



Implementation of Early Identification and Treatment of At-Risk Sows

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Introduction: The Challenge of Sow Mortality

Industry Trends: U.S. sow mortality saw a significant increase of approximately 50% between 2012 and 2022. (Figure 1)

Labor Constraints: As herd sizes have expanded and labor forces have declined, routine evaluation of females during the breeding and gestation phases is often overlooked. Sows spend 85% of their reproductive life in breeding and gestation.

Critical Timing: Identifying at-risk sows too late often leads to treatment failure; intervention must occur early in the progression of illness to be effective.

Primary Mortality Causes: Industry data indicates that sow mortality is primarily driven by three categories: lameness, pelvic organ prolapses (POP), and sudden/unknown deaths.

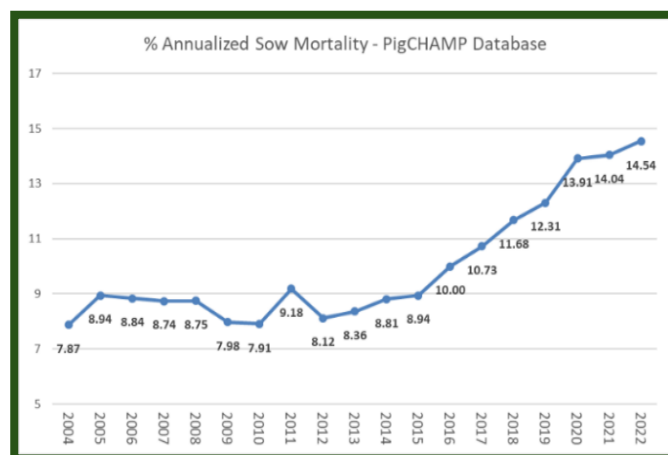


Figure 1

The "At-Risk" Identification Protocol in the Pig Livability Project

The core objectives: Transition from a "herd-level" view to a mindset of **observing every female, every day**. By focusing on this, can we see a reduction in sow mortality by increased emphasis on identifying and treating disadvantaged sows? What is the time requirement to do this daily? Can this protocol be transferred to the farm staff and continue to maintain the mortality reduction?

- **Early Indicators:** Anorexia or inappetence (failure to rise and eat during the morning feed drop) is the most reliable early signal of health issues or distress.
- **Execution of Identification:** A two-person team with one positioned in front of the stalls and one behind evaluate sows during the morning feed drop.
- **Rapid Assessment:** Evaluations of all animals must be conducted within 30 minutes, as sows typically lie back down quickly after eating.
- **Flagging System:** Sows that fail to rise during feeding are immediately flagged with a card on the stall and recorded on a daily form for later follow-up.
- **Secondary Evaluation:** Later in the day, staff return to flagged sows to conduct thorough physical exams including rectal temperatures. Treatments are then administered based on farm-specific protocols.

Impact and Economic Return

Case Study A: Large commercial sow farm

Mortality Reduction: An initial case study on a 4,000-head Midwest farm achieved a statistically significant reduction in annualized mortality of **4.25%**, dropping from **16.75% to 12.50%** (Figure 2).

- **System-Wide Success:** Subsequent implementation across the 200,000-sow production system (approximately 40 farms) showed a **mortality reduction of 3%**. (Figure 3)

Time Commitment: On average it will require a time commitment of 2 hours per day for 2 people to identify at-risk sows. This will vary based on herd size. Following up will take 1 hour per day for 1 person. **This calculates out to an additional 0.5 FTE (Full Time Equivalent), which is usually accomplished by re-allocation of existing labor.**

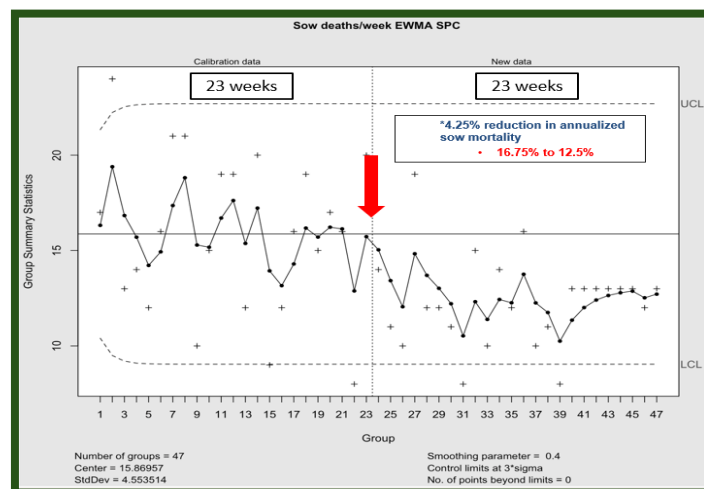


Figure 2

Return on Investment (ROI): What is 4.25% worth?

Using Iowa State University's [Economic Opportunity Model in Breed-to-Wean Swine Production](#)

(extension.iastate.edu/agdm) to consider opportunity cost of losing pregnant females, additional cull sow income, and fewer replacement females, a value of **\$50 USD** per sow was calculated, or roughly **\$240,000 USD per year** for a 4,800-sow farm. Assuming the sow farm produces 25 PSY, then this would be equivalent to **\$2.00 USD saved per wean pig**.

Case Study B: Production company

Protocols: Production company B (>150,000 sows) implemented the following protocols to prioritize individual sow care at their farms.

- Trained production managers on processes of individual pig care.
- Established goals and targets for the farm to work towards.
- Provided daily analytics on mortality with reasons for each animal.
- Used flashlights to look for wounds, particularly in feet and legs of all sows.
- Checked over every animal when loading into farrowing rooms and in wean rows in breeding barn.

Consistent Results: Company B saw a 3.5% reduction of sow mortality across the system (Figure 4). This shows us that implementing individual sow care consistently has significant positive outcomes across systems.

Case Study C: Production company with group sow housing (>100,000 sows)

Sow Retention Specialists: Production company C made one person responsible for improving sow mortality and retention by monitoring and treating at-risk sows identified daily by caretakers (Figure 5).

Key Management Conclusions

Timing over Specifics: Success was found across various farms regardless of the specific treatment protocol used, suggesting the timing of the identification is more vital than the specific medication or method chosen. **Early detection is key.**

Proactive Care: This approach utilizes the "Individual Pig Care" framework, treating sows at stage "A" (early) rather than waiting until they reach stage "C" (late).

Consistent and Repeatable Commercial Results: With minimal investment there is consistent payback and return on re-prioritizing labor with emphasis looking at every sow, every day and identifying and treating at-risk sows.

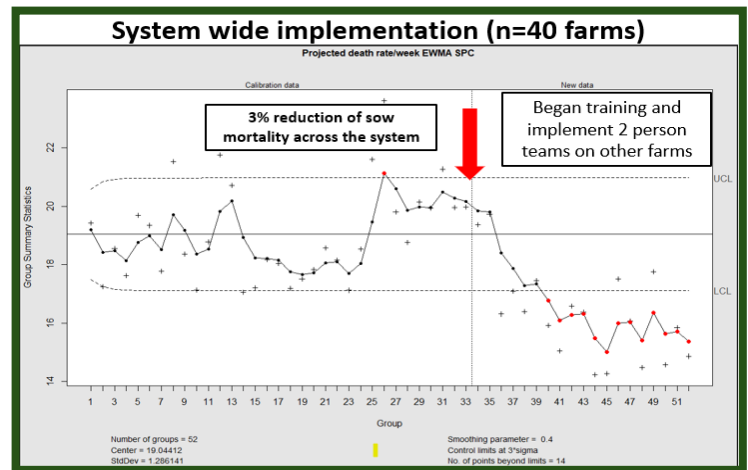


Figure 3

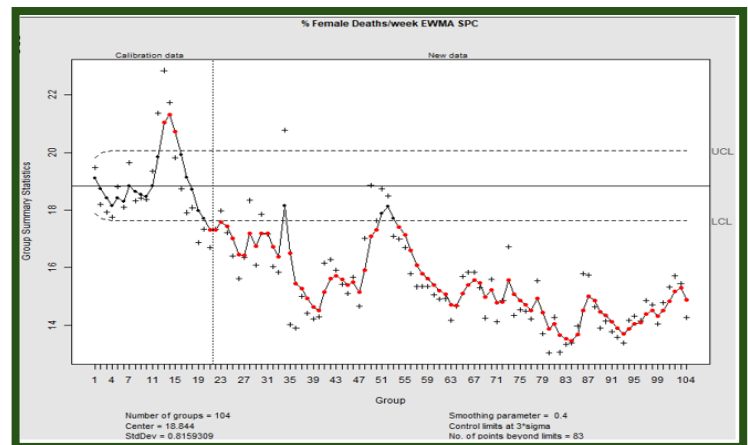


Figure 4

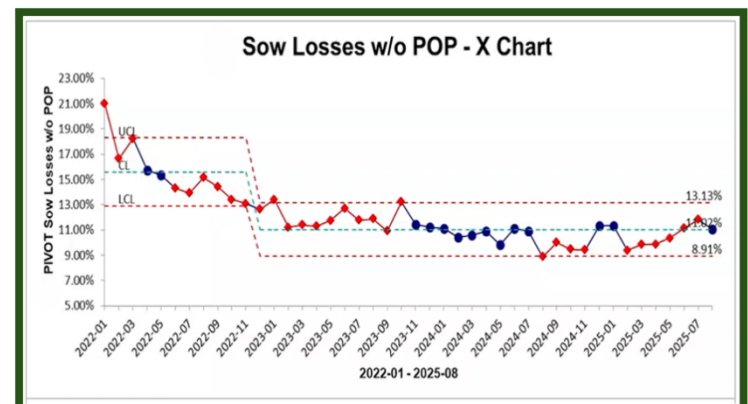


Figure 5

Additional Resources: Educational videos, fact sheets, and Standard Operating Procedures (SOPs) are available at www.piglivability.org. For implementation support, contact the Iowa Pork Industry Center at ipic@iastate.edu