



# Week 14

# Practical 1

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# TODAY

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- The Medguide demo system
- Technology used
- Suggested group plan
- Draw group assignment
- Group membership adjustment
- Documents required

# Medguide knowledgebase

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- [http://medguide.demo.biomedtzc.cn/haining\\_biomed/](http://medguide.demo.biomedtzc.cn/haining_biomed/)

- A knowledgebase

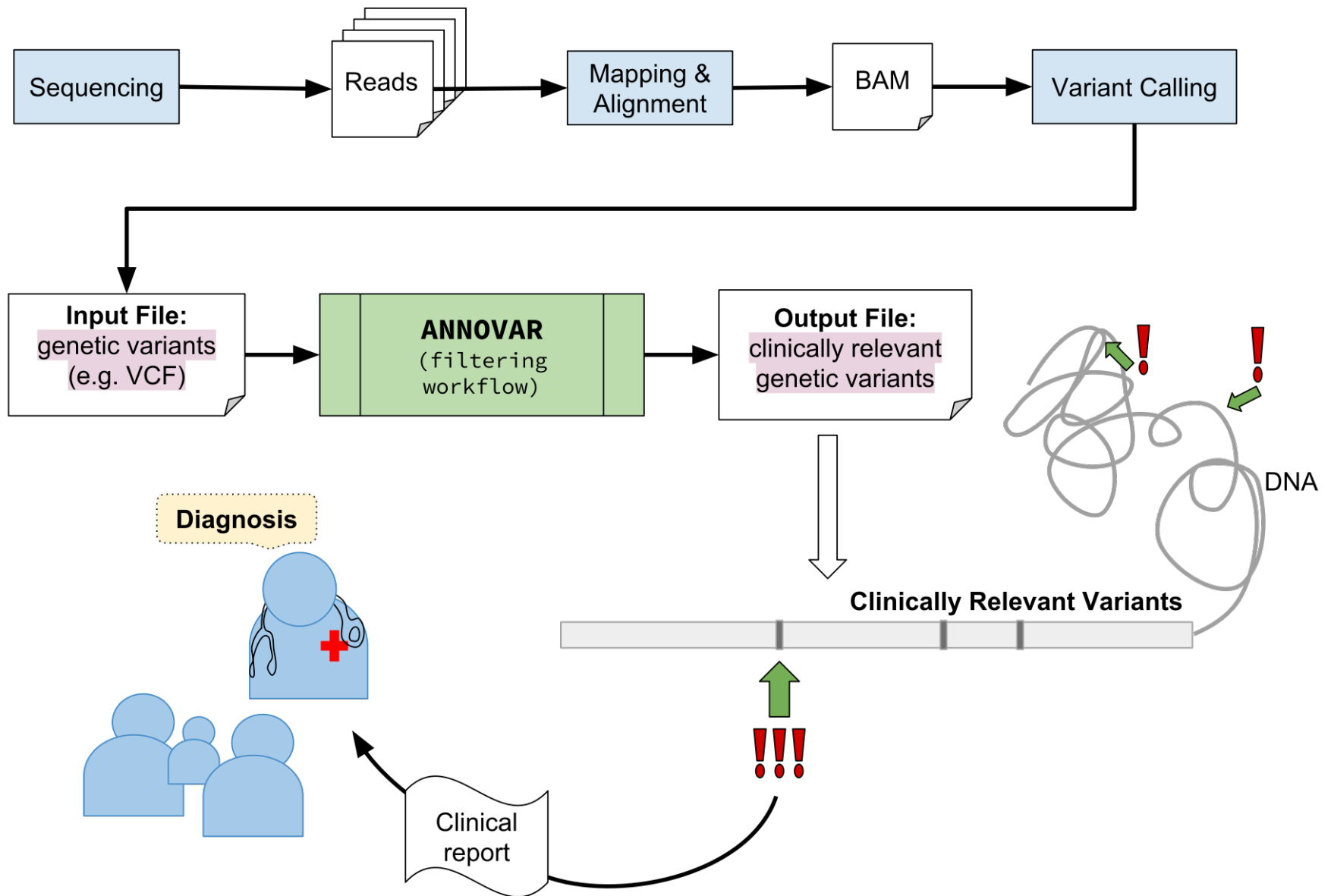
Dosing guidelines from PharmGKB

<https://www.pharmgkb.org/downloads>

- A query system

Search with AnnoVar mutation report

# The overall workflow



# Variant calling

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6756534/>

Variant analysis pipeline for accurate detection of genomic variants from transcriptome sequencing data

fastq (sequencing data) -> vcf (variant data)

-> TSV (variant annotation)

# Query system

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Search with an uploaded TSV  
(variant annotation file)

Output related drug label

Hint: if you only need exotic variants  
`grep exonic annovar_output.txt > medguide.txt`

# Technology used

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- MySQL 8.0+ or other relational database / JDBC
- Java SDK 11+
- JetBrains IDEA or Eclipse (IDE)
- Servlet & JSP (dynamic webpage)
- JSTL (template)
- SLF4J (logging framework)
- Gson (data passing mechanism)

# Suggested group plan

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- Sequence analysis (1 person)
- Data and database development (1 person)
- Web service development (1 person)
- Test development (1 person)
- Document development (1 person)



# Draw group

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- Each student pick up a number
- Group adjustment
- Roll book

# Document requirements

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- Software development document

requirements/design/code/test/deployment/publish/maintain

- Weekly meeting records

Plan/review

See you next year

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**Thanks!**