What does the FUTURE hold?

AGSD Houston Sept 21 2019
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Patient Registries

Rare Disease Registries (RDRs)

- Inform the natural history of a disease
- Capture the variability of the patient population
- Seek to understand the ‘patient experience’
- Connect those affected by a rare disease with researchers who study them
- Central resource for researchers to recruit research participants

  -> Accelerate research
- Inform researchers about the effectiveness of certain treatments
- Develop Standards of Care

Euromac

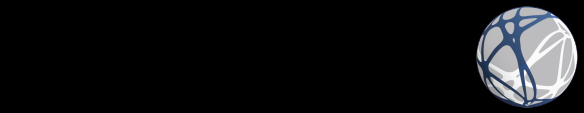
- EUROMAC is a registry of patients affected by McArdle Disease and by other forms of rare neuromuscular glycogenosis where exercise intolerance is the main symptom
  - International Registry
  - Clinician and patient entered data

📍 Given the ongoing CHALLENGE of registering patients, IamGSD has researched alternative solutions

Sanford Research

SANFORD RESEARCH

- A non-profit research organization that is part of Sanford Health, an integrated health system headquartered in the Dakotas.
- Sanford Health is one of the largest health systems in the nation with a presence in 26 states and nine countries
- With a team of more than 250 researchers, Sanford Research supports basic, translational and clinical research in diverse areas including RARE DISEASES

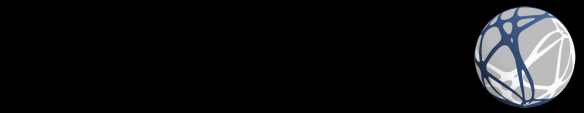


CoRDS Registry

Coordination of Rare Diseases at Sanford

CoRDS

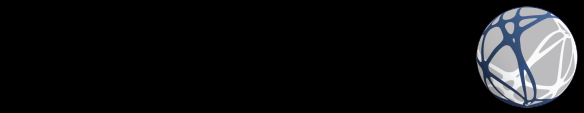
- A centralized international PATIENT REGISTRY for all rare diseases
- Work with patient advocacy groups (IamGSD), individuals and researchers
- Capture (de-identified) health information from individuals with a rare diagnosis, undiagnosed patients, unaffected carriers or at-risk patients
- Connect researchers and patients
- Notify participants of upcoming clinical trials.
- Participants can enroll for free and researchers can access deidentified data for free
- Similar to the EUROMAC but only captures patient entered data



CoRDS

- IamGSD is in the beginning stages of developing questions for a PATIENT REGISTRY for muscle GSDs
- Supplement EUROMAC registry
- Plan to launch a RDR for muscle GSDs in early 2020
- Updates will be available at iamgsd.org and on McArdle Disease FaceBook group

To learn more about how CoRDS
http://bit.ly/CoRDS-FAQs



Gene Therapy

McArdle Disease

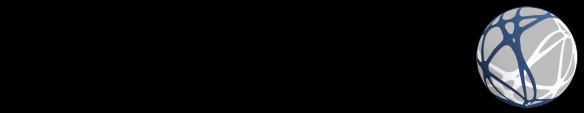
- Goal of gene therapy is to repair the defective gene so that enzyme is produced in affected tissues
- Proof of concept studies in animal models
  - Charlois cattle 
  - Merino sheep 
  - Mouse 

McArdle Disease

- Ovine GSDV model has been used to test gene therapy and pharmaceuticals (valproate)
- Adenovirus 5(Ad5) and AAV vectors expressing myophosphorylase were both used with some efficacy in sheep
- Recombinant adeno-associated virus serotype 8 (rAAV8) to treat mouse model -> intraperitoneal injection of rAAV8-Pygm 1-3 days postnatal, resulted in PYGM expression at 8 weeks of age and improved skeletal muscle architecture, reduced accumulation of glycogen, and restoration of voluntary running wheel activity -> next step to test in ovine large animal model

Sun et al (2015); McNamara et al (2019)

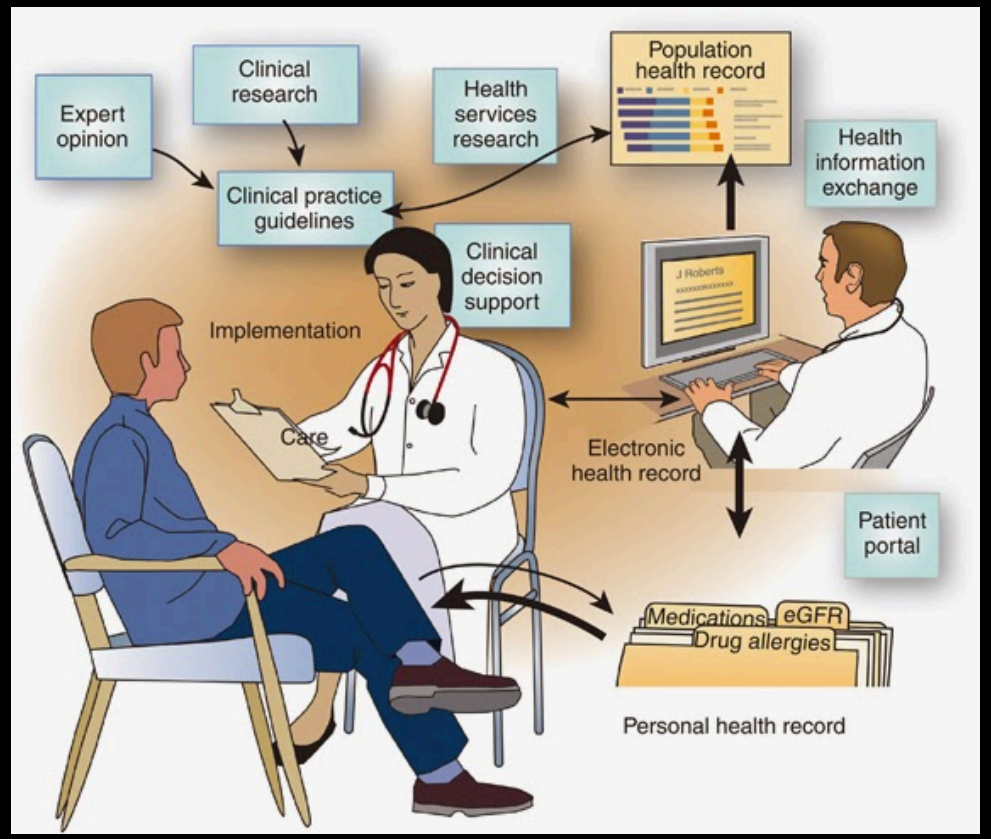
Clinical Practice Guidelines (CPGs)



Institute for Healthcare Improvement

Clinical practice guidelines (CPGs) are statements that include recommendations intended to optimize patient care.
They are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care option

Clinical Practice Guidelines

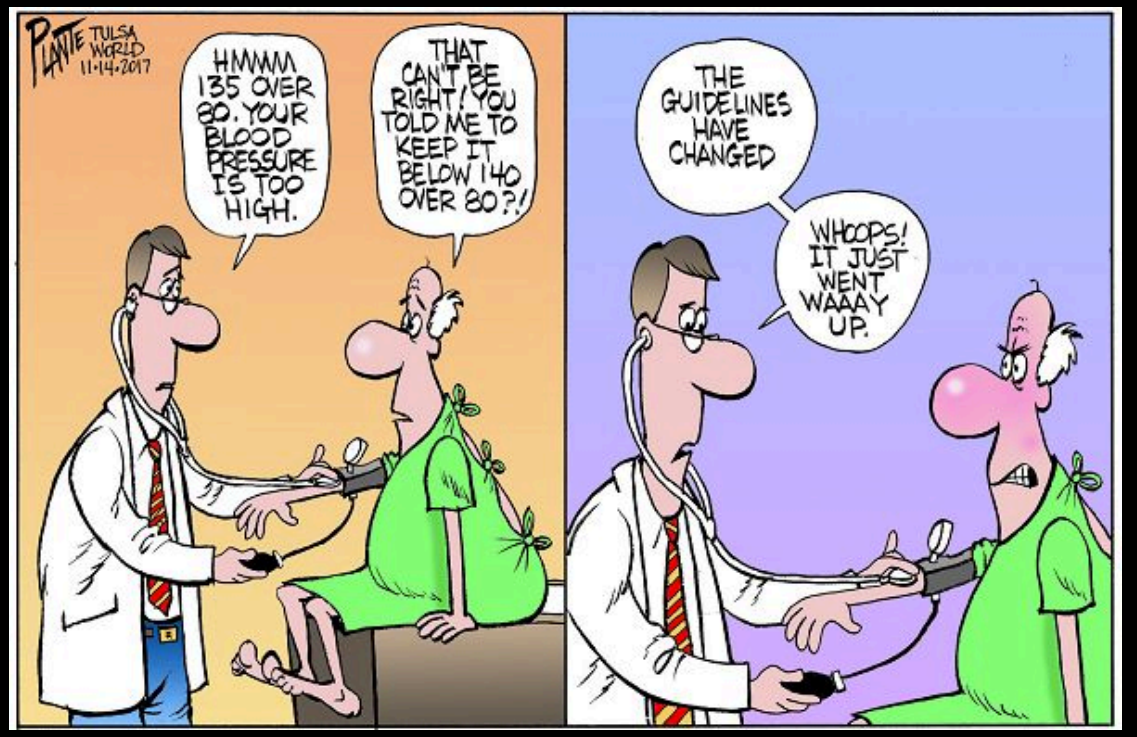


- Support the diagnostic process (mis-diagnosis/late diagnosis)
- Provide a blueprint for evidence-based care
- Increase quality of care
- Improve health outcomes (reduce morbidity and improve quality of life)
- Promote consistency of care
- Empower patients to make informed healthcare decisions
- Influence public policy – i.e. Centre of Expertise
- Research opportunities - address gaps in evidence

Woolf et al (1999)

CONSIDERATIONS

- Guidelines may be wrong or not applicable to ALL patients (clinical heterogeneity)
  - Limited research in RD
- Guidelines should be flexible in order to accommodate ALL patients -> options, shared decision making
- Patient perspective should be incorporated
- Need to balance cost/limited resources/patient needs/evidence based research



Clinical Practice Guidelines

Example - McArdle Disease

CPGs may include the recommendation to improve aerobic capacity

CPGs should not include dietary recommendations (at this point) as there is not enough clinical evidence to support a specific dietary strategy

- Patient Registries
- Gene Therapy
- CPGs
- US Walking Courses
- US Strength Training Sessions
- Updated Website
    - Comprehensive Online Resource
- Nutrition Workshop Paper (2018)
- North American versions
    - 101 Tips & Medical Overview

References

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