) Individual/Family	$2500 / $5000	$4450 / $6675	$2200/$4400
Copays			
Office Visit - Primary Care (PCP)	$25	Ded. & Coins.	Ded. & Coins.
OV - Specialist Care Provider (SCP)	$50	Ded. & Coins.	Ded. & Coins.
Urgent Care (UC)	$100	Ded. & Coins.	Ded. & Coins.
Emergency Room (ER) Non-admitted	$250	Ded. & Coins.	Ded. & Coins.
Emergency Transportation-Ambulance	$50	Ded. & Coins.	Ded. & Coins.
Hospital Facility - Inpatient & SNF (Co-pay/Admission)[4]	$250	Ded. & Coins.	Ded. & Coins.
Hospital Facility - Outpatient - Co-Pay[4]	$100	Ded. & Coins.	Ded. & Coins.
Out-of-Pocket Max (Individual / Family)[2]	$3500 / $7000	$6450 / $9675[5]	$6450 / $12900[5]
Out-of-Network (OON) Benefits[1]			
Deductible (Individual / Family)	$2000 / $4000	$3000 / $6000[3]	Not Covered
Coinsurance	40%	40%	
Out-of-Pocket Max (Individual / Family)[2]	Unlimited / Unlimited	Unlimited / Unlimited	
Annual Maximum INN / OON	Unlimited	Unlimited	Unlimited
Prescription Drugs			
Separate Deductible then the following Copays:	None	Included with Medical	Included with Medical
Retail (31 Days) - Generic/Formulary /Non-Form./ Specialty	$15 / $40 / $80 / $100		
Mail Order (93 Days) - Generic/Form. /Non-Form./Specialty	$45 / $120/ $240/ $300		
Non-Formulary Covered	Yes	No	No
Out-of-Pocket Max (Individual / Family)[2]	$3100 / $6200	n/a / n/a	n/a / n/a
Selected Detail Benefits			
Psychiatry	INN: $25 Copay; OON: Ded & Coins.	Ded & Coins.	Ded. & Coins.
Rehabilitation (i.e., speech, occup. physical):	INN: $25 Copay; OON: Ded. & Coins.	Ded & Coins.	Ded. & Coins.
Chiropractors	INN: $25 Copay; OON: Ded & Coins.	Ded & Coins.	Ded. & Coins.
Non- Medicare Benefits Covered:	Yes, same as NME		
Non- Medicare Providers Covered:	Non-Par & Non-Accepting		
Pharmacy Covered:	Non-Par & Non-Accepting		

[1]When an in-network provider is not available within 50 miles for a hospital and 25 miles for all other providers, then in-network benefits apply.

[2]OOP Max includes the deductible.

[3]Deductible and OOP Max are non-embedded; meaning the individual deductible and OOP max are not applied for an individual family member

[4]Deductible and Co-Insurance also applies

Appendix C. - Provider Contract Summary

Service Providers	Cost		Effective Dates
Benefit and Claims Coordination (Actives & Retirees)			
- Premium (Health Advantage)	$26.70	Per Employee Per Month	For Calendar Year
- Classic (Health Advantage)	$24.60	Per Employee Per Month	2016 & 2017 unless noted
- Basic (Health Advantage)	$24.60	Per Employee Per Month	
- Primary (QualChoice)	$23.89	Per Employee Per Month	
Prescription Drugs Claims Administration	All Plans		
- CatamaranRx (Includes staff)	$2.75	Per Member Per Month	Ended June 30, 2016
- Retiree Drug Subsidy - RDS	$0.102	Per RDS Member Per Month	Ended June 30, 2016
- MedImpact (Does NOT include contract employees)	$1.05	Per Member Per Month	Began 7/1/2016
- MedImpact Employees	$25,598	Monthly (salary & benefits)	Began 7/1/2016
Medical Appeals - UAMS			
- Physician Appeals	$150.00	Per Physician Appeal	No payment made in 2016
Pharmacy Prior Authorization - EBRx			
- Prior Authorization & on-site pharmacist	$1.16	Per Employee Per Month	
Pharmacy Appeals			
Physician Appeals - American Health Holding Inc.	$150.00	Per Physician Appeal	Ends 2/28/17, Pd $1,160 in 2016
Physician Appeals - ActiveHealth Management, Inc.	$100.00	Per Physician Appeal	Begins 3/1/17
Medical Utilization Review - American Health Holding, Inc.	$0.97	Per Member Per Month	Ends 2/28/17
Condition Management - American Health Holding, Inc.	$3.22	Per Member Per Month	Ends 2/28/17
Case Management - American Health Holding, Inc.	$0.89	Per Member Per Month	Ends 2/28/17
Medical Utilization/Condition Mgmt/Case Management- ActiveHealth	$3.58	Per Member Per Month	Begins 3/1/17
ACHI	$0.25	Per Member Per Month	
Employee Assistance Program - ComPsych	$1.73	Per Employee Per Month	
Health Savings Account (HSA) Administrator -WageWorks	$1.90	Per Enrolled Per Month	Ended 12/31/2016
Flexible Spending Account (FHSA) Administrator - WageWorks	$3.25	Per Enrolled Per Month	Ended 12/31/2016
COBRA admin fee - WageWorks	$0.20	Per Active Ee Per Month	Ended 12/31/2016
Health Savings Account (HSA) Administrator -DataPath	$2.25	Per Enrolled Per Month	Effective 1/1/2017
Flexible Spending Account (FHSA) Administrator - DataPath	$2.25	Per Enrolled Per Month	Effective 1/1/2017
COBRA admin fee - DataPath	$0.38	Per Active Ee Per Month	Effective 1/1/2017
Office of Health Information Technology (Actives and NME Retirees)	$0.20	Per Employee Per Month	

Appendix D. - Incurred Claims by Vendor and Plan

			CY 2016	CY 2017	PMPM 2016	PMPM 2017	% Change
TOTAL ($000s)		Actual Incurred Claims	$ 275,015	$ 278,699	$ 390.30	$ 386.16	(1.1%)
		Projected	313,574	314,812	445.52	443.82	
		Actual vs. Projected	$ (38,559)	$ (36,113)	$ (55.22)	$ (57.66)	
Medical	All	Actual Incurred Claims	$ 200,402	$ 208,273	$ 194.51	$ 195.34	0.4%
		Projected	224,026	224,595	202.46	209.04	
		Actual vs. Projected	$ (23,624)	$ (16,322)	$ (7.95)	$ (13.70)	
	Premium	Actual Incurred Claims	$ 95,931	$ 94,261	$ 305.01	$ 314.94	3.3%
		Projected	121,635	107,860	258.09	242.09	
		Actual vs. Projected	$ (25,704)	$ (13,599)	$ 46.92	$ 72.85	
	Classic	Actual Incurred Claims	$ 79,656	$ 85,876	$ 152.83	$ 156.31	2.3%
		Projected	76,979	86,664	163.34	194.52	
		Actual vs. Projected	$ 2,677	$ (788)	$ (10.51)	$ (38.21)	
	Basic	Actual Incurred Claims	$ 4,563	$ 5,374	$ 71.49	$ 69.67	(2.5%)
		Projected	2,894	5,201	95.61	103.97	
		Actual vs. Projected	$ (219,463)	$ (219,221)	$ (24.12)	$ (34.30)	
	ME	Actual Incurred Claims	$ 20,252	$ 22,761	$ 154.87	$ 162.15	4.7%
		Projected	22,518	24,871	168.47	186.56	
		Actual vs. Projected	$ (2,266)	$ (2,110)	$ (13.60)	$ (24.41)	
Rx	All	Actual Incurred Claims	$ 51,162	$ 52,048	$ 56.87	$ 56.22	(1.1%)
		Projected	57,908	57,356	59.65	58.48	
		Actual vs. Projected	$ (6,746)	$ (5,308)	$ (2.78)	$ (2.26)	
	Premium	Actual Incurred Claims	$ 36,331	$ 34,224	$ 115.51	$ 114.35	(1.0%)
		Projected	43,678	42,006	92.68	94.28	
		Actual vs. Projected	$ (7,347)	$ (7,782)	$ 22.83	$ 20.07	
	Classic	Actual Incurred Claims	$ 14,114	$ 17,116	$ 27.08	$ 31.15	15.0%
		Projected	13,941	14,657	29.72	30.21	
		Actual vs. Projected	$ 6,311	$ 8,104	$ (2.64)	$ 0.94	
	Basic	Actual Incurred Claims	$ 717	$ 708	$ 11.23	$ 9.18	(18.3%)
		Projected	288	693	9.53	13.86	
		Actual vs. Projected	$ 429	$ 15	$ 1.70	$ (4.68)	
Expenses & Other	All	Actual Incurred Claims	$ 23,451	$ 18,378	$ 33.28	$ 25.46	(23.5%)
		Projected	31,641	32,860	44.96	46.33	
		Actual vs. Projected	$ (8,190)	$ (14,482)	$ (11.68)	$ (20.87)	

Incurred claims will differ slightly from financial statement claims paid plus change in IBNR.

Appendix E. - Enrollment Details: Actives

Average for Calendar Year		2016	2017			2018	
		Actual	Jul-16	Jun-17	Actual	Jun-17	Jan-18
Premium	Single	16,248	15,959	15,542	15,297	14,620	14,806
	Employee/Spouse	322	318	292	284	273	271
	Employee/Child(ren)	2,163	2,044	2,153	2,179	1,989	2,122
	Family	452	428	433	442	407	436
	Total	**19,185**	**18,749**	**18,419**	**18,202**	**17,289**	**17,635**
	Member Counts	24,966	24,253	24,083	23,934	22,549	23,230
Classic	Single	12,990	12,875	13,240	13,370	13,633	13,807
	Employee/Spouse	1,289	1,288	1,378	1,357	1,394	1,482
	Employee/Child(ren)	4,785	4,687	5,059	5,157	5,163	5,432
	Family	2,935	2,885	3,075	3,108	3,136	3,302
	Total	**21,999**	**21,734**	**22,753**	**22,991**	**23,327**	**24,023**
	Member Counts	41,033	40,436	42,793	43,293	43,760	45,548
Basic	Single	2,518	2,915	2,903	2,984	3,535	3,152
	Employee/Spouse	179	184	211	216	187	241
	Employee/Child(ren)	299	343	369	390	366	434
	Family	313	320	356	360	308	371
	Total	**3,309**	**3,763**	**3,839**	**3,950**	**4,396**	**4,198**
	Member Counts	4,970	5,543	5,770	5,931	6,158	6,315
TOTAL	Single	31,756	31,748	31,685	31,651	31,788	31,766
	Employee/Spouse	1,791	1,791	1,881	1,857	1,854	1,993
	Employee/Child(ren)	7,247	7,074	7,581	7,726	7,519	7,989
	Family	3,700	3,634	3,864	3,910	3,852	4,109
	Total	**44,493**	**44,246**	**45,011**	**45,143**	**45,012**	**45,857**
	Member Counts	70,969	70,231	72,646	73,158	72,467	75,093

Appendix E. - Enrollment Details: Retirees

Average for Calendar Year		2016	2017			2018	
Projection performed in (if applicable)		Actual	Jul-16	Jun-17	Actual	Jun-17	Jan-18
Retirees Non-Medicare Eligible (NME) Premium	Retiree Only	933	1,058	780	727	778	614
	Retiree + NME Spouse	46	57	38	36	38	27
	Retiree + Child(ren)	11	12	9	9	9	9
	Retiree + NME Spouse + Child(ren)	5	5	6	6	6	5
	Retiree + ME Spouse	80	84	69	62	68	52
	Retiree + ME Spouse + Child(ren)	1	1	1	2	2	1
	Total	**1,076**	**1,218**	**903**	**841**	**901**	**708**
Classic	Retiree Only	1,639	1,772	1,722	1,732	1,799	1,778
	Retiree + NME Spouse	237	257	238	241	252	246
	Retiree + Child(ren)	48	49	51	55	53	59
	Retiree + NME Spouse + Child(ren)	50	52	46	44	48	37
	Total	**1,974**	**2,131**	**2,057**	**2,072**	**2,152**	**2,120**
Basic	Retiree Only	227	330	289	307	344	330
	Retiree + NME Spouse	37	49	49	55	59	61
	Retiree + Child(ren)	9	13	13	17	14	23
	Retiree + NME Spouse + Child(ren)	7	14	7	11	8	18
	Total	**280**	**406**	**357**	**390**	**425**	**432**
TOTAL	**NME Retirees**	**3,329**	**3,755**	**3,317**	**3,302**	**3,478**	**3,260**
	NME Member Counts	**3,925**	**4,501**	**1,068**	**3,887**	**4,193**	**3,777**
Retirees Medicare Eligible (ME)	Retiree Only	9,916	10,093	10,685	10,651	11,508	11,461
	Retiree + NME Spouse	71	68	75	77	82	75
	Retiree + Child(ren)	14	15	15	16	15	17
	Retiree + NME Spouse + Child(ren)	2	1	1	1	1	1
	Retiree + ME Spouse	895	933	959	953	1,033	1,024
	Retiree + ME Spouse + Child(ren)	-	-	1	1	0	1
	Total	**10,897**	**11,110**	**11,735**	**11,698**	**12,639**	**12,578**
	ME Member Counts	**11,873**	**12,128**	**12,765**	**12,714**	**13,742**	**13,707**

Appendix F. - Definitions & Methods

Definitions:

Actual: Results based on actual incurred claims and enrollment experience through December 2017, paid through January 2018. Actual incurred reflects an updated estimate of incurred but not recorded (IBNR) claims.

Projected: Projections produced for use in setting annual rates. Details on the assumptions & methods used for Cheiron's 2018 and 2017 projections can be found in our October 24, 2017 (for 2018) and our November 4, 2016 (for 2017) letters to the Executive Director.

Updated Projections: Projections produced in July 2017 by Cheiron, adjusted for actual asset experience through December 2017 and any enrollment changes through January 2018.

Methods:

Updated Projections: Population projections for the remainder of 2018 assume the same population as January 2018. Claims projections for 2018 use the same method as original projections but are adjusted for count changes and associated expected changes in risk characteristics for each plan in accordance with the population change. *Note that the updated projections presented in this report do NOT reflect updated claims experience.*

Incurred Claims: Based on service dates through December 31, 2017 and process dates through January 31, 2018. Claims are before subtracting retiree drug subsidy. A blend of methods based on actuarial judgment was used to estimate the incurred claims by month.

IBNR (Incurred But Not Recorded) Claim Reserves: Actual Reserves are those certified by Cheiron and effective July 2017. Original and updated Reserve projections are based on expected changes in incurred and paid claims. *Note that any projected IBNR Reserves presented in this report may NOT be used for financial statements.*

Qualification Statements:

Reliance Statement: In preparing our report, we relied without audit, on information (some oral and some written) supplied by the Employee Benefits Division and the Plans' vendors. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Scope: Actuarial computations provided in this report are for purposes of assisting the Trustees in monitoring the Plans' experience. The projections and reserve calculations reported in the enclosed exhibits have been made on a basis consistent with our understanding of the associated Actuarial Standards of Practice. Determinations for purposes other than monitoring the Plans' performance (for example, rate setting, benefit design changes or vendor evaluation) may be significantly different from the results in this report. Actual results will be different than our projections and vary to the extent that the Plan experience differs from the assumptions.

Certification: To the best of our knowledge, this report has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Actuarial Standards of Practice as Promulgated by the Actuarial Standards Board. We are members of the American Academy of Actuaries, and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. This report does not address any contractual or legal issues. We are neither attorneys nor accountants, and our firm does not provide any legal or tax services or advice.

Third Party Reliance: This report was prepared for the Arkansas State Employees (ASE) and Public School Employees (PSE) Health Benefits Program Trustees for the purposes described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

STATE AND PUBLIC SCHOOL LIFE AND HEALTH INSURANCE BOARD

FEBRUARY 20, 2018

Meeting Objectives

Discover MiMedx as a leading Biopharmaceutical Company

Demonstrate value of patented differentiation that leads to positive patient outcomes

Dialogue regarding alignment with the Emerging Therapies Act Pilot

Discuss the merits of amniotic tissue based technology

MiMedx® Overview

MiMedx® is a biopharmaceutical company developing, manufacturing and marketing regenerative biologics utilizing human placental allografts for multiple sectors of healthcare.

"Innovations in Regenerative Medicine" is the framework behind our mission to provide physicians with products and tissues to help the body heal itself.

Literature shows amniotic membrane enhances healing:[1, 2, 3]

- ✓ Immunologically privileged
- ✓ Modulates inflammation
- ✓ Reduces scar tissue formation
- ✓ Contains essential growth factors

1,000,000 allografts distributed to date with **no adverse reactions** attributed to our products†

†As of September 1, 2017

>40 Peer Reviewed, Published Scientific and Clinical Studies

[1]Litwiniuk M1, Grzela T "Amniotic membrane: New concepts for an old dressing." Wound Repair Regen. 2014 Jul;22(4):451-6. (22)4. 2014 Jul. pp 451-6.
[2]Akle, C; Adinolfi, M; Welsh, K; Leibowitz, S; and McColl, I "Immunogenicity of Human Amniotic Epithelial Cells after Transplantation into Volunteers." The Lancet. (318)8254. 7 November 1981. pp 1003-1005.
[3]Parolini, O et alHuman Term Placenta as a Therapeutic Agent: From the First Clinical Applications to Future Perspectives, in Human Placenta: Structure and Development, Circulation and Functions. Pregnancy and Infants: Medical, Psychological and Social Issues Series. Nova Biomedical Books, 2010.

FDA Regulatory Classifications for Tissue, Cell Based Products, and Other

351 HCT/Ps (Human Cell Tissue/ Products)	Human Tissue (Allograft) or Cells	May be more than minimally manipulated, and/ or may or may not be for homologous use. Pre-market clearance or approval required. Requires FDA Current Good Manufacturing Practice (cGMP).
361 HCT/Ps (Human Cell Tissue/ Products)	Human Tissue (Allograft) or Cells	Minimally manipulated, intended for homologous use. No clearance or pre-market approval required. Requires FDA Good Tissue Practices (GTP)
510(k) Clearance	Medical Device (Example: decellularized human dermis, xenografts, collagen dressings, bovine filler)	Requires FDA Substantial Equivalence, shorter submission and less required verses PMA. Based on predicate device. Requires FDA Current Good Manufacturing Practice (cGMP)
Premarket Approval (PMA)	Medical Device (Example: human living skin substitutes, bone substitute)	Requires extensive FDA Pre-Market approval process, including comprehensive clinical trials. Requires FDA Current Good Manufacturing Practice (cGMP)
Biologic License Application (BLA)	Biological product (Example: Section 351 HCT/Ps, cell products, such as those containing hematopoietic progenitor cells, vaccines, and blood components)	Requires extensive FDA Investigational New Drug (IND) and BLA approval process, including comprehensive pre-clinical and clinical trials. Requires compliance to FDA Current Good Manufacturing Practice (cGMP)
New Drug Application (NDA)	(Example: living stem cells non-autologous, second degree relative, or autologous stem cells that are expanded in the laboratory)	Requires extensive FDA Investigational New Drug (IND) and BLA approval process, including comprehensive pre-clinical and clinical trials. Requires FDA Current Good Manufacturing Practice (cGMP)

United States Pharmacopeia Monograph

USP and the National Formulary (NF) are the public pharmacopeia standards for drug substances, dosage forms, compounded preparations, excipients, dietary supplements and medical devices.

- The "Tissue Human Amnion Chorion Membrane Dehydrated" USP Monograph outlines the definition of the products covered, as well as the specification, packaging, storage, and labeling requirements with which a product must conform. Validated tests, procedures for the tests, and acceptance criteria make up the specification.
- All products must have the stipulated strength, quality, and purity if they expect to conform to the requirements of this Monograph.

MiMedx dHACM is the first human amnion/chorion dehydrated membrane to meet requirements of the United States Pharmacopeia (USP) monograph.

Source: http://phx.corporate-ir.net/phoenix.zhtml?c=213465&p=irol-newsArticle&ID=2219390

Source of MiMedx PURION® Processed Amnion and Chorion Membranes

LIVE BIRTH Via Planned C-section

Microbiological and Viral Testing of Donor Tissue and Blood

purion® process

PURION® Processed Amnion/Chorion Grafts and injectables

MiMedx

MiMedx is a Biopharmaceutical Company with an Extensive Product Portfolio

Sheet dHACM:
Flagship bioactive Amnion/ Chorion grafts containing 226 proteins and growth factors with proven enhanced healing power

- Smaller wounds
- Various surgical applications
- As a barrier membrane

Micronized dHACM:
Same dHACM in an injectable configuration

- Smaller wounds
- Various surgical applications

Umbilical Cord Products:
Provide a protective environment for the healing process.

- Smaller wounds requiring a graft that can hold a stitch
- Longer site coverage timeframe
- When a thicker graft is needed for coverage/ padding

Placental Based:
Our NEW bioactive placental tissues containing Growth Factors found in PURION® Processed tissues that modulate the activity of the recruited cells to enhance healing **+** an extracellular matrix (ECM) that provides a scaffold for recruited cells to attach, populate, and proliferate.

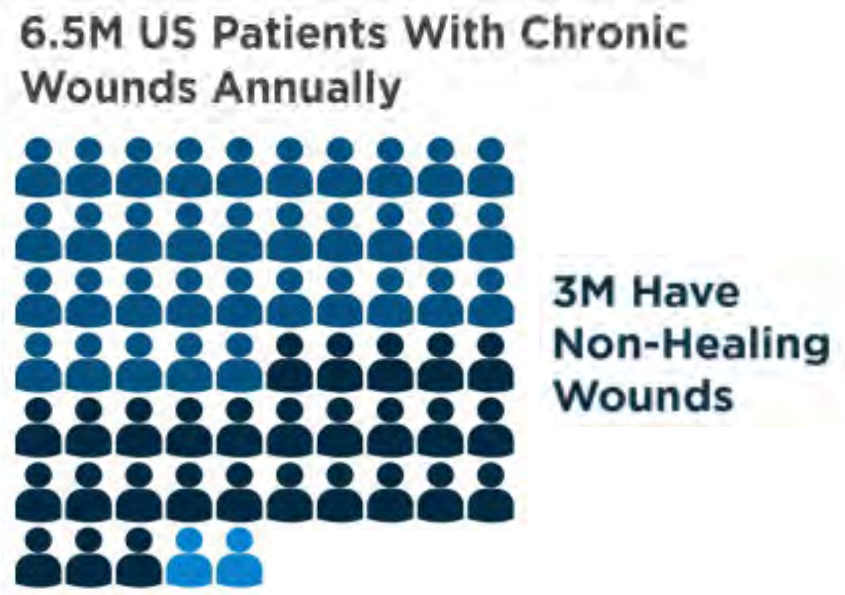
- Larger and uneven surface areas >25cm^2
- NOT injectable

CLINICAL EFFICACY
PATIENT OUTCOMES

MiMedx

Chronic Wound Market

1.4M Chronic DFU/VLU Wounds



Under 200K are Treated with a Skin or Dermal Substitute

2016 U.S. Market Facts - Annual Cost of Treating Chronic Wounds in the U.S. is $25 Billion

https://app.smarttrak.com/markets/qs/302
https://app.smarttrak.com/markets/qs/6599

=100K Patients

SmartTRAK Business Intelligence

SB464.001

Diabetes in Arkansas:

We are focused on the 364,000 people in Arkansas who live with diabetes*

- Approximately 363,781 people in Arkansas, or 14.8% of the adult population, have diabetes.
- Every year an estimated 25,000 people in Arkansas are diagnosed with diabetes.
- People with diabetes have medical expenses approximately 2.3 times higher than those who do not have diabetes.
- Total direct medical expenses for diagnosed and undiagnosed diabetes, prediabetes and gestational diabetes in Arkansas was estimated at $2.3 billion in 2012.
- In addition, another $798 million was spent on indirect costs from lost productivity due to diabetes.

*American Diabetes Association
http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/arkansas.pdf

Diabetic Patients with Non-healing Wounds

- Mean one year cost from a health care public payer perspective was $44,200 for diabetic foot ulcer (DFU), and $11,000 for leg ulcer (LU)[1]
- 33% of the cost of diabetes directly linked to the care of lower extremity complications[2,3]
- The majority of non-traumatic lower limb amputations can be avoided with education, monitoring and early treatment. [4]

[1]Chan; "Cost-of-illness studies in chronic ulcers: a systematic review." Journal of Wound Care Vol 26. No.4, April 2017
[2]Rogers LC, Lavery LA, Armstrong DG. The right to bear legs – an amendment to healthcare: How preventing amputations can save billions for the US health-care system. J Am Podiatr Med Assn 2008;98:3-5
[3]Driver VR, Lavery LA. The costs of the diabetic foot: The economic case for the limb salvage team. J Vasc Surg
[4]American Diabetes Association http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/arkansas.pdf

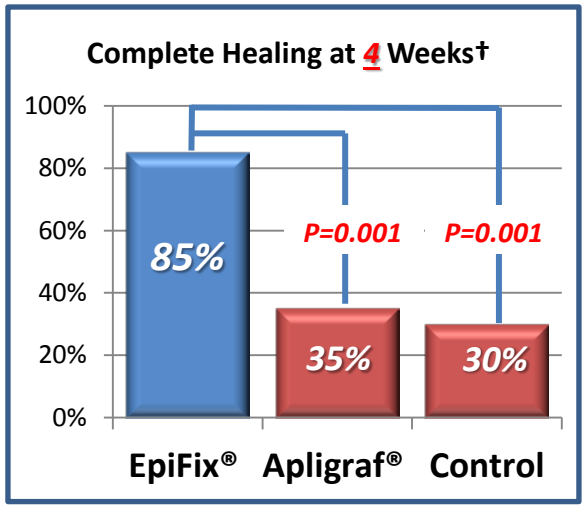
Clinical Efficacy

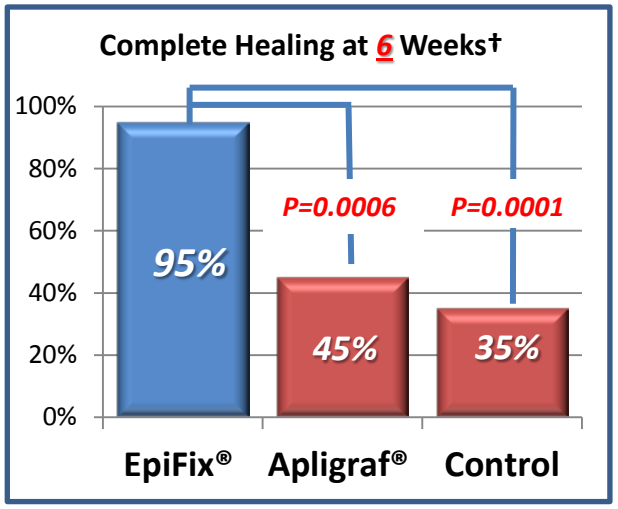
Studies	EpiFix® Results
DFU RCT Study[1]	Complete wound closure**: 92% at 6 weeks** (p=.001)
DFU RCT - Crossover Study[2]	Complete wound closure: **91% in 10 weeks** (p=.001)
DFU RCT - Long Term Follow Up[3]	**94% Remained Healed 9-12 months** after initial closure
DFU RCT - Weekly vs. Biweekly Application of dHACM[4,]	Overall Complete wound closure: **92.5% healing in 12 weeks** *Mean time to healing:* - Weekly applications: 2.4 weeks - Biweekly applications: 4.1 weeks
DFU RCT EpiFix vs. Apligraf® vs SOC Study[5]	Complete wound closure: **85% at 4 weeks, 95% at 6 weeks**
VLU Surrogate Marker Study[6]	**62% of Pts achieved ≥ 40% wound closure at 4 weeks**
VLU Multi-center RCT[7]	Complete wound closure: **60% at 12 weeks, 71% at 16 weeks**

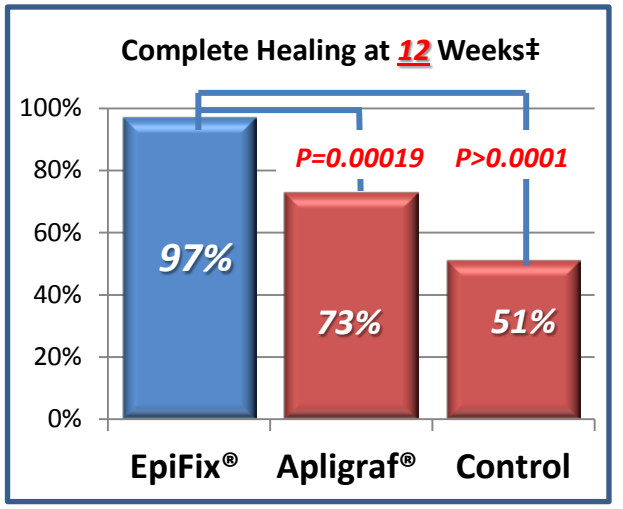
[1] Zelen CM, Serena TE, Denoziere G, Fetterolf DE. A prospective randomized comparative parallel study of amniotic membrane wound graft in the management of diabetic foot ulcers. Int Wound J. 2013 Oct;10(5):502-7. [2] Zelen CM. An evaluation of dehydrated human amniotic membrane allografts in patients with DFUs. J Wound Care. 2013 Jul;22(7):347-8, 350-1.[3] Zelen CM, Serena TE, Fetterolf DE. Dehydrated human amnion/chorion membrane allografts in patients with chronic diabetic foot ulcers: a long-term follow-up study. Wound Medicine. 2014 Feb;4:1-4. [4] Zelen CM, Serena TE, Snyder RJ. A prospective, randomized comparative study of weekly versus biweekly application of dehydrated human amnion/chorion membrane allograft in the management of diabetic foot ulcers. Int Wound J. 2014 Apr;11(2):122-8. [5] Zelen CM, Gould L, Serena, TE, Carter MJ, Keller J, Li WW. A prospective, randomized, controlled, multi-centre comparative effectiveness study of healing using dehydrated human amnion/chorion membrane allograft, bioengineered skin substitute, or standard of care for treatment of chronic diabetic lower extremity ulcers. Int Wound J. 2014 Nov 26. doi: 10.1111/iwj.12395. [Epub ahead of print] [6]Serena TE, Carter MJ, Le TL, Sabo MJ, DiMarco DT. A multicenter, randomized, controlled clinical trial evaluating the use of dehydrated human amnion/chorion membrane allografts and multilayer compression therapy vs. multilayer compression therapy alone in the treatment of venous leg ulcers. Wound Repair Regen. 2014 Nov-Dec;22(6):688-93. [7]Bianchi C, Cazzell S, Vayser D, Reyzelman A, Dosluoglu H, Tovmassian G, and the EpiFix VLU Study Group Farrer D, Taffe E, Loveland L, O'Connor D, Baer M, Dahle S. A Multi-Centre Randomised Controlled Trial Evaluating the Efficacy of Dehydrated Human Amnion/Chorion Membrane (EpiFix) Allograft for the Treatment of Venous Leg Ulcers. Int Wound J 2017; doi: 10.1111/iwj.12843

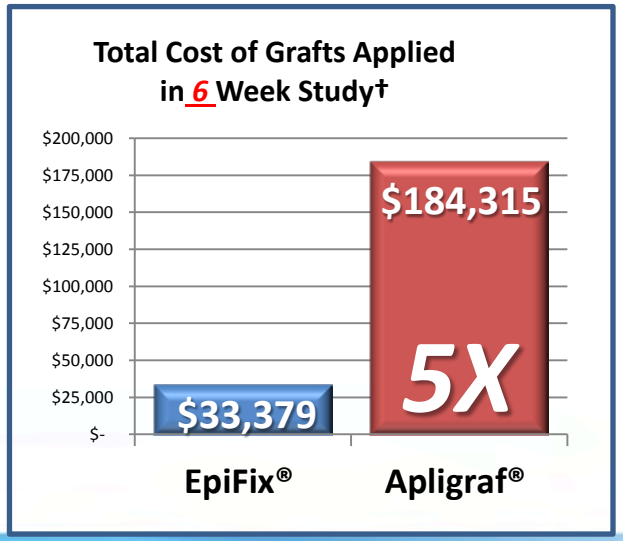
DIABETIC FOOT ULCER STUDIES

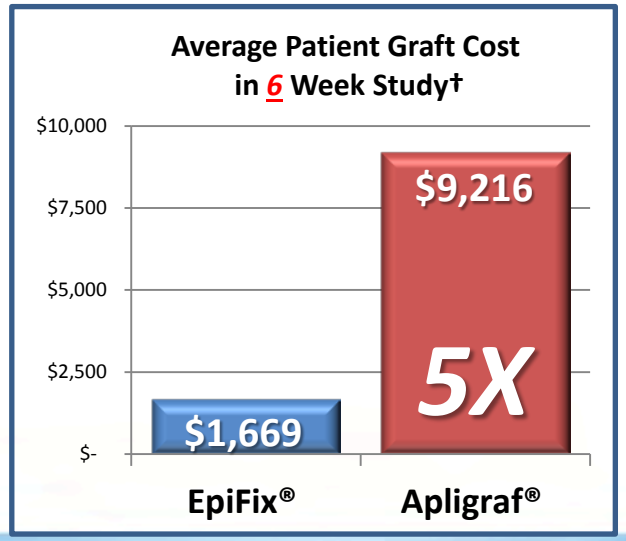
DFU Trial Showed Superiority of EpiFix® over both Apligraf® and Standard Care for Complete Healing at 4, 6 and 12 Weeks

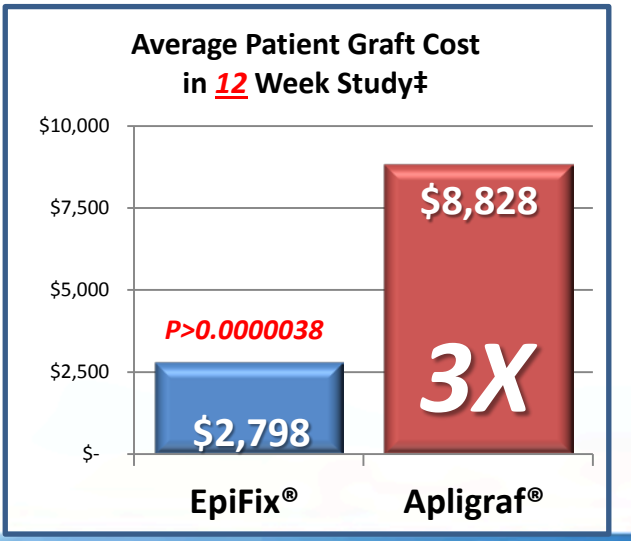










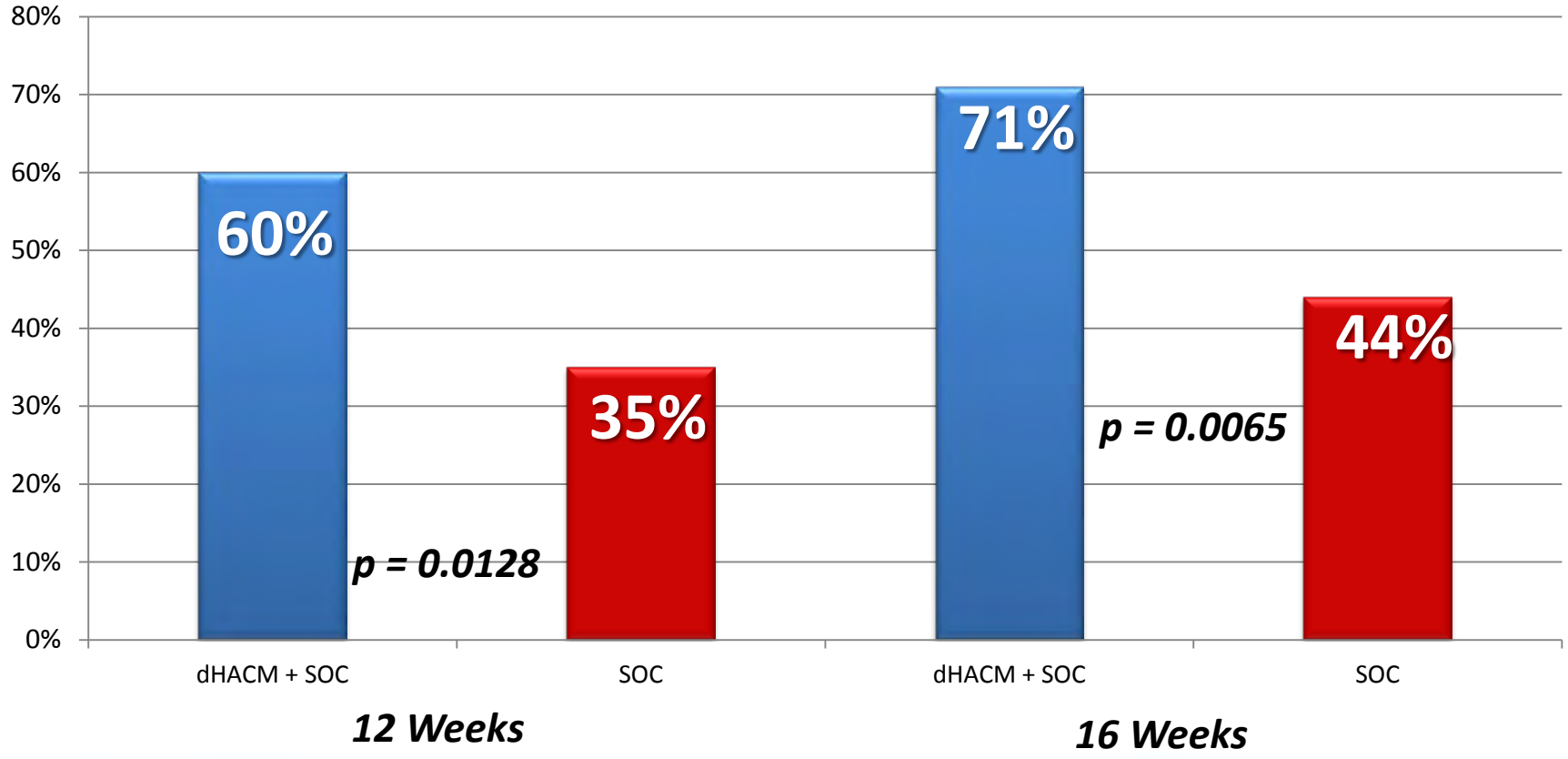


† Zelen CM, Gould L, Serena TE, Carter MJ, Keller J, Li WW. A prospective, randomised, controlled, multi-centre comparative effectiveness study of healing using dehydrated human amnion/chorion membrane allograft, bioengineered skin substitute or standard of care for treatment of chronic lower extremity diabetic ulcers. Int Wound J. 2015 Dec;12(6):724-32.
‡ Zelen CM, Serena TE, Gould L, Le L, Carter MJ, Keller J, Li WW. Treatment of chronic diabetic lower extremity ulcers with advanced therapies: a prospective, randomised, controlled, multi-centre comparative study examining clinical efficacy and cost. Int Wound J. 2015 Dec 23. doi: 10.1111/iwj.12566. [Epub ahead of print]

VENOUS LEG ULCER STUDIES

MiMedx

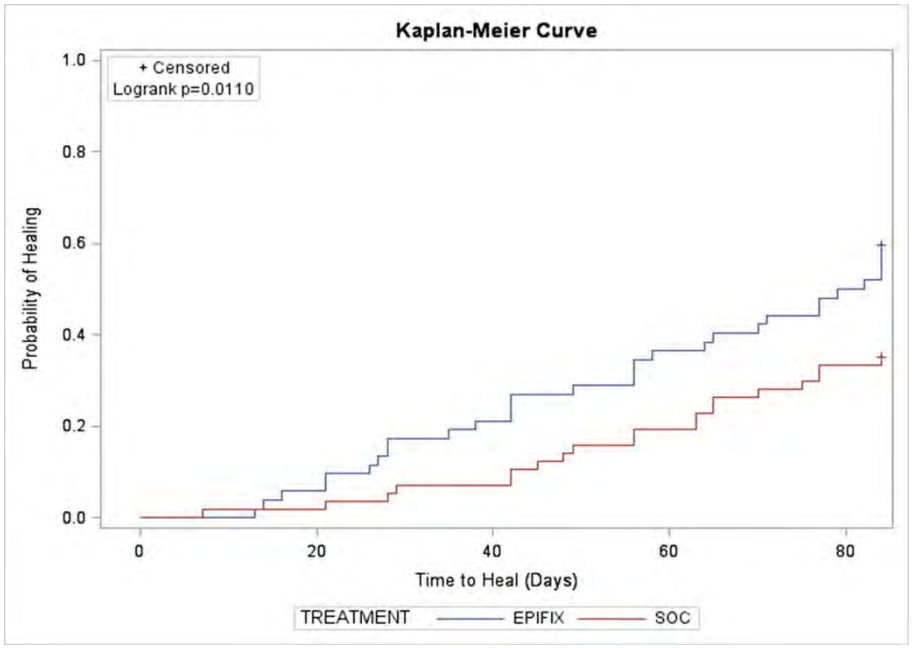
EpiFix + SOC vs. SOC Healing Rates at 12 Weeks & 16 Weeks



EpiFix group received up to 12 weekly applications of the EpiFix allograft, in addition to SOC. Allograft was placed on the wound after sharp/mechanical debridement as deemed necessary to achieve a well vascularized, stable wound bed with minimal exudate. Non-adherent moist wound dressings were placed over the allograft followed by dry gauze wrap and multi-layer compression.

Bianchi C, Cazzell S, Vayser D, Reyzelman A, Dosluoglu H, Tovmassian G, and the EpiFix VLU Study Group Farrer D, Taffe E, Loveland L, O'Connor D, Baer M, Dahle S. A Multi-Centre Randomised Controlled Trial Evaluating the Efficacy of Dehydrated Human Amnion/Chorion Membrane (EpiFix) Allograft for the Treatment of Venous Leg Ulcers. Int Wound J 2017; doi: 10.1111/iwj.12843

EpiFix Demonstrated Superior wound healing trajectory at 12 Weeks



- Superior wound healing trajectory for EpiFix compared to VLUs treated with SOC alone
- Patients were 2.26x more likely to heal with EpiFix over SOC alone at 12 weeks (2x within 16 weeks)

Bianchi C, Cazzell S, Vayser D, Reyzelman A, Dosluoglu H, Tovmassian G, and the EpiFix VLU Study Group Farrer D, Taffe E, Loveland L, O'Connor D, Baer M, Dahle S. A Multi-Centre Randomised Controlled Trial Evaluating the Efficacy of Dehydrated Human Amnion/Chorion Membrane (EpiFix) Allograft for the Treatment of Venous Leg Ulcers. Int Wound J 2017; doi: 10.1111/iwj.12843

We believe using EpiFix in combination with existing Standard of Care treatments, can enhance the treatment and safe healing of chronic, non-healing lower extremity wounds.

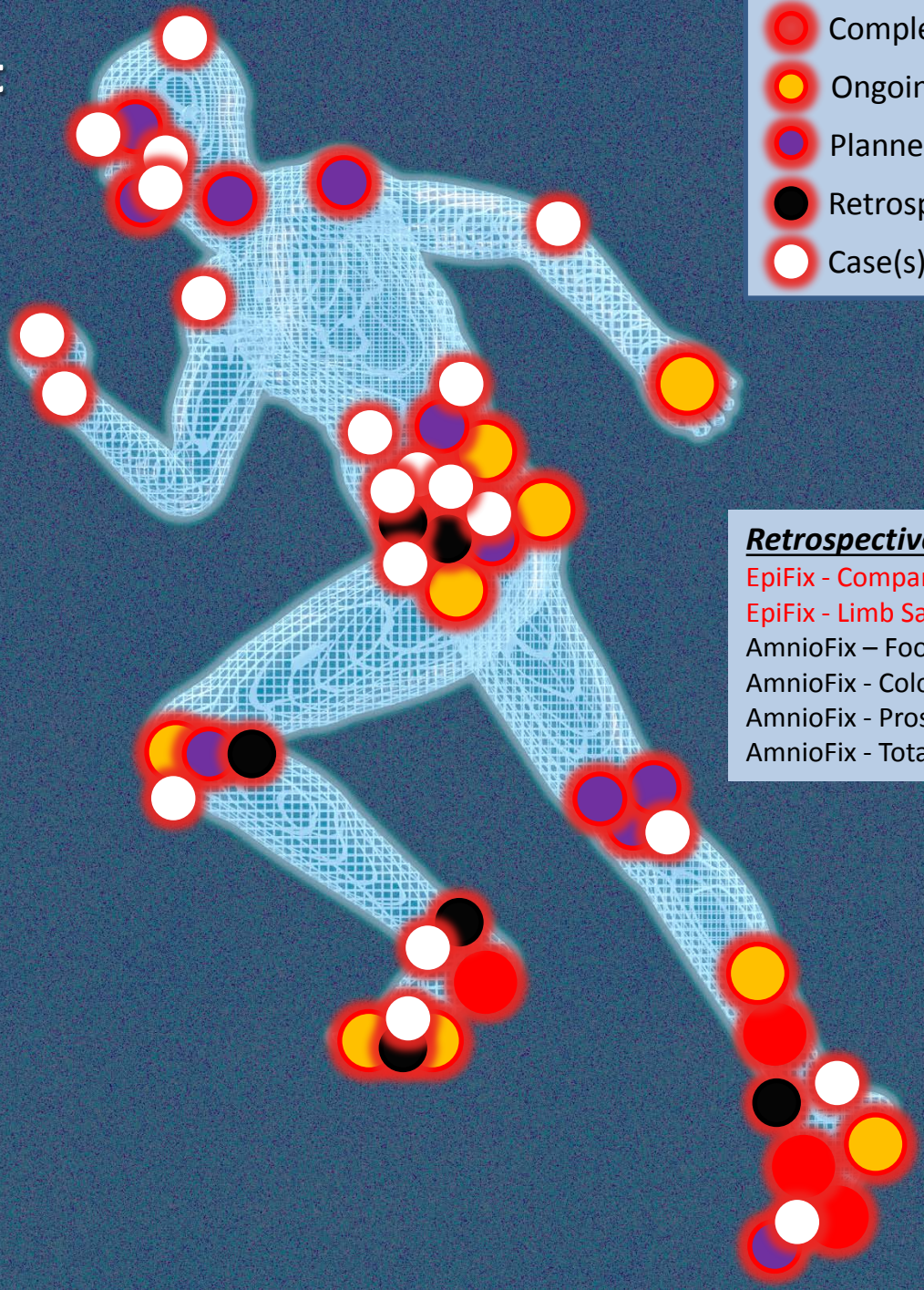
Complex Wounds: Exposed Bone/Tendon

dHACM has been used for both primary closure and as an important adjunct in the treatment of complex wounds.

Safety and Testing

Major Process Step	Criteria that Ensures Tissue Safety
Donor Screening	Performed per 21 CFR 1271 domestically.
Infectious Disease Testing	Negative results for all FDA approved and **CLIA Certified** tests that includes HIV, Hepatitis B and C, Syphilis, and Human T-cell lymphotropic virus (HTLV)
PURION® Process	A validated process with proven Bacterial/Spore reduction capabilities that range from 1.4 –5.6 Logs
Terminal Sterilization of all grafts	A validated process per **ISO 11137** standards providing at least a 10^{-6}SAL with irradiation dose monitoring linked to the release of every tissue distributed
Double sterile barrier product packaging	A validated process per FDA recognized **ASTM D4169** standards that ensures sterility is maintained post distribution

Clinical Commitment



- Completed Level I Studies
- Ongoing Level I Studies
- Planned Level I Studies
- Retrospective Studies
- Case(s)/ Series

Completed Level I Studies

EpiFix® - Diabetic Foot Ulcer
EpiFix - Comparative DFU Study
EpiFix - Venous Leg Ulcer
EpiFix - Venous Leg Ulcer
AmnioFix® - Plantar Fasciitis

Ongoing Level I Studies

EpiFix - Diabetic Foot Ulcer
EpiFix - Pressure Ulcers
AmnioFix - Spine
AmnioFix - Prostatectomy
AmnioFix - Plantar Fasciitis
EpiCord® - Diabetic Foot Ulcer
AmnioFix - Ortho Knee
EpiBurn® - Burns

Planned Level I Studies

EpiFix - Adult Facial Burns
EpiFix - Pediatric Facial Burns
AmnioFix - ACL Repair
AmnioFix - Head and Neck
AmnioFix - Partial Nephrectomy
AmnioCord® - Hallux Rigidus
AmnioCord - Supraspinatus Repair
OrthoFlo® - Early OA
OrthoFlo - Gluteal Tendinopathies
OthroFlo - Knee (1)
OrthoFlo - Knee (2)

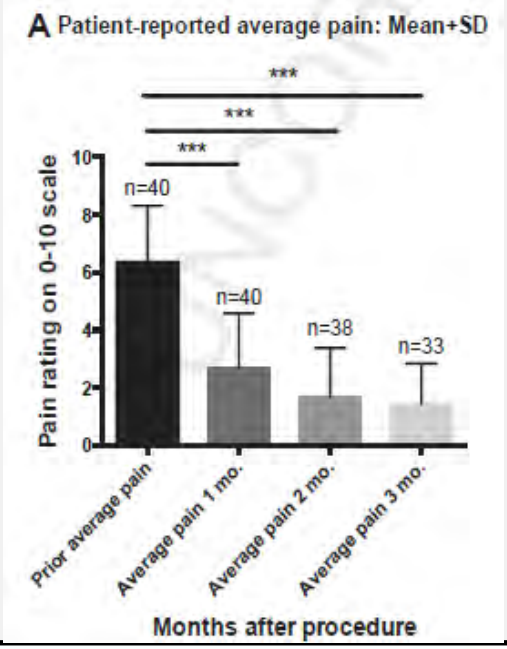
Retrospective Studies

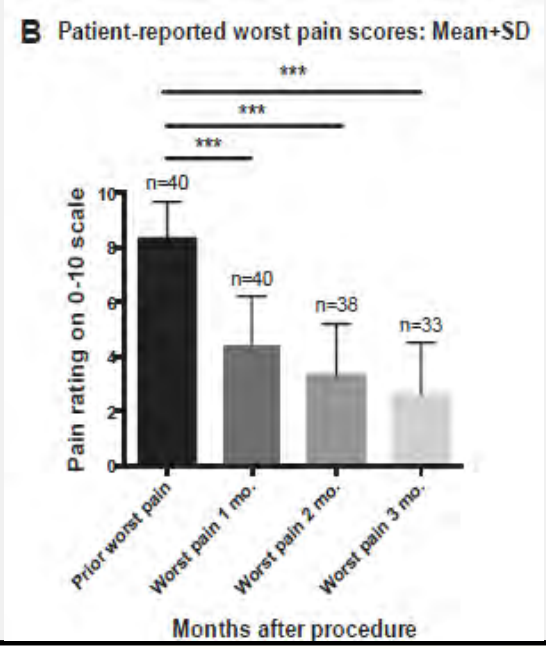
EpiFix - Comparative Effectiveness
EpiFix - Limb Salvage
AmnioFix – Foot and Ankle
AmnioFix - Colon
AmnioFix - Prostatectomy
AmnioFix - Total Knee Arthroplasty

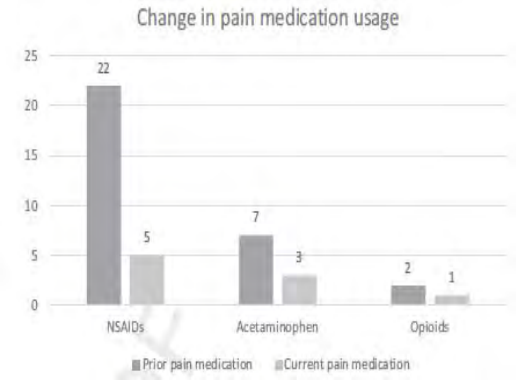
AmnioFix® Injectable Data

Multiple cases/studies completed or underway

Gellhorn and Han: ***The Use of Dehydrated Human Amnion/Chorion Membrane Allograft Injection for the Treatment of Tendinopathy or Arthritis: A case Series Involving 40 Patients****







*Physical Medicine and Rehabilitation. 2017 doi10.1016/j.pmrj.2017.04.011

SUMMARY

MiMedx Value Proposition

- ✓ **Promotes Healing** - Scientific data shows dHACM ability to draw stem cells toward the site to modulate inflammation, reduce pain and accelerate healing
- ✓ **Superior Published Clinical Data** - 11 Randomized Control Trials (RCTs) showing statistical significance
- ✓ **Proprietary PURION Process** preserves 226+ different growth factors
- ✓ **Patient Safety -** Terminal Sterilization
- ✓ **USP Monograph** - Rigor in processes ensure consistent product quality
- ✓ **Storage and Ease of use** - Ambient conditions with 5 year shelf life

THANK YOU

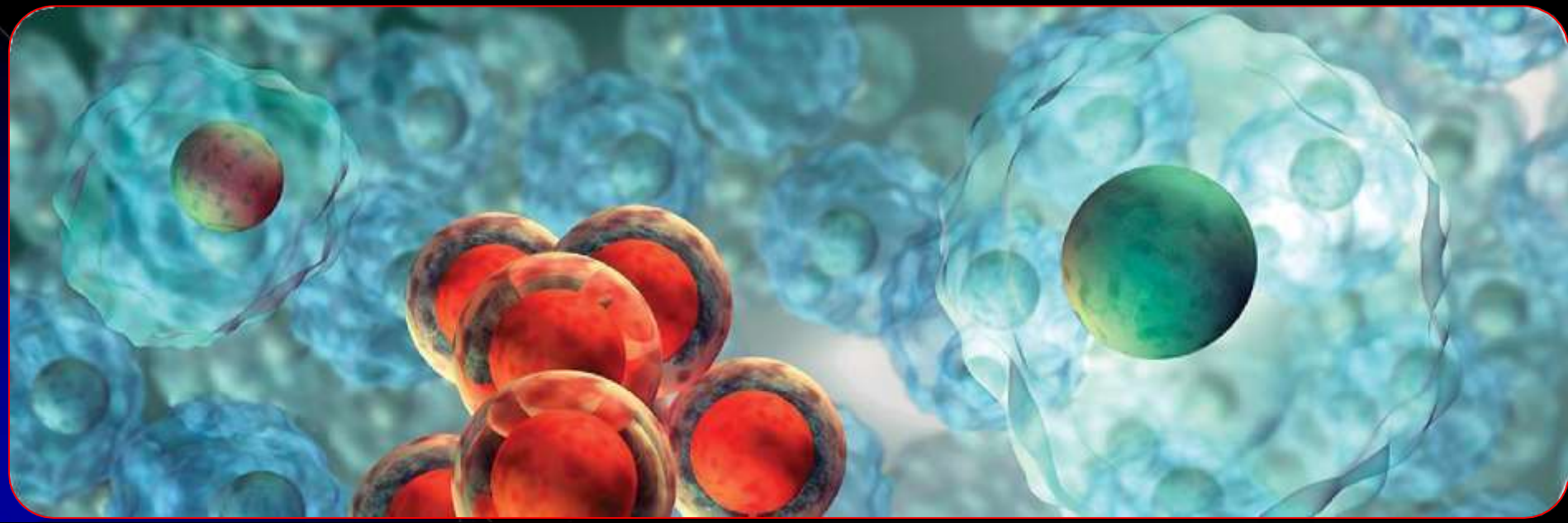
Regenerative Medicine is now a first line treatment to avoid or delay Pharmacological or Surgical treatments

February 20, 2018

Using the Body's Natural Healing Process

PRESENTATION

Employee Benefits Division
THE STATE AND PUBLIC
SCHOOL LIFE AND
HEALTH INSURANCE BOARD



Press Release

Governor Signs "Emerging Therapies Act of 2017"

Pilot Study will allow Regenerative Injection Therapies to be covered on State Employee and Teacher health plans

Immediately after signing of the bill into law in the Governor's office at the Arkansas State Capitol, left to right, State Representative Scott Baltz, State Representative Joe Ferrer, Arkansas Governor Asa Hutchinson, Morgan Pile, and Dr. David Harshfield M.D. (Medical Director Arkansas Institute of Regenerative Medicine, Chairman International Cellular Medicine Society IRB and member AAOM Board of Directors).

Little Rock, ARK, April 10, 2017:

- The Emerging Therapies Act of 2017 was signed into law by Governor Asa Hutchinson today, empowering the EDB to initiate a pilot program to assess the efficacy providing access to State Employees and Teachers through their health care plans to Regenerative Injection Therapies (RIT) as a treatment of orthopedic conditions.
- Arkansas now leads the country as the first state to adopt a policy to include these emerging therapies in state employee health insurance.

Interventional Cellular Medicine Clinics of Arkansas

ICMC

ICMC affiliated Clinics & Physicians are accessible to patients from all areas of the state.

ICMC Providers are experienced and trained to appropriately assess, treat, manage & provide ongoing guidance to their patients in all areas of regenerative based alternate therapies.

Interventional Cellular Medicine Clinics of Arkansas
ICMC

Program Clinics and Providers will be certified in appropriate protocols and care:

ICMC Physicians are Trained / Certified in Interventional Regenerative Medicine.

Clinics and related protocols are reviewed & certified by Institutional Review Board of the International Cellular Medicine Society.

Dr. David Harshfield, Jr. M.D., M.S.
Medical Director, ICMS

Born in Little Rock, Arkansas

University of Arkansas for Medical Sciences (UAMS)

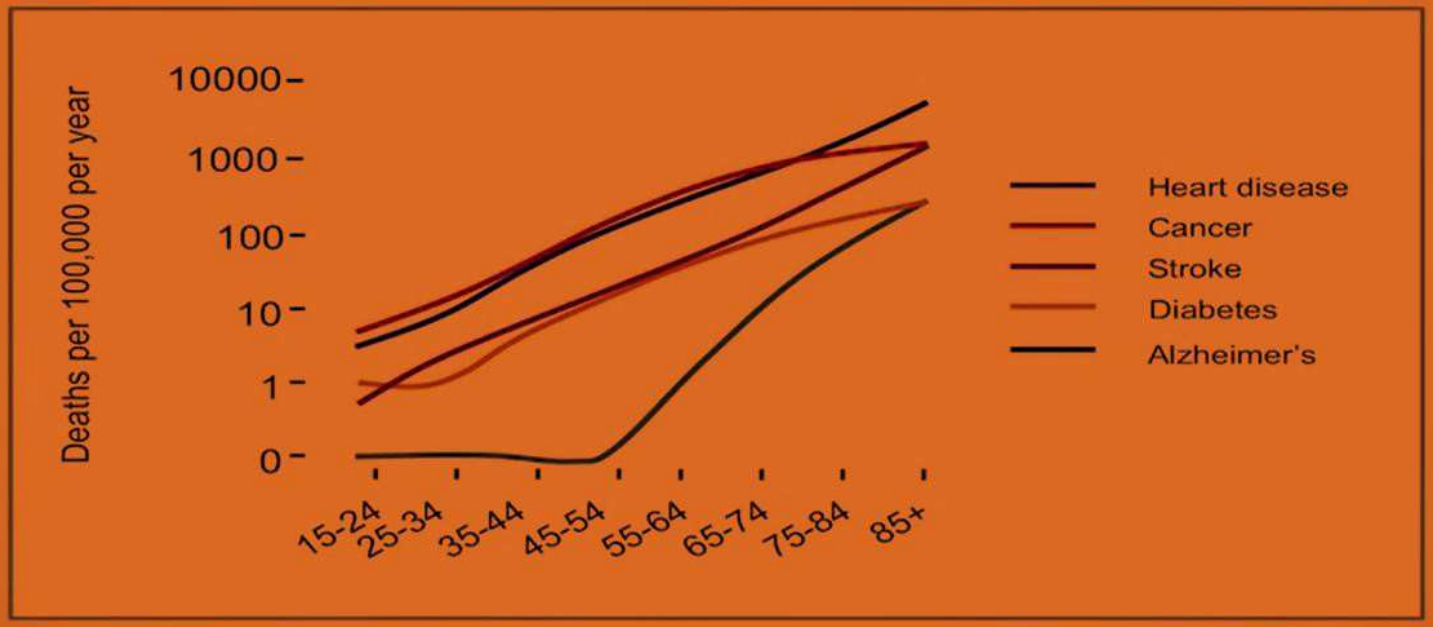
- Medical Doctorate in 1981, graduating with honors.
- Work in the Honor's Program during medical school pertained to stem cell therapy for the treatment of Diabetes leading to a Master's Degree in Physiology and Biophysics.
- Board certified in Radiology in 1981 with multiple fellowships

Dr. David Harshfield, Jr. M.D., M.S.
Medical Director, ICMC

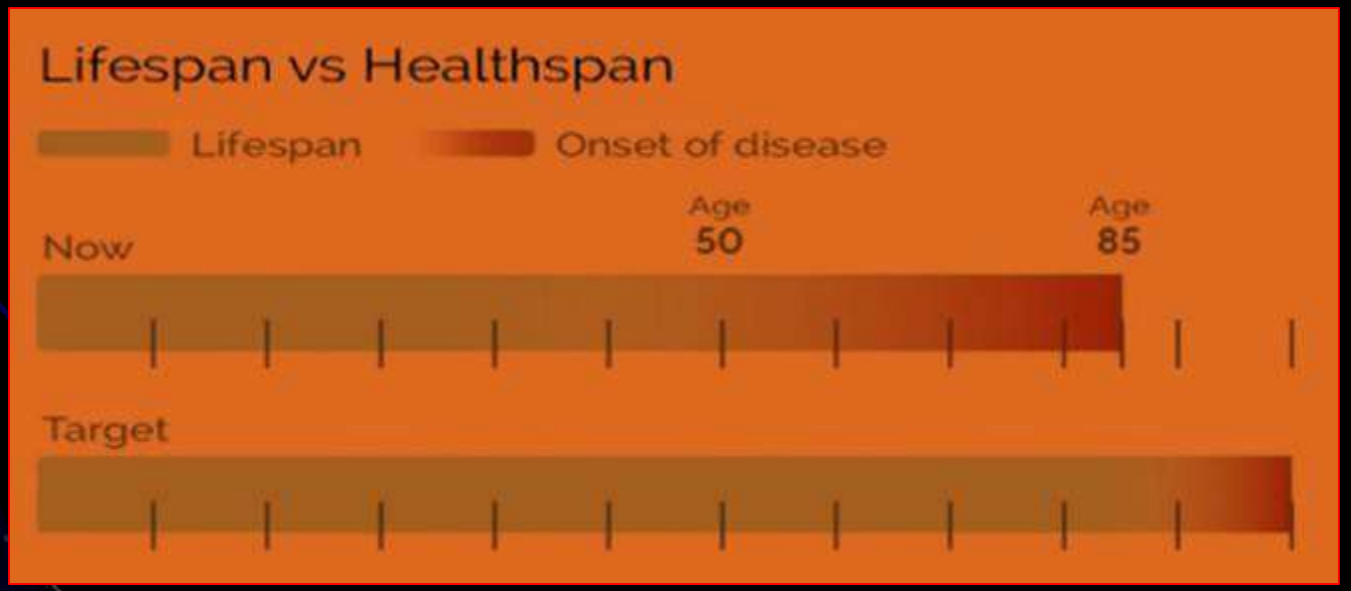
- Fellowships in:
  1. Angiographic and Interventional Radiology
  2. Musculoskeletal Radiology
- Director of Special Procedures at UAMS upon completing fellowship in 1982.
- Chairman of the Institutional Review Board (IRB) for the International Cellular Medicine Society (ICMS), as well as serving on the advisory board for the ICMS.
- Board of Directors member for the American Association of Orthopedic Medicine (AAOM)

The Problem: Aging & Age-Related Diseases

If you survive one disease, you may get the next..!



Lifespan vs Healthspan



The Best way to predict the Future is to

Create it

The Whole Person Approach
Bio-Psycho-Social-Spiritual

The goal of effective healthcare and well-being is to increase quality of life on all levels. Living with chronic pain or illness as well as helping someone in chronic pain can impact a person biologically (physically), psychologically, socially, and spiritually; therefore, the solution must address these areas. The key is ensuring that the needs are being met in these areas for not only the patients but for family members and all parties in the unit.

Patient and Family Centered Functional Medicine

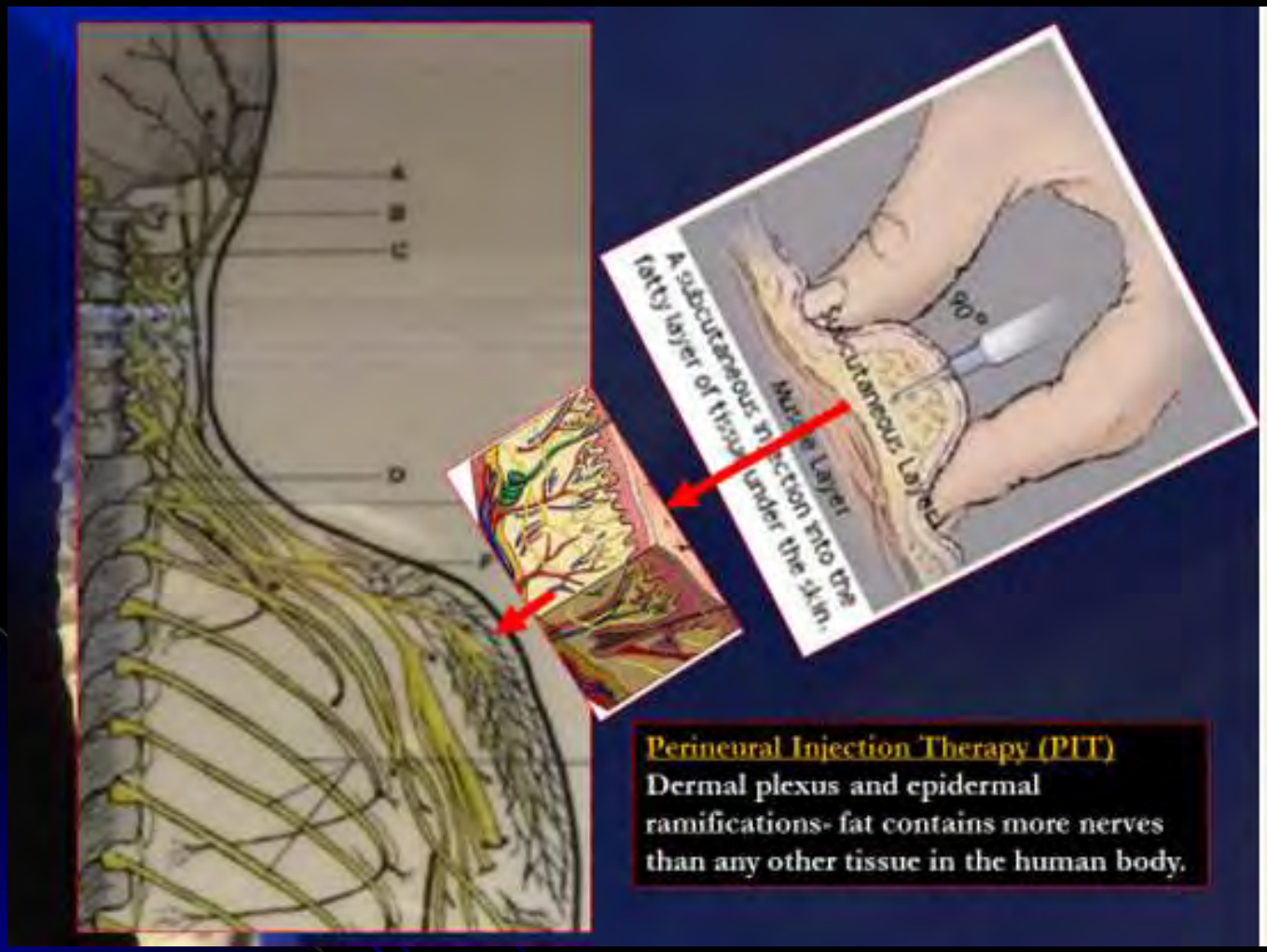
Guidelines

Regenerative Injection Therapy (RIT)

Buffered 5% Dextrose (D5W)

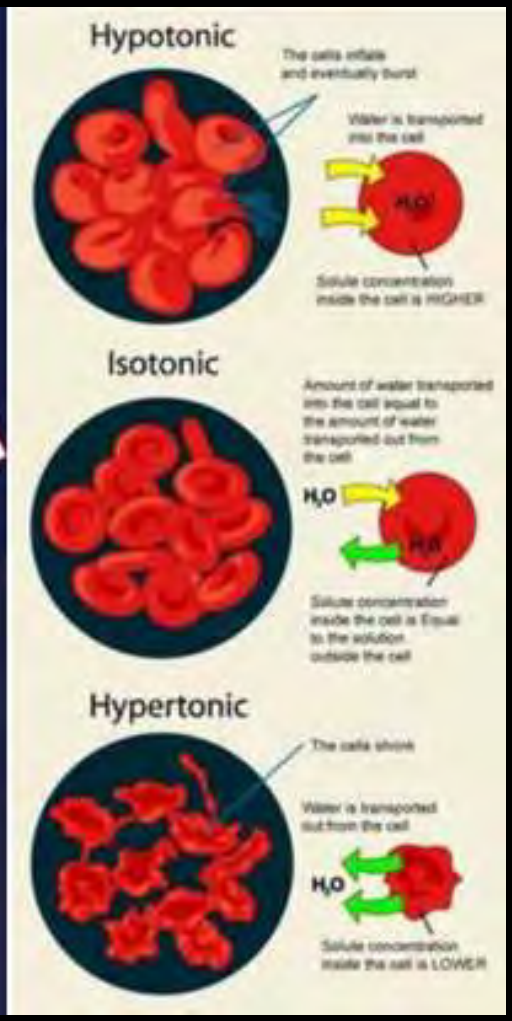
plus Cellular Therapy:

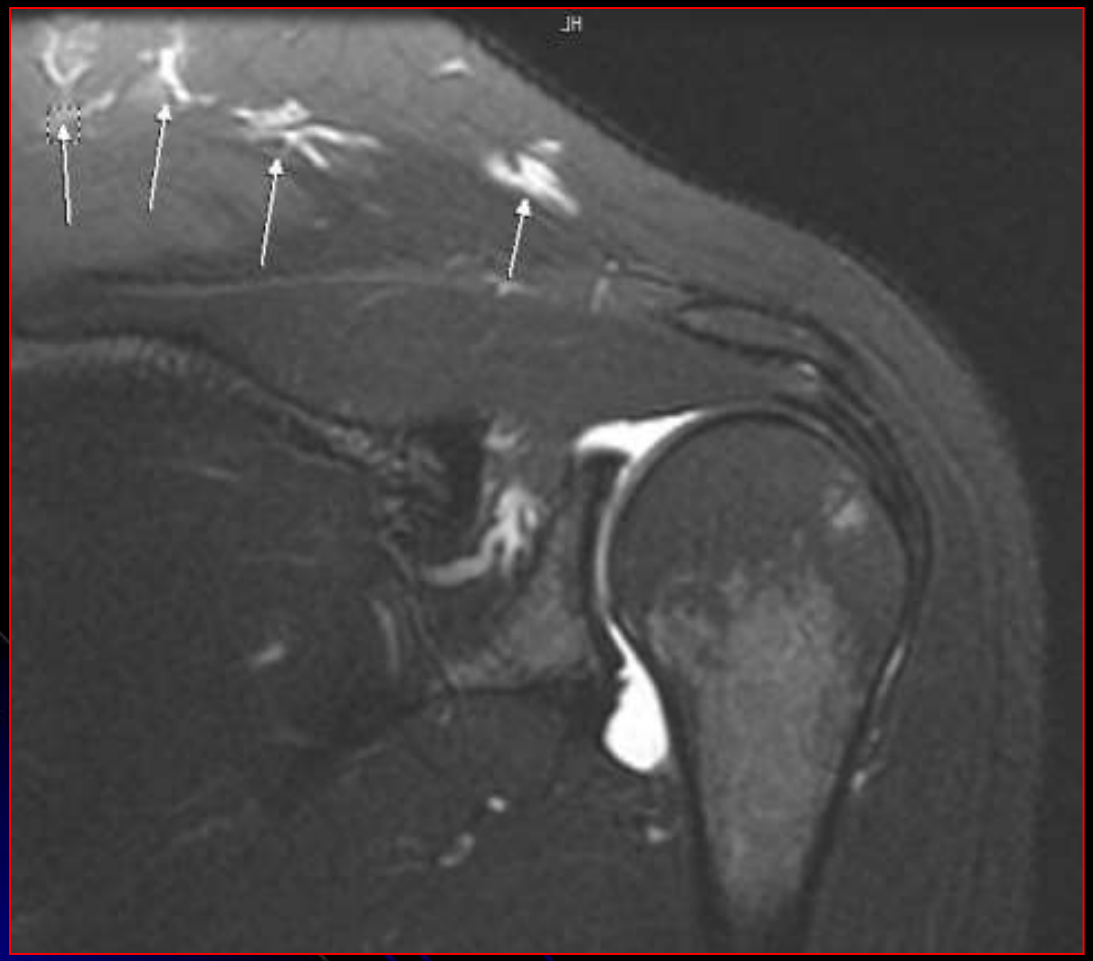
1. Platelet Rich Plasma (PRP),
2. Hematopoietic,
3. Mesenchymal and/or
4. Amniotic Cellular Solutions

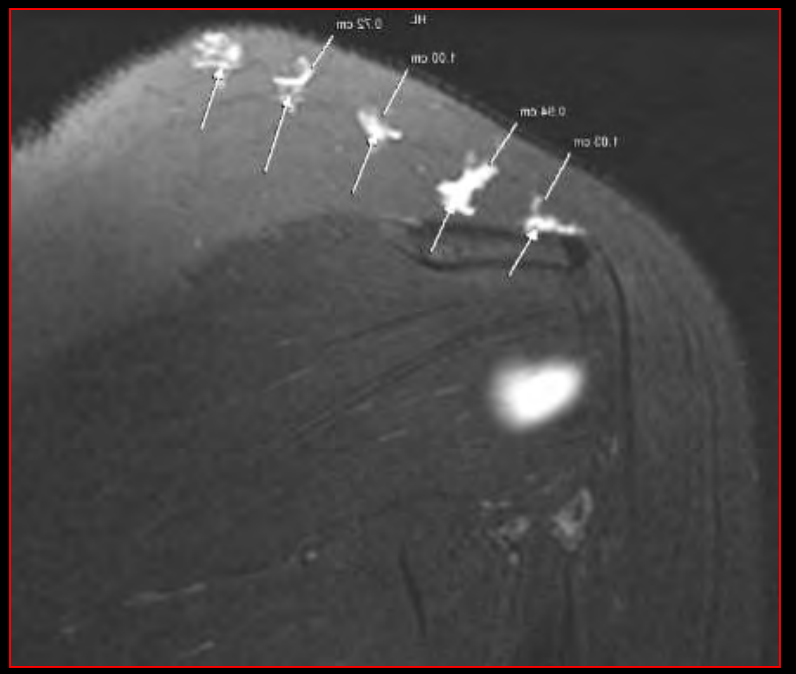


Perineural Injection Therapy (PIT)

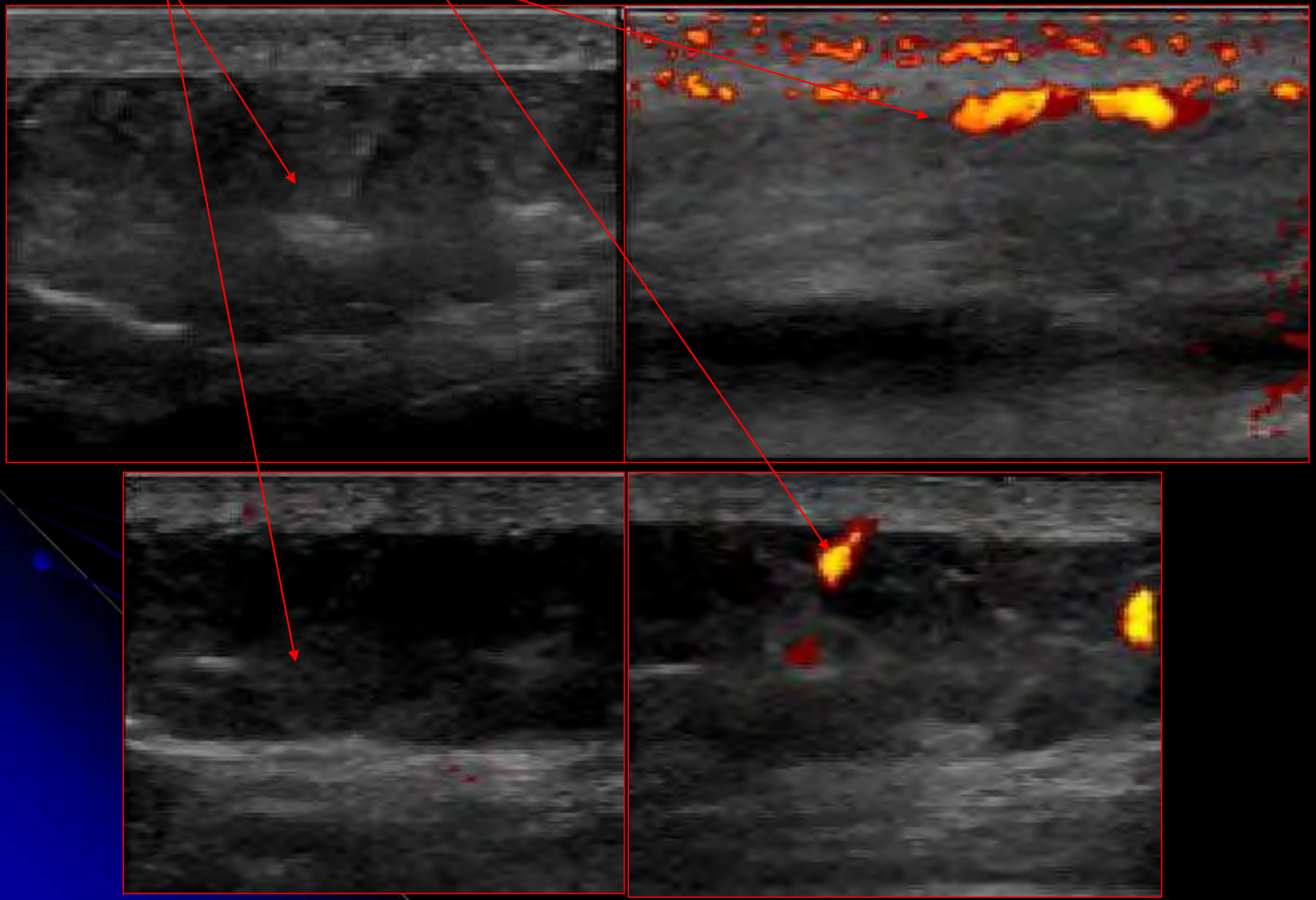
Dermal plexus and epidermal ramifications- fat contains more nerves than any other tissue in the human body.





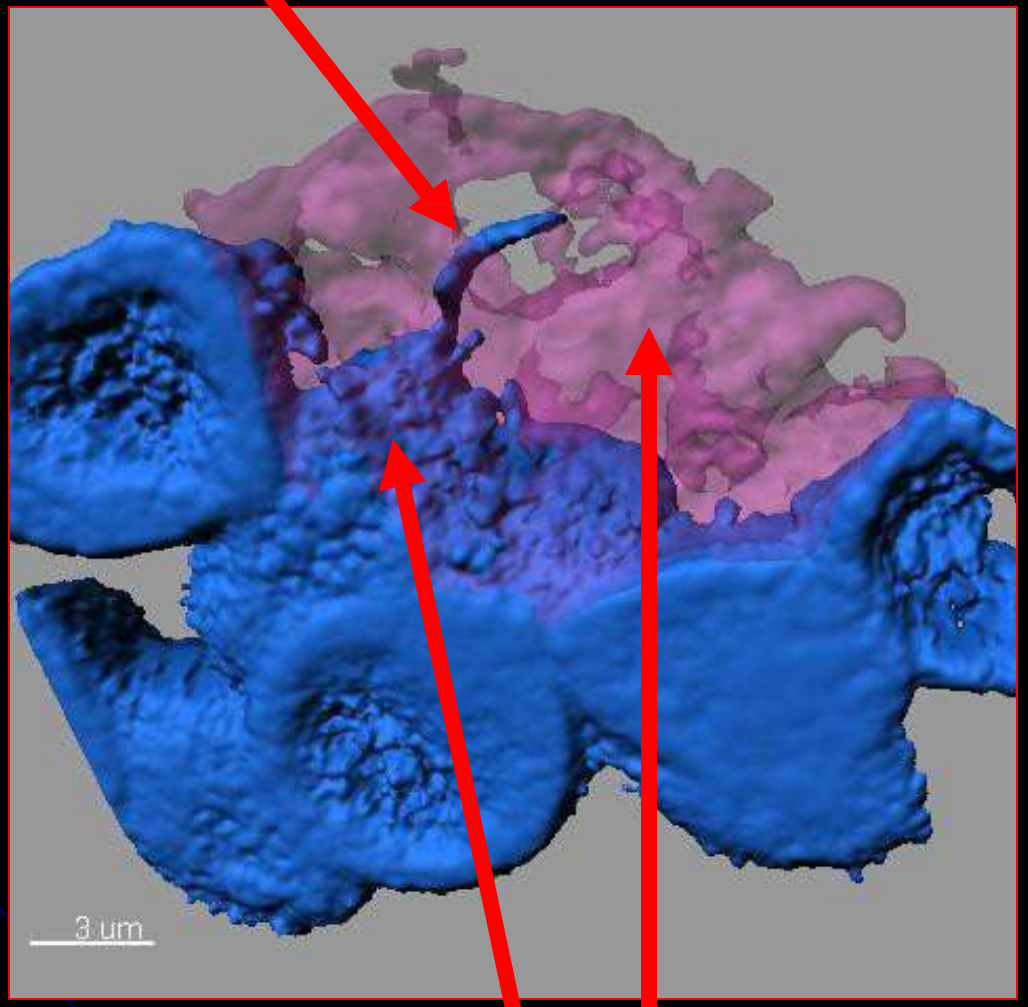


Before and 3 minutes after Perineural Injection Therapy with buffered 5% Dextrose



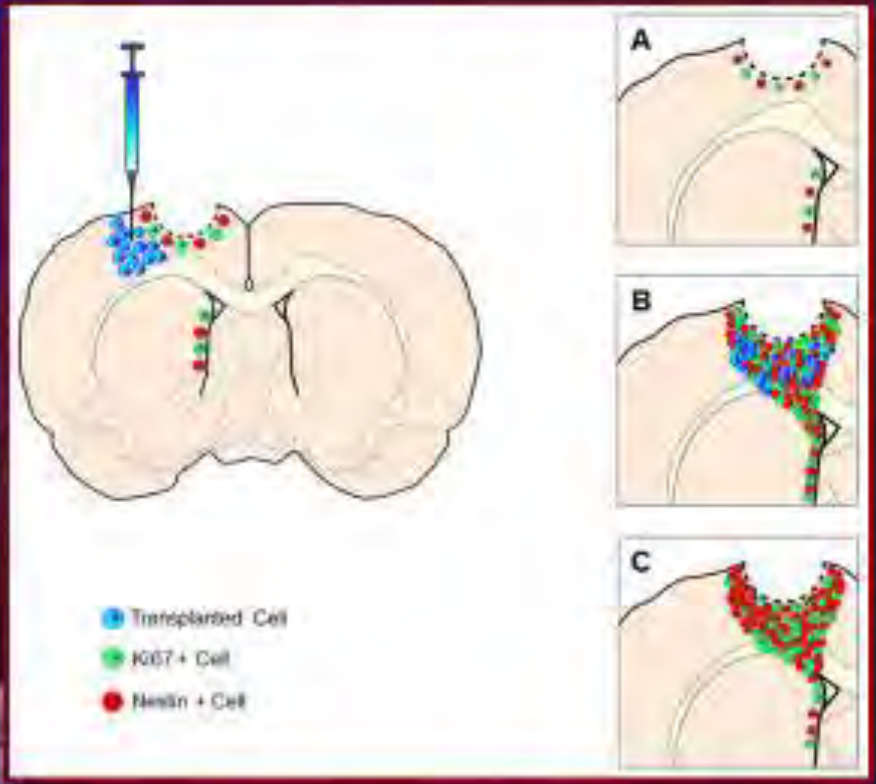
Injected Stem Cells (pink) work Indirectly via Paracrine Effects

Stem Cells use nanotubes to communicate with Patient's cells (blue)



Confocal microscope image showing patient stem cells (blue) clustering around a hub (pink) in the stem cell niche (pink) as one stem cell extends a nanotube into the hub (credit: Mayu Inaba, University of Michigan)

After TBI, endogenous repair mechanisms commenced, but are limited to the neurogenic SVZ and to a few quiescent resident neurogenic cells around the impacted cortex (A).



This endogenous repair process is not sufficient to mount a robust and stable defense against the TBI-induced cell death cascade unless exogenous stem cells are introduced. A physical gap between the neurogenic SVZ and the non-neurogenic, impacted cortex prevents migration of neurogenic cells to the injured cortex. Transplantation of stem cells into the peri-injured cortical areas creates a **neurovascular matrix of biobridge to bootleg newly formed endogenous cells from the SVZ to the peri-injured cortex (B).** Once the biobridge is established, the endogenous repair mechanism is maintained by newly formed host cells even in the absence of stem cells (C). Such transplant-paved biobridge between neurogenic and non-neurogenic sites allows endogenous neurogenic cells to reach injury-specific brain sites.

Patient and Family Centered Functional Medicine
Integrative Regenerative Medicine Practice

func·tion·al med·i·cine

noun

medical practice or treatments that focus on optimal functioning of the body and its organs, usually involving systems of holistic or alternative medicine.
"you don't have to have a disease to benefit from functional medicine"

- The patient-centered medical home (PCMH) is the offspring of the Affordable Care Act that, among other things, mandates that going forward Primary Care physicians must acquire and store all patient electronic health records (EHR).
- There is a growing confirmation that we are moving into another cultural shift.
- An emerging 21st century intersection of industry, social healing and diverse contemplative practices is bringing about more compassionate, meditative and mindful medicine.

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- Health care is not just about what is being injected or just about who is administering therapy to our patients.
- The skill set of the administering physicians is extremely important.
- Overall success of regenerative medicine is highly dependent on the overall health and psychological well being of our patients including; comorbidities, pharmaceuticals and nutritional status.

Patient and Family Centered Functional Medicine

Interventional Regenerative Medicine Practice

6 Co's of MAXIMIZING EFFECTIVENESS OF RIT- *Avoid Co-mpetition!*

1. Collaborate with patient's Primary Care Provider (PCP)
2. Coordinate with patient's Chiropractor and/or Manual Therapist to ensure the patient the dignity of a proper diagnosis.
3. Collate existing health care records with all prior medical and surgical history with an updated pharmaceutical history, Microbiome (gut) assessment/therapy, blood laboratory and hormone status and QANS testing to determine appropriate oral and I.V. nutrition.
4. Correlate prior imaging studies with appropriate up-to-date imaging to arrive at the correct diagnosis.
5. Communicate overview of Regenerative Injection Therapy (RIT) in sync with patient's understanding of their existing health care regimen (making clear that RIT is **'**in addition to**'**, not **'**instead of**'** the patient's existing and evolving 'patient specific' integrative health care regimen).
6. Complete patient registry following RIT.

Patient and Family Centered Functional Medicine
Interventional Regenerative Medicine Practice

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medical practice or treatments that focus on optimal functioning of the body and its organs, usually involving systems of holistic or alternative medicine.
"you don't have to have a disease to benefit from functional medicine"

Functional medicine has long been guided by six core principles:

1. An understanding of the biochemical individuality of each human being, based on the concepts of genetic and environmental uniqueness;
2. Awareness of the evidence that supports a patient-centered rather than a disease centered approach to treatment;
3. Search for a dynamic balance among the internal and external body, mind, and spirit.
4. Familiarity with the web-like interconnections of internal physiological factors.
5. Identification of health as a positive vitality not merely the absence of disease emphasizing those factors that encourage the enhancement of a vigorous physiology.
6. Promotion of organ reserve as the means to enhance the health span, not just the life span, of each patient.

Does Age Affect Cellular Treatment Success?

- Not surprisingly, older patients do not do as well as younger patients with injection of their own cells.
- For example, hip arthritis patients younger than 55 years old are more likely to report improvement than older patients.
- Poorer hip-arthritis outcomes can be improved by bolstering the patient's immune system/gut health with I.V. and oral nutrition.

Regenerative therapies for Osteoarthritis and Diabetic neurovascular therapy

- Degenerative arthritis is a challenging disease with limited treatment options, and has become the leading cause of disability in elderly people.
- Diabetes is growing at an epidemic rate in the United States. According to the Centers for Disease Control and Prevention (CDC), nearly 30 million Americans have diabetes and face its devastating consequences.

Regenerative therapies for Degenerative Arthritis and Diabetic neurovascular therapy

What is true nationwide is also true in Arkansas

- The bottom five states in Health care in the U.S. are in order Nevada, Arkansas, Texas, Mississippi and Oklahoma.

Regenerative therapies for Degenerative Arthritis and Diabetic neurovascular therapy

Emerging Therapies Act

3 Proposed study groups

1. Osteoarthritis (OA) of the Knee
2. Low back pain/Hips
3. Diabetic extremity disease

Regenerative therapies for Degenerative arthritis and Diabetic Neurovascular therapy

Emerging Therapies Act

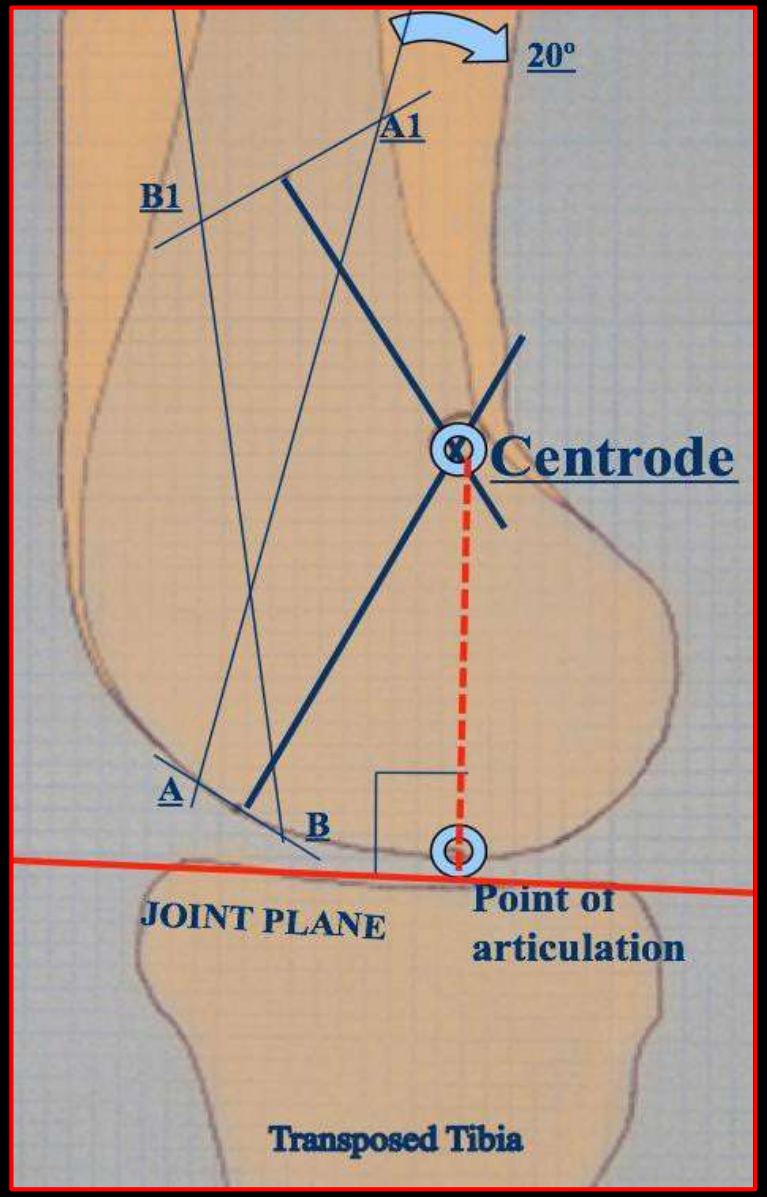
1. Degenerative Arthritis (DA) of the Knee

- Knee pain can be caused by a wide range of diseases or injury.
- Knee pain
  - Second most common cause of the chronic pain affect over 100 million Americans.
  - Second most common musculoskeletal complaint that brings people to their physician.
- Degenerative arthritis is caused by incompetency of ligaments, the dense fibrous bands that connect bones to each other.

A Method to Measure, Confirm and Localize Joint Dysfunction and its Impact on Cartilage.

Authors: Ola Grimsby, PT, DMT, FFAAOMPT and David Harshfield M.D., M.S.

The lateral view of the knee shows the optimum axis of rotation, that depends on integrity of the cruciate and other key ligaments (static stabilizers of the knee).



A Method to Measure, Confirm and Localize Joint Dysfunction and its Impact on Cartilage.

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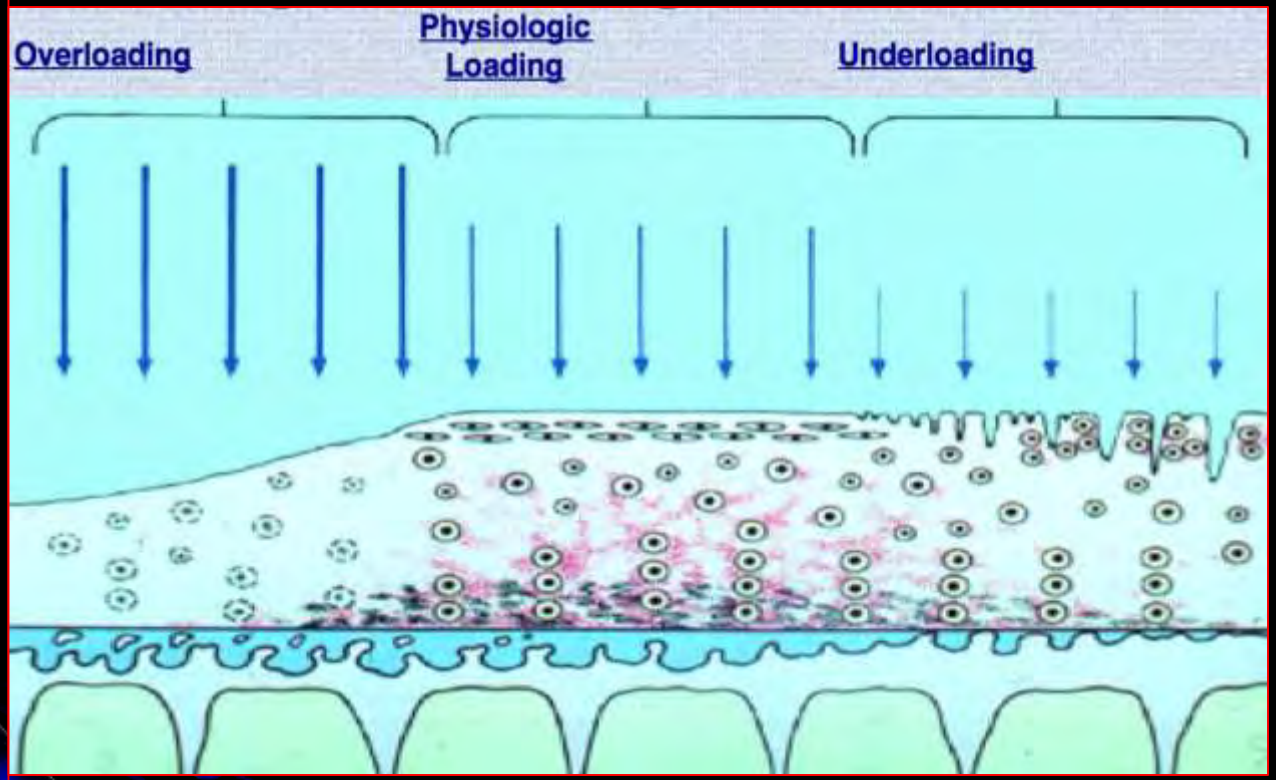
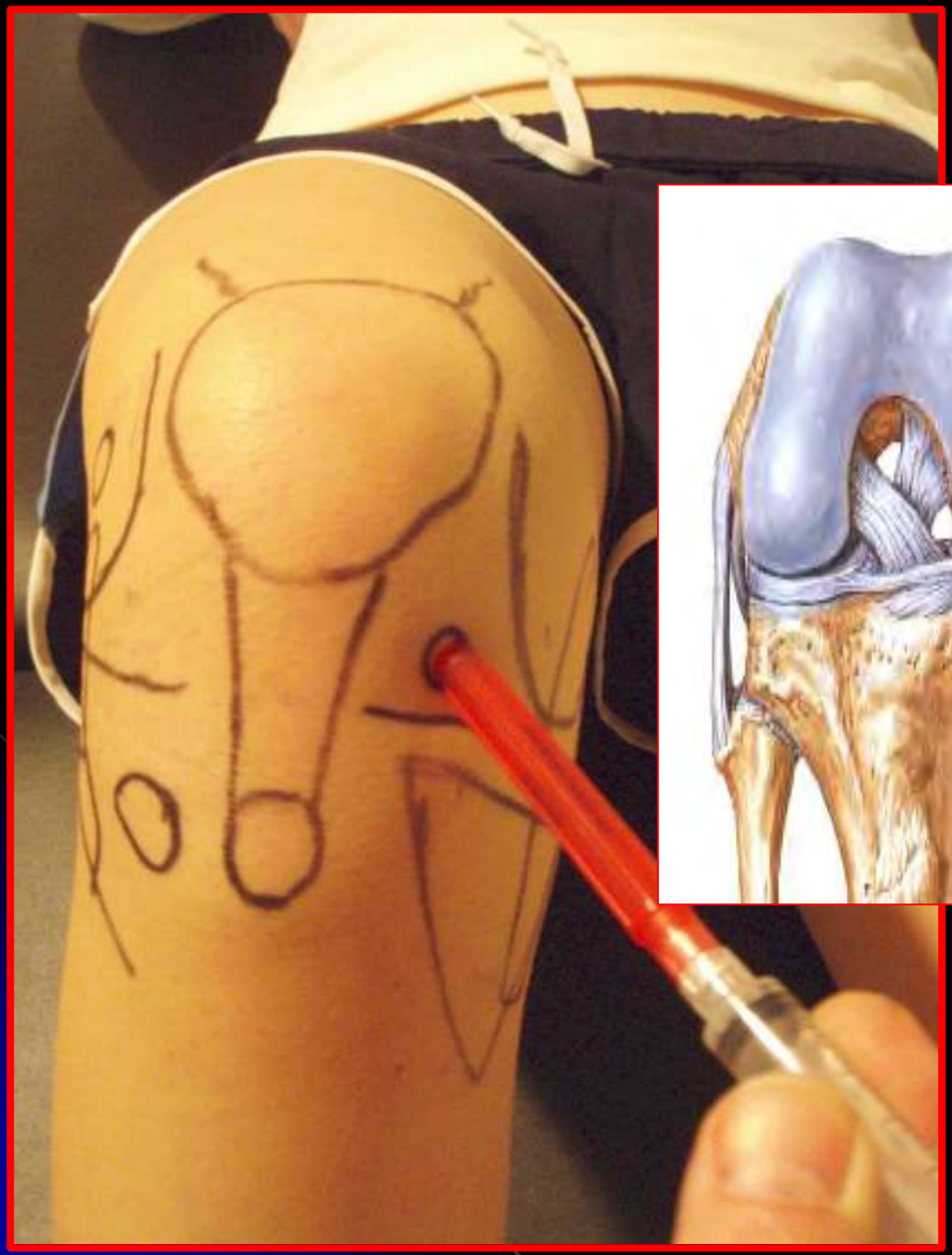


- Cartilage health is a "Goldilox" effect, in which load on the knee must be "just right" (not to much, but not too little either)
- The needed load depends on the integrity of the cruciate and other key ligaments (static stabilizers of the knee).

1. **Articular "under load"** is consequently reducing the cellular activity, causing shrinking of the matrix, reduced joint stability and secondary absorption of the tissue.
2. During static compression **("over load")** we see an even more severe reduction in the cellular synthesis.
3. As cells die the reduction in matrix and joint dysfunction cause permanent degeneration.



Injection of Plasma Graft into Knee w CT

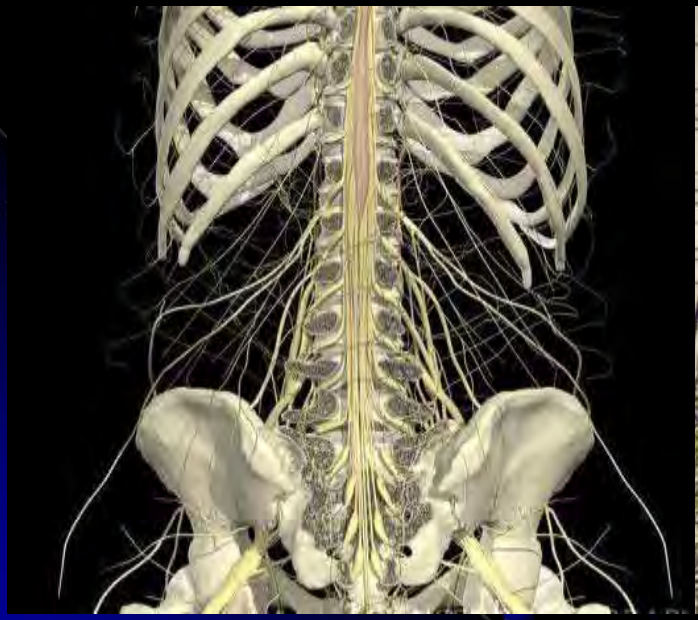
Regenerative therapies for Osteoarthritis and Diabetic neurovascular therapy

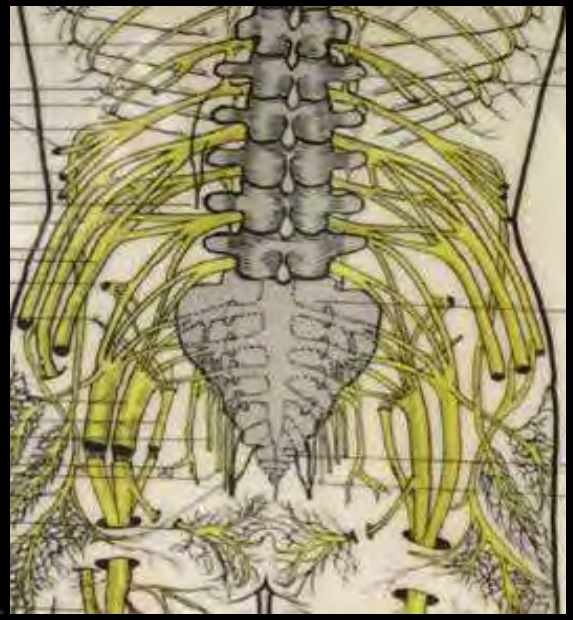
Emerging Therapies Act

2. Low back pain:

- 80% of us will get back pain at some time in our lives.
- In 2007 alone, about 27 million US adults aged 18 or older (11% of the total adult population) reported having back pain.
- Health economists have reported the annual cost of chronic pain in the United States is as high as $635 billion a year, which is more than the yearly costs for cancer, heart disease and diabetes combined.
- Individuals 18 and older to represent 210.7 million U.S. adults, with a mean health care expenditures per adult of$4,475.00.

Darrell J. Gaskin, Patrick Richard. The Economic Costs of Pain in the United States. *The Journal of Pain*, 2012; 13 (8): 715 DOI: 10.1016/j.jpain.2012.03.009





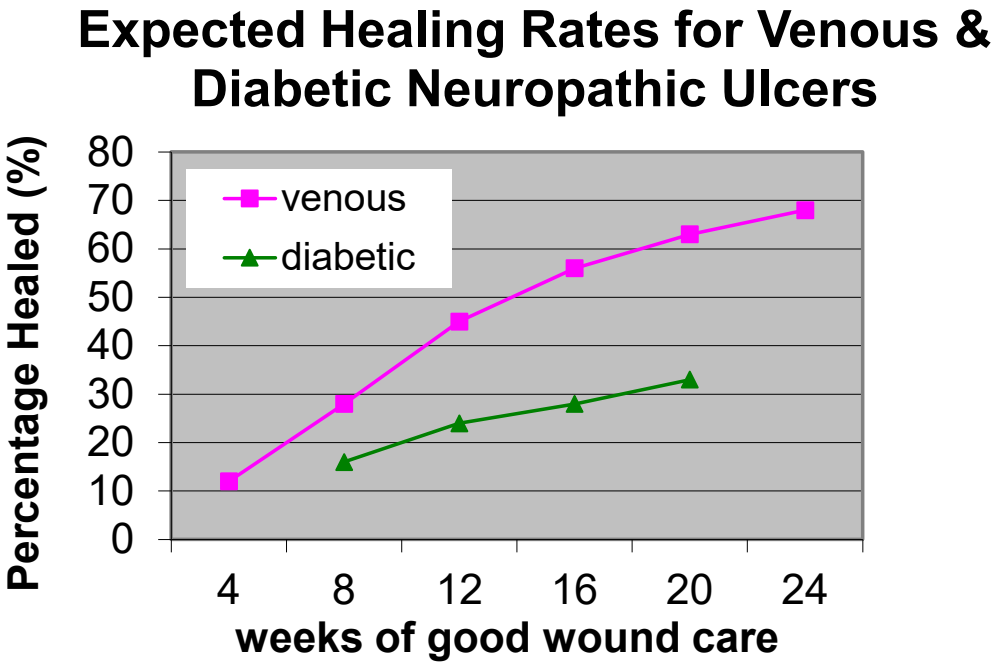
Regenerative therapies for Osteoarthritis and Diabetic neurovascular therapy

Emerging Therapies Act

3. Diabetes

- Total direct medical expenses for diagnosed and undiagnosed diabetes, pre-diabetes and gestational diabetes in Arkansas was over$2.3 billion.
- In addition, another 1 billion spent on indirect costs from lost productivity due to diabetes.

Normal Healing Rates?



32% Venous ulcers not healed at 24 wks

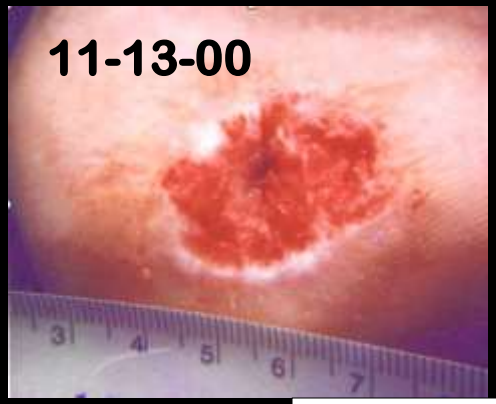
67% Diabetic ulcers not healed at 20 wks

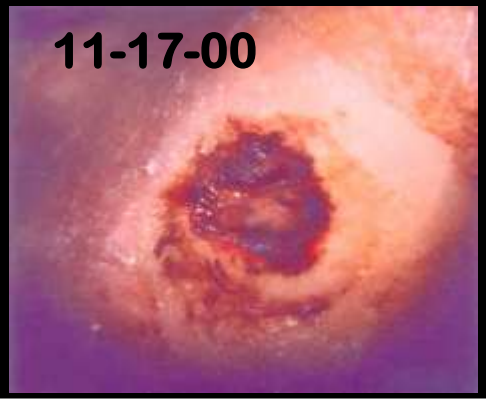
Kantor & Margolis, WOUNDS, Vol. 12, No. 6, 2000

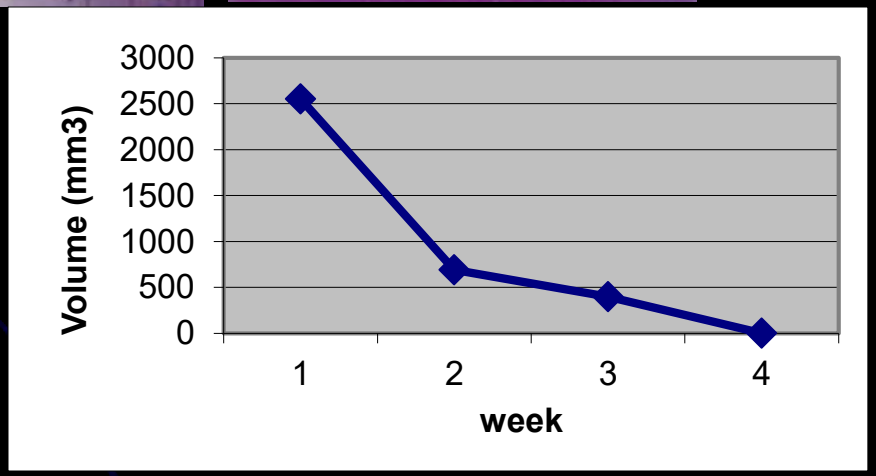
RA is a 52 y.o. white male with a hx of non-healing ulceration plantar lateral R. heel x 3 years. He has a hx of a STJ injury with lack of eversion/inversion motion. He is diabetic with neuropathy. Pedal pulses were intact. One PRP treatment.

PMH: (+) IDDM x 20 yrs. (+) MI in 1996 with CABG x 5. (+) smoker 1.5 ppd x 30 yrs.

MEDS: Humulin 70/30.

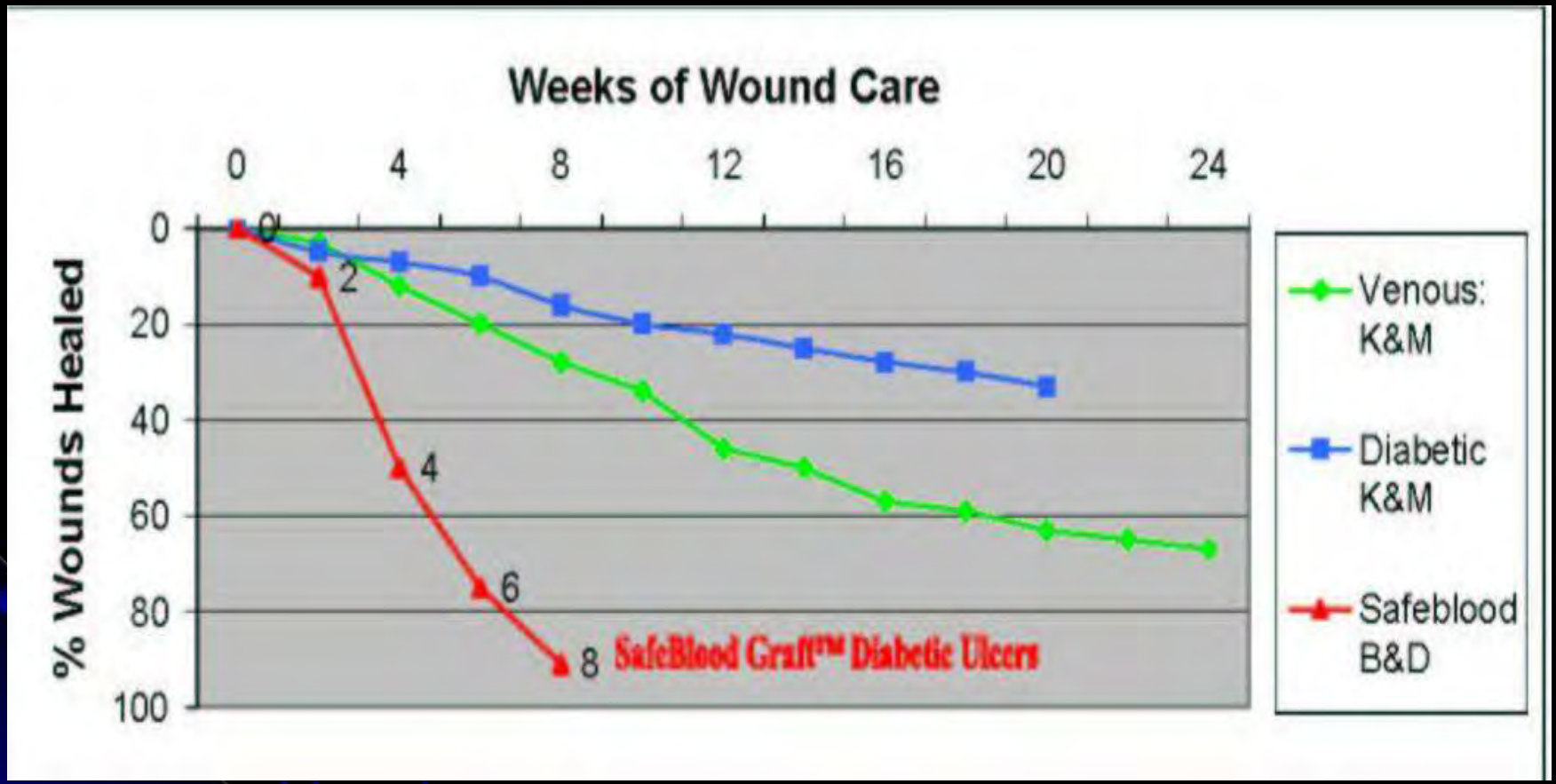






55 y.o. diabetic female with a chronic plantar-medial hallux interphalangeal ulcer. Osteomyelitis was confirmed in both the distal and proximal phalanges. Amputation was recommended by 3 different doctors. She refused and wanted to try the Autologous PRP. She healed and with no evidence of osteomyelitis.

Regenerative Therapy vrs Standard Time to Close



35 Diabetic Foot Ulcers

	LENGTH WOUND PRESENT(wks)	(mm3) START VOL.	(mm3) END VOL.	WEEKS TO OUTCOME	# PROCEDURES REQUIRED
Averages*:	32.38	679.91	-0-	7.79	1.47
Fastest to heal:	24	48	-0-	0.71 (5 days)	1
Slowest to heal:	96	1360	-0-	22.71 (159 days)	5
	18	1496	-0-	22.71 (159 days)	1

* Irrespective of Glucose levels, PVD status, Compliance.

FDA Critical Limb Ischemia (CLI) Trial

TREATMENT OF NO-OPTION CLI WITH A CONCENTRATE OF AUTOLOGOUS BONE MARROW CELLS

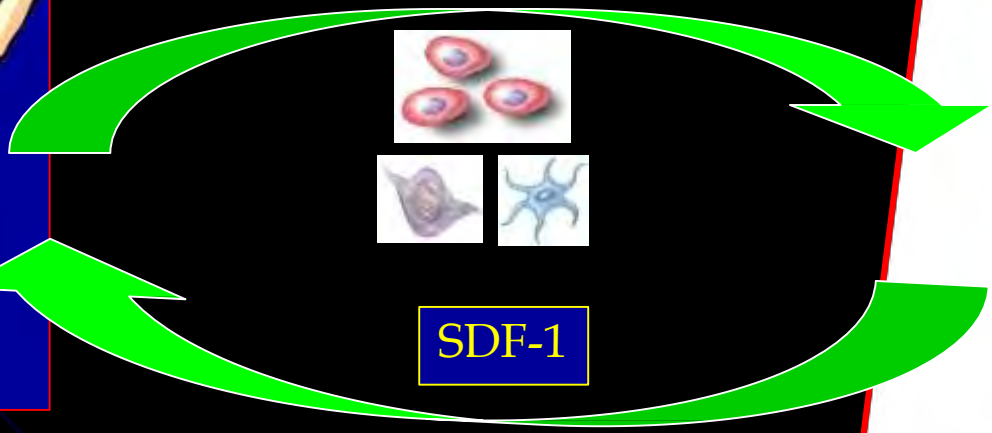
David L. Harshfield, Jr., M.D., M.S.
Co-Principle Investigator
Director of Interventional Radiology
MCSA Medical Center of South Arkansas

Director of Integrative Imaging
College of Integrative Medicine- coimed.org
Little Rock, Arkansas

Chairman of the Institutional Review Board (IRB)
International Cellular Medicine Society (ICMS)

NATURAL RESPONSE:
BONE MARROW STEM CELLS ARE RECRUITED TO ISCHEMIC TISSUE

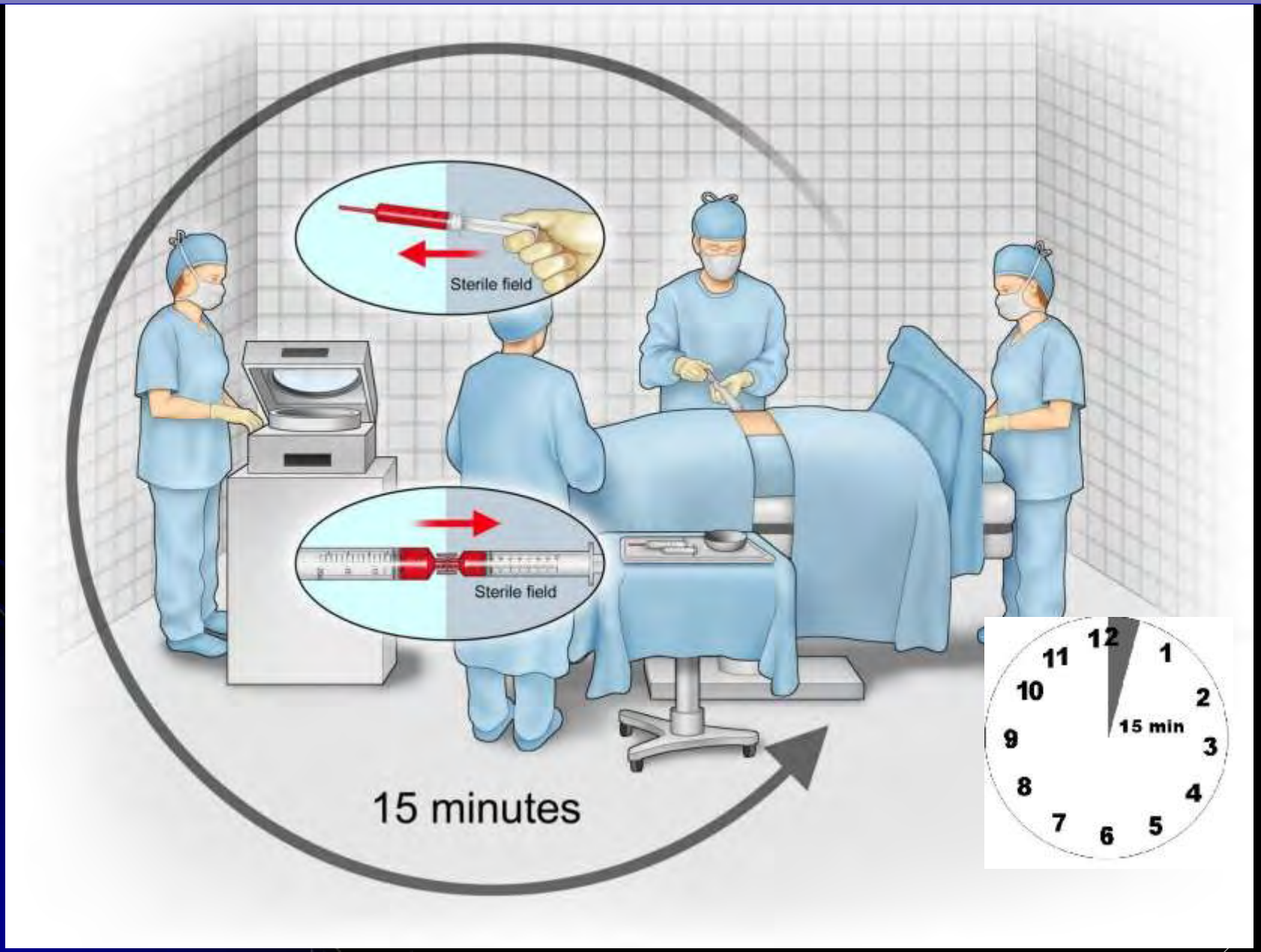
Ceradini, D, and Gurtner, G*; Trendsn Cardiovasc Med: 2005*



SDF-1 released from ischemic tissue recruits bone marrow cells

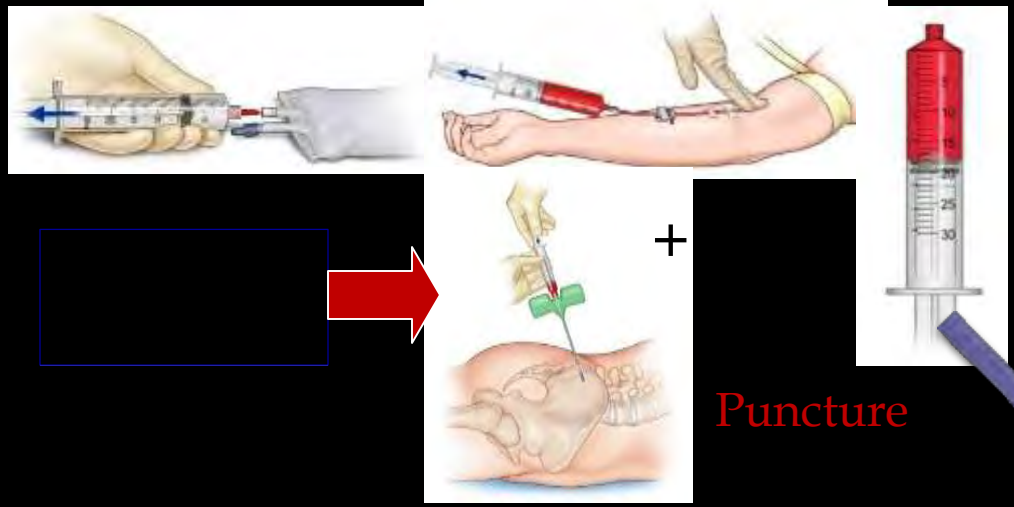
CONFIDENTIAL

Bone Marrow Aspirate Concentrate (BMAC) System: Facilitates Autologous Bone **Marrow** Therapy



STUDY DESIGN: Randomized (2:1), Double Blind

PLACEBO



Puncture

INVESTIGATOR BLINDED TO INJECTATE

- 40 injections
- 1 mL per injection

BMAC GROUP

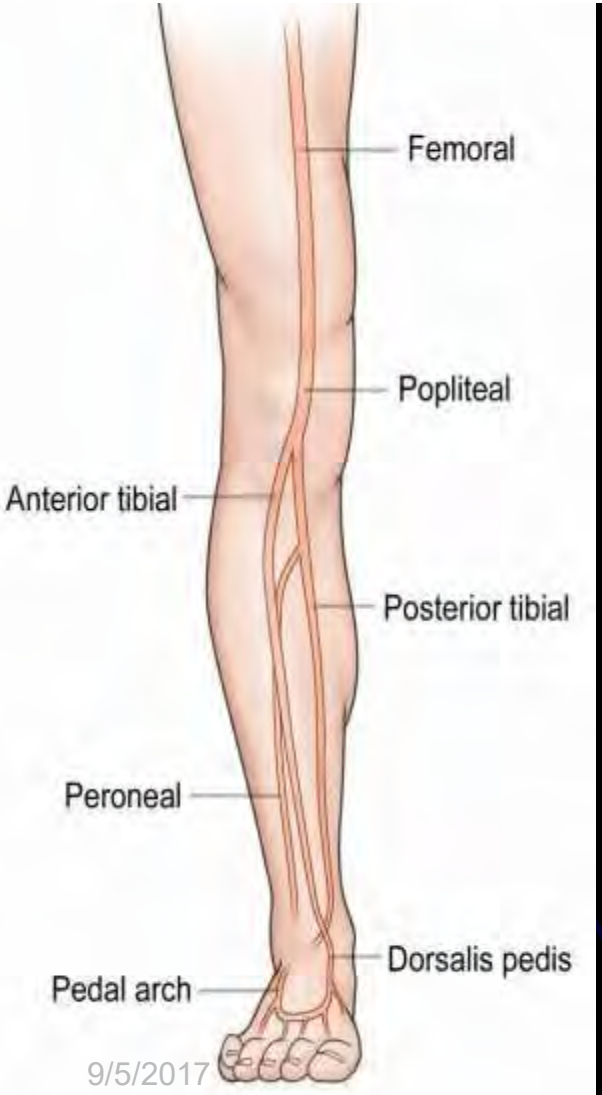
ASPIRATE

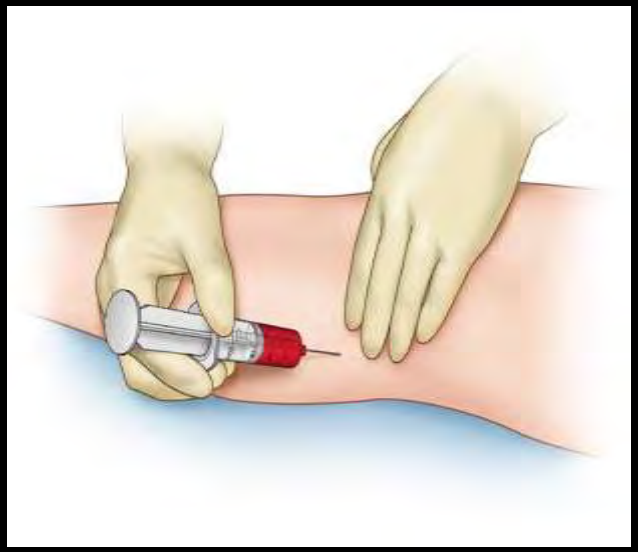
PROCESS

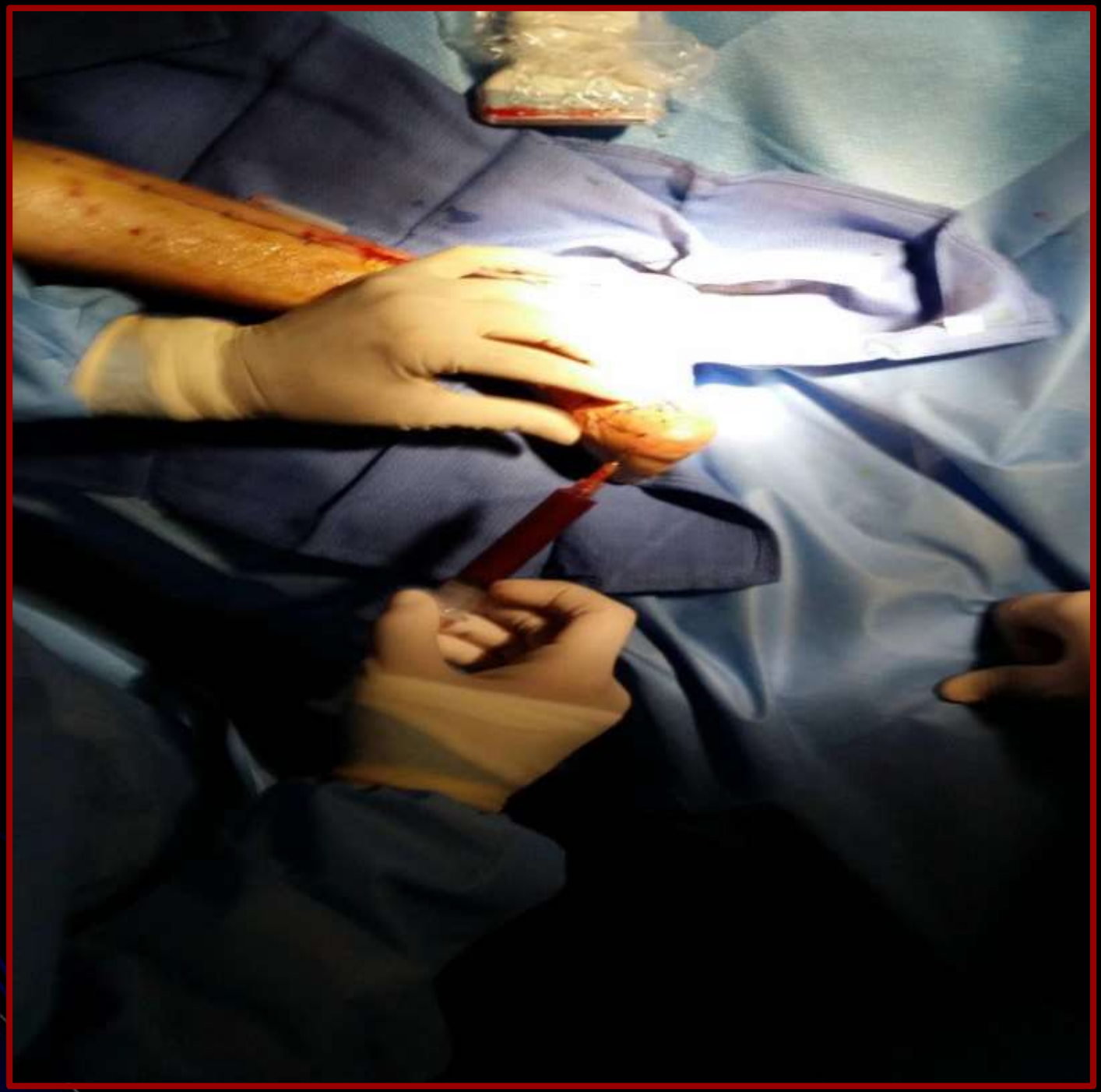
BMAC

CONFIDENTIAL

Targeting the Delivery of BMAC







Stump

8.3cm x 2.4cm x 1.2cm

6.7cm x 1.5cm x .1cm

80% Volume Reduction
In 19 days

Failed harvest site

16.8cm x 3.4cm x 1.7

15.2cm x 2.5cm x .8cm

70% Volume Reduction

Six Years of Unsuccessful Wound Care

Eight Weeks of Comprehensive Team Management

Three Month Follow Up

Use of Autologous Platelet Rich Plasma

Pulsed Electromagnetic Field Therapy for Pain

Objective

Musculoskeletal pain is widespread in society and is challenging to treat. To determine the effectiveness of a miniaturized, wearable PEMF device as a home-based, self-administered, musculoskeletal pain therapy an anonymous survey of customers who had bought the PEMF device for pain was conducted.

Design

The survey was created using Qualtrics web based survey software, and was included as a link in an email to customers who had previously ordered the PEMF medical device. The survey included questions on the condition, pain levels prior to and post PEMF treatment, using a 11 point visual analogue scale (VAS), a patient global impressions of change scale (PGIC), pain medication use and length of time of treatment.

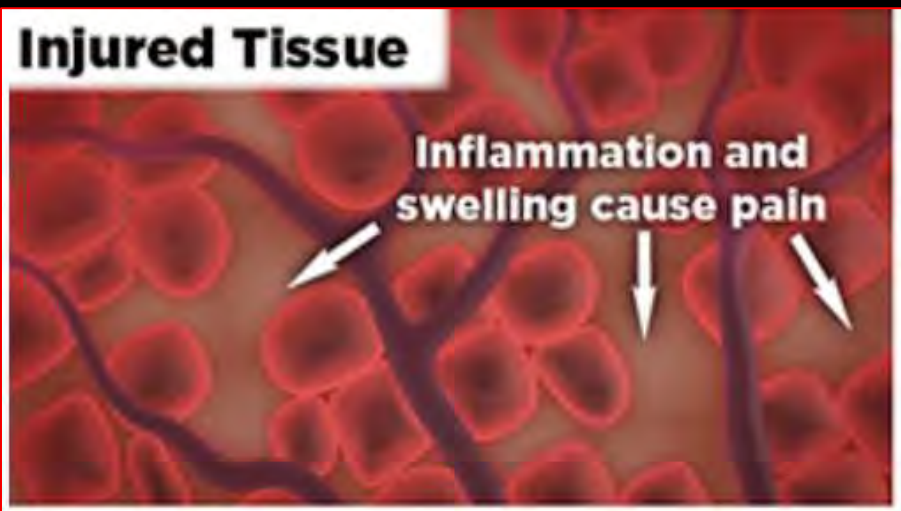
Results

There were 260 responses from 2900 emailed, an 8.9% response rate. The PEMF device was used for an array of painful musculoskeletal conditions though predominantly back and knee pain. Prior to beginning PEMF therapy respondents reported an average pain level of 7.3 VAS points, whereas post PEMF use the reported pain level declined to an average 3.6 VAS points, a reported average drop of 3.7 VAS points. The results from the PGIC scale show that PEMF use had a positive effect on patient quality of life and 72% of those who indicated prior use of pain medication reported a reduction in use.

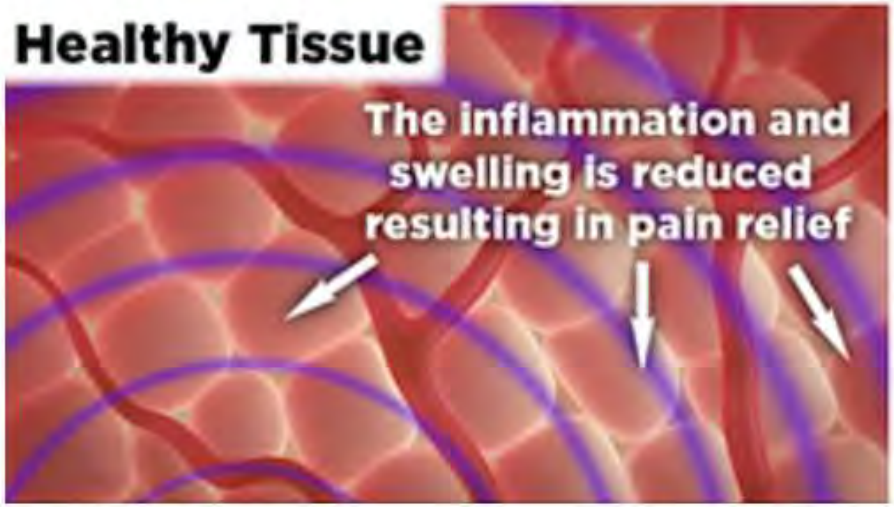
Conclusion

The survey data suggests that PEMF in this form is an effective self-administered pain therapy for an array of musculoskeletal pain conditions. There were no reports of significant adverse side effects.

Key words: Radiofrequency, electromagnetic, pain, back, knee

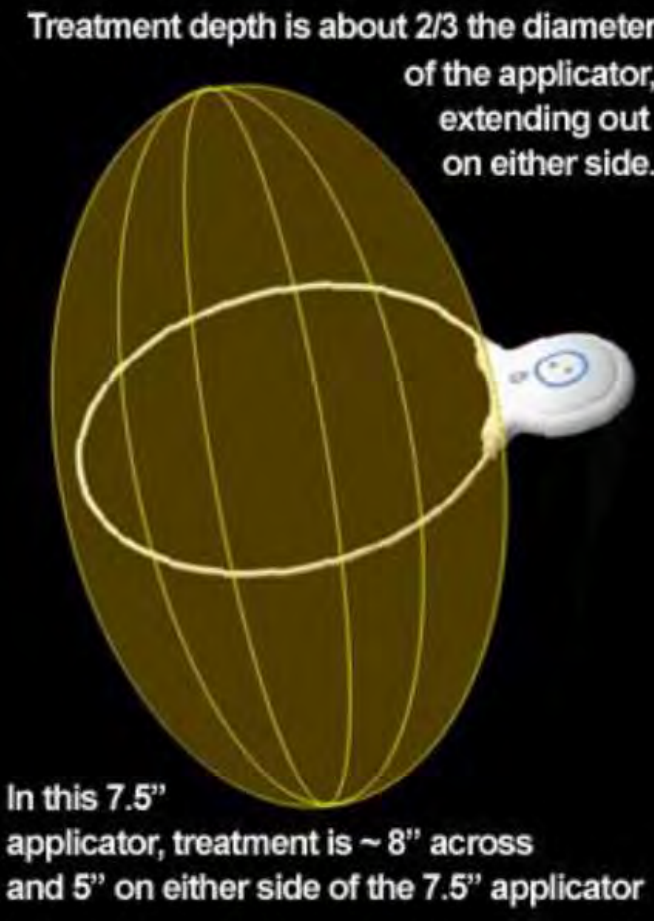


When an injury occurs, cells separate and swelling starts to develop in the injured tissues which causes pain. Also, chemical signals are released by cells in the injury site activating nerves and causing an electrical impulse which signals pain in the injured tissue. Therefore, a reduction in tissue swelling "inflammation" reduces pain and allows injuries to heal.



These innovative medical devices accelerate injury recovery by increasing blood flow and reducing swelling. Delivering a safe form of energy to the injured cells, which is used by the cells to recover and reduce inflammation. The application of this extended treatment device therefore results in a decrease in pain and accelerated tissue repair.

- Bioelectroceutical devices emit a pulsing shortwave radio wave to create an imperceptible electrical field in the body's tissues to modulate sensory nerves and reduce pain.
- This tricks the brain into thinking it's not in pain.
- At the same time it starts a healing cascade effect that influences motor nerves to stimulate blood flow in the treatment areas.



Electroceuticals

SofPulse Electromagnetic Field Pulsating System Helps Moderate Osteoarthritis Symptoms in Diseased Knees

Device produces pulsed electromagnetic fields (PEMF) to induce micro-currents in injured tissues, which in turn are thought to act on the binding kinetics of calcium and calmodulin to increase production of nitric oxide which then reduces inflammation.

In the double-blind, randomized placebo-controlled study, 34 patients used a portable battery-operated device that emits a low-intensity pulsating electromagnetic frequency and experienced more than 40 percent pain relief on their first day.

Patients strapped the small, ring-shaped plastic device around their knees for 15 minutes, twice daily for six weeks. The device was lightweight and patients could position the device directly over clothing. All participants were given a device with a coil that appeared to work but some were assigned active coils and others were given non-active coils.

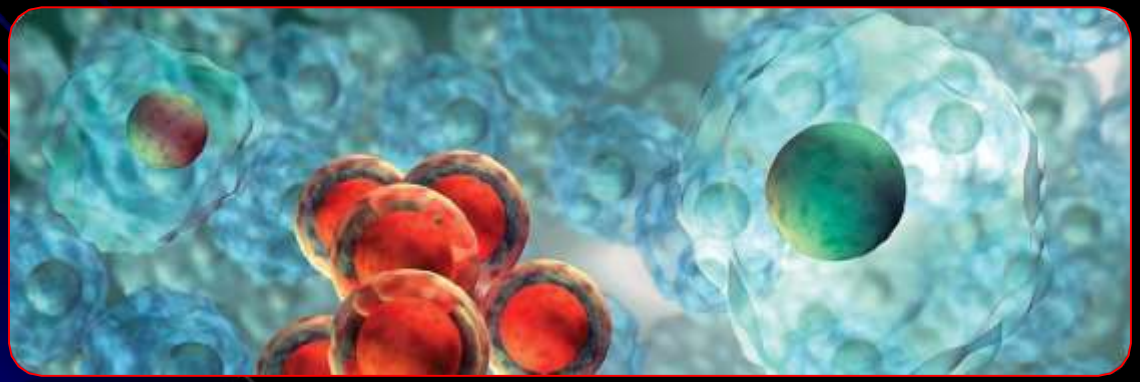
Key Points

Clinical Outcomes: IROM, with credentialed providers and certified protocols, provides safe, affordable and effective therapy resulting in improved healing and overall patient outcomes.

Financial outcomes: Lower costs to The State and Public School Life and Health Insurance Board, not only with avoidance of unnecessary pharmaceuticals and surgery but of complications, as well.

Quality of Life: IROM is not only financially beneficial, but allows patents a more rapid return to work and activities of daily living.

Treatment Acceptance: Increasing payer adoption of the use of regenerative and cellular medicine therapies, with Arkansas now playing a leadership role in the U.S.



End of Presentation

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