



**Shackelford**<sup>TM</sup>  
Pharma

# An Opportunity to Improve the Lives of People with Epilepsy

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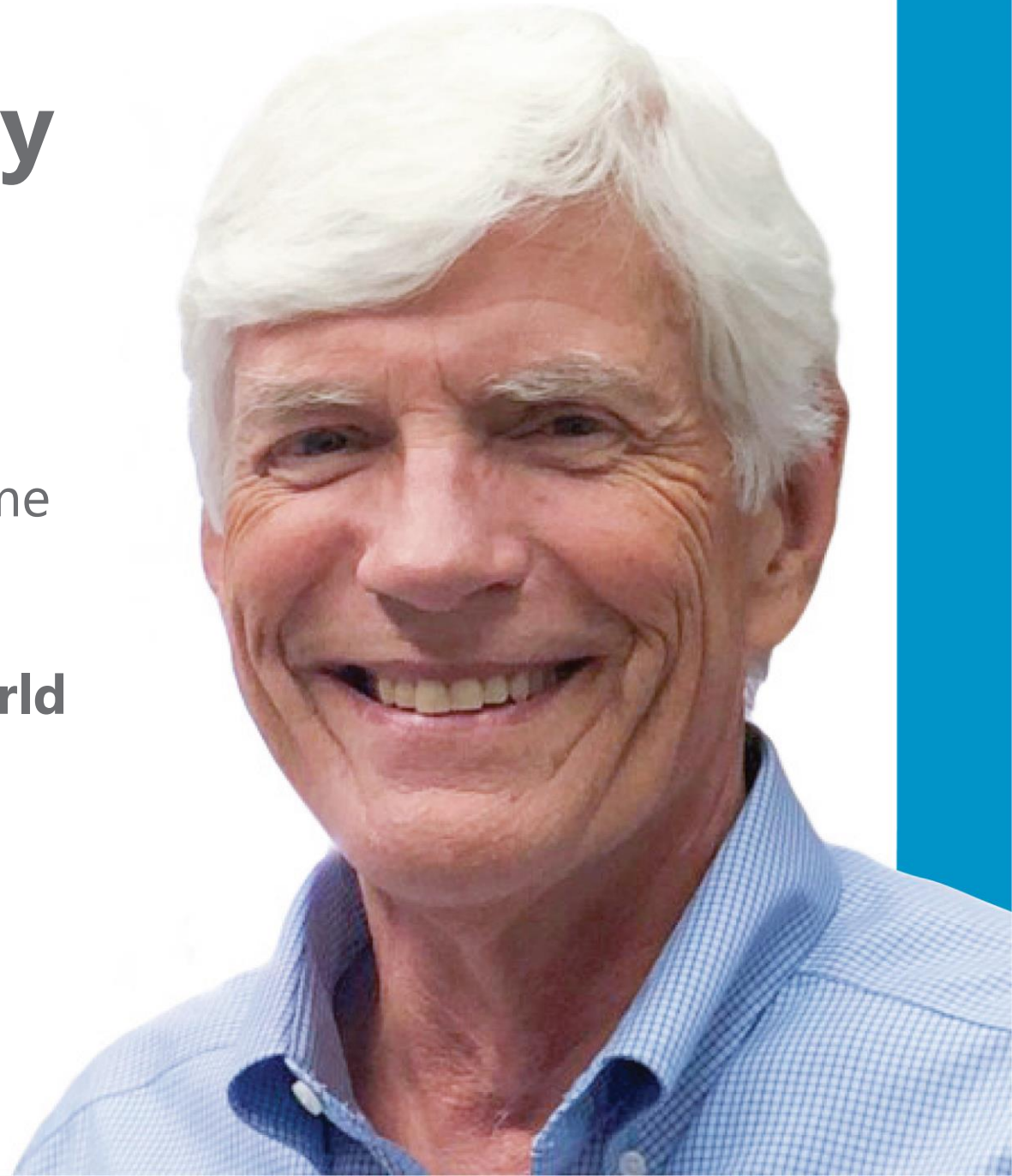
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# A History in Epilepsy

Dr. Alan Shackelford gained national attention for his **breakthrough treatment** of a young Dravet Syndrome patient with cannabinoids.

Based upon Dr. Shackelford's **real-world experience**, Shackelford Pharma, Inc., was formed to develop medicines for neurological diseases with significant unmet patient needs.







# **The Database That Makes Us Unique**

**Drug development based on human data from  
Dr. Shackelford's >25,000 patient interactions using  
cannabinoid-based therapies**

# Exceptional Team

- > **320** years experience
- Individuals on our team were directly responsible for **43** FDA Drug Approvals
  - ✓ **7** drugs > \$1B annual sales each
  - ✓ **6** FDA approved epilepsy drugs
- Renown Scientific Advisory Board
- Accomplished Corporate Team



# Epilepsy: The Unmet Need

**Despite ~28 anti-epileptic drugs (AEDs) on the market<sup>1</sup>, ~36% of patients with epilepsy still have uncontrolled seizure activity<sup>2</sup>.**

- For many epilepsy patients, the suffering they endure goes well beyond seizures. They struggle with depression, impaired cognition, impaired brain development or even reversal of development progress in children.
- Frequent seizures that don't respond to currently available medications can cause brain damage. Some patients with intractable epilepsy even have brain tissue surgically removed to treat their seizures.
- Estimated direct costs of epilepsy are approximately \$28 billion per year, a significant portion of which can be attributed to increases in all-cause costs related to uncontrolled epilepsy.<sup>2</sup>

1. Epilepsy Currents. Summary of Antiepileptic Drugs Available in the United States. July-August 2018.  
2. AJMC. Examining the Economic Impact and Implications of Epilepsy. February 2020.



# SP1707: Lead Drug Candidate

- Contains **active ingredient used by Dr. Shackelford** in this specific epilepsy population
- **Real world evidence from large cohort of patients** with seizures or seizure disorders representing hundreds of patient treatment years of real-world data.
- **Probability of demonstrating efficacy** in controlled clinical trials **projected to be higher** due to this real-world experience
- **No safety or tolerability issues identified**
- **Unique Mechanism of Action** – positive for drug development & complimentary to existing anti-seizure medications
- **Adjunct and Monotherapy** use cases
- **Large Unmet Medical Need:** ~1.3M patients (USA, EU5, CAN, AUS)



# Dr. Shackelford's Real-World Experience Compared With Published Data from Jazz Pharmaceuticals

	SP1707	SP1707	EPIDIOLEX®	EPIDIOLEX®
	Adult	Pediatric	Ped. RCTs	EAP
<b>Demographics</b>				
Number of Patients	82	13	61-76 per indication	892
Male/Female	47/35	8/5	N/A	464/428
SZ/Epilepsy Duration Prior to SP1707 Treatment	Mean=15.55; Up to 46 yrs	Mean=6.6; Up to 16 YRS	<18 YRS	N/A (age range 0-75, median 12 YRS)
Duration of Follow-Up (years)	307	49	~14-20	1755
<b>Disease Outcomes: Benefit</b>				
Indication	Undisclosed	Undisclosed	DS, LGS, TSC	TRE
Responder Rate (>/=50% reduction in seizure frequency over 1 year period)	71% (24/34)	60% (6/10)	~45% @ 14 WKS	53% @48 WKS
1 YR Seizure Remission Rate (in patients with 1+ seizures in prior year with at least 1 year follow up post SP1707 treatment initiation)	44% (15/34)	40% (4/10)	6-7% @14 WKS	11% @48 WKS
Expected 1 YR Seizure Remission Rate	4-5%	4-5%	4-5%	4-5%
Increase in 1 YR Seizure Remission Rate over expected	~9X	~9X	~1.5X	~2X
<b>Disease Outcomes: Safety</b>				
Adverse Events	2% (2/82)	0% (0/13)	Up to 12%	7%

## Retrospective Data

**Efficacy in Primary Indication**  
(same seizure type vs EPIDIOLEX®)  
=34 adults & 10 pediatric patients

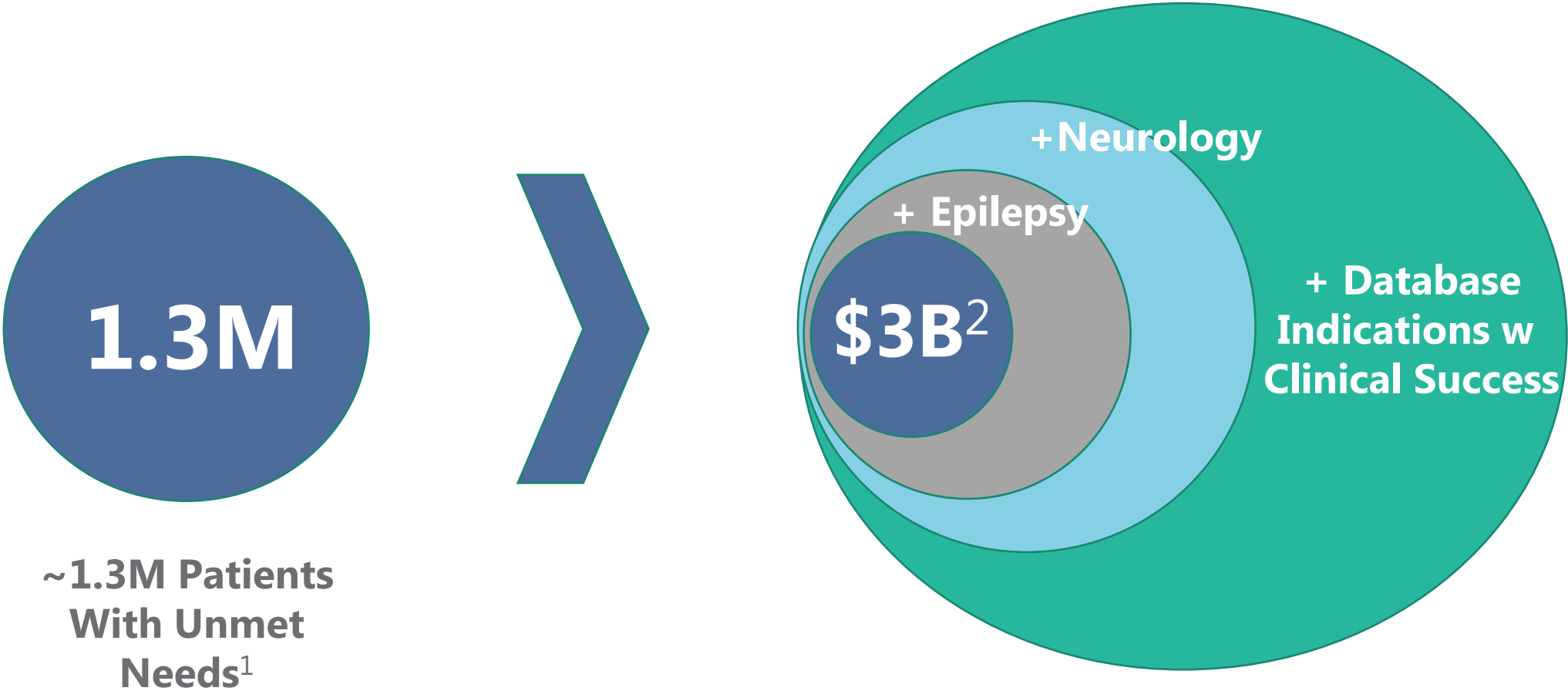
**Safety:** SP1707 total patients on active ingredient  
=82 adults & 13 pediatric patients

RCT = randomized controlled trial  
EAP = expanded access program  
N/A = not available  
SZ = seizures  
DS = Dravet Syndrome  
LGS = Lennox-Gastaut Syndrome  
TSC = Tuberous Sclerosis Complex  
TRE = Treatment-Resistant Epilepsy





# SP1707: Lead Candidate & Beyond



~1.3M Patients With Unmet Needs<sup>1</sup>

1. WJM. "Seizure Disorders: Part 1. Classification and Diagnosis". (USA, EU5, CAN, & AUS). 2. Internal Forecast



# Current Status

- **Provisional Patent application filed** related to the use of Shackelford's drug candidate for the treatment of seizure disorders, either alone or as adjunctive therapy. This application included **both** supportive preclinical data and real-world experience.
- **Pre-IND Meeting and response from FDA:** Complete
- **IND Submission:** planned H2 2023
- **Start of Phase 2:** planned H2 2023
- **CMC/Formulation Development:** underway to develop a proprietary sustained-release final formulation



# Summary

## Real World Experience

- Unique to Pharma Industry
- De-risks Drug Development
- Directs Pipeline Development

## Right People

- World-Class Team with Proven Track Record
- Strong Scientific Advisory Board

## SP1707 Opportunity

- Freedom to Operate Opinion
- Significant Unmet Medical Need
- Commercial Opportunity
- Robust Real-World Data (>350 patient treatment years)

## Strong Pipeline Potential

- Large Underserved Markets
- Near Term Additions Identified
- Opportunities Outside of Neurology



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**THANK YOU**

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