Translation of Next Gen Sequencing to the Clinic

Data → **Information** → **Knowledge**

Raw sequence

Assembled and annotated data

Information applied to particular purpose

To identify leverage | pressure points—presenting both opportunities and problems—the NGS clinical translation process should be viewed as analogous to a manufacturing plant.

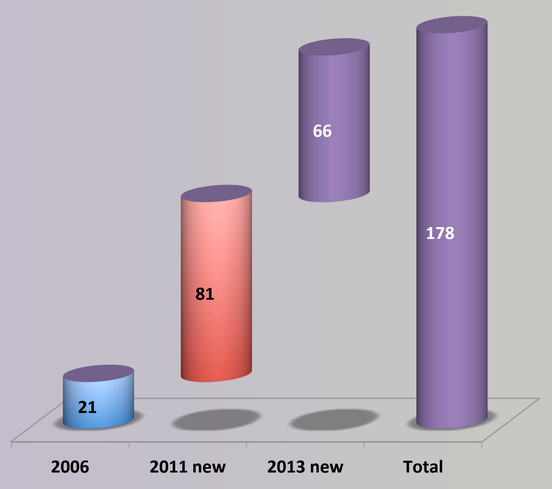
For opportunities or leverage points, follow the work in process (WIP). Where there is too much, new capacity is required downstream to convert it into useful information. This is often through new software, but can be through new instrumentation, or even clinical data.

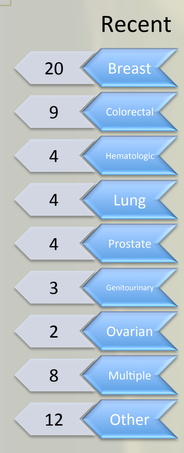
At any time, there will be over and under capacity for various stages, e.g., too much raw sequence data | too few assembled genomes | fewer clinical databases | yet fewer translationally trained doctors | insufficient integration among genetics, drugs and regulatory.

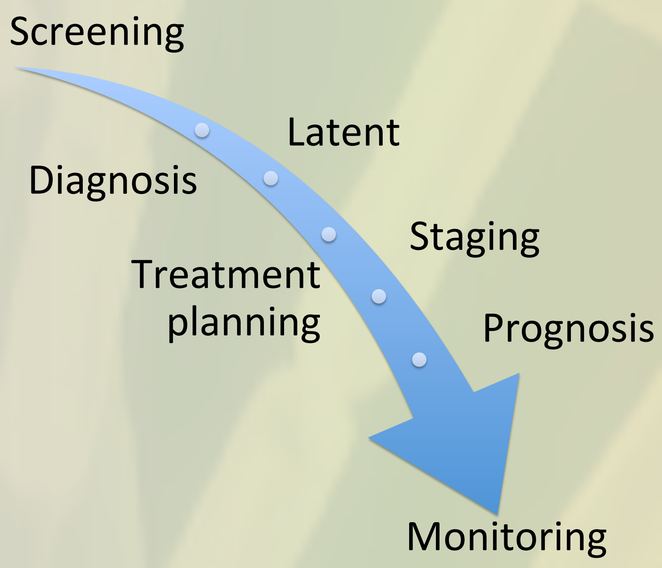
Different vendors and users will likely be honed for various steps in the process, not fully integrated. Some may choose to integrate, but that is likely best done through acquisition of the best-of-breed.

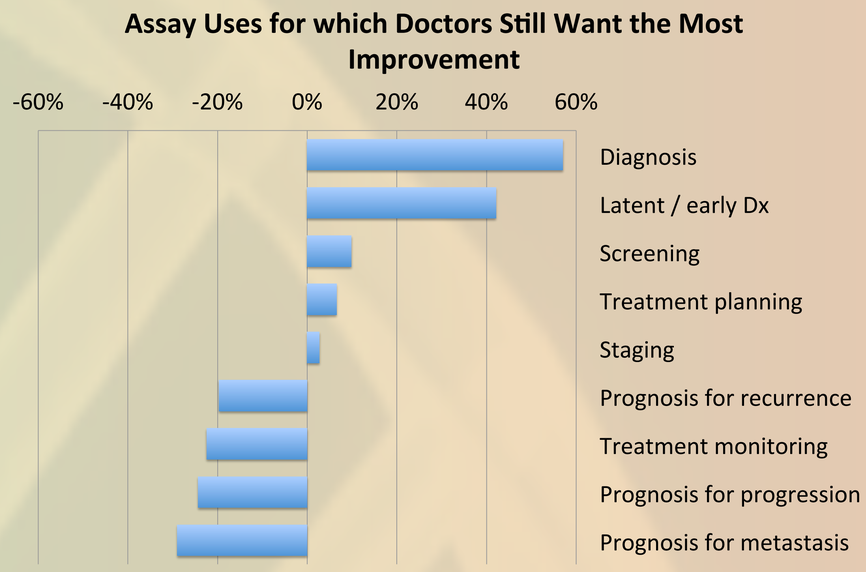
The balance will not always stay the same. It is likely there will yet be an oversupply (not just overproduction) of sequencing capacity. Sequencer and reagent growth might stall. Clinical databases will catch up for some conditions, and not for others. For some medical specialties, use of genetics will come before it does for others. Regulatory and reimbursement will lag always.

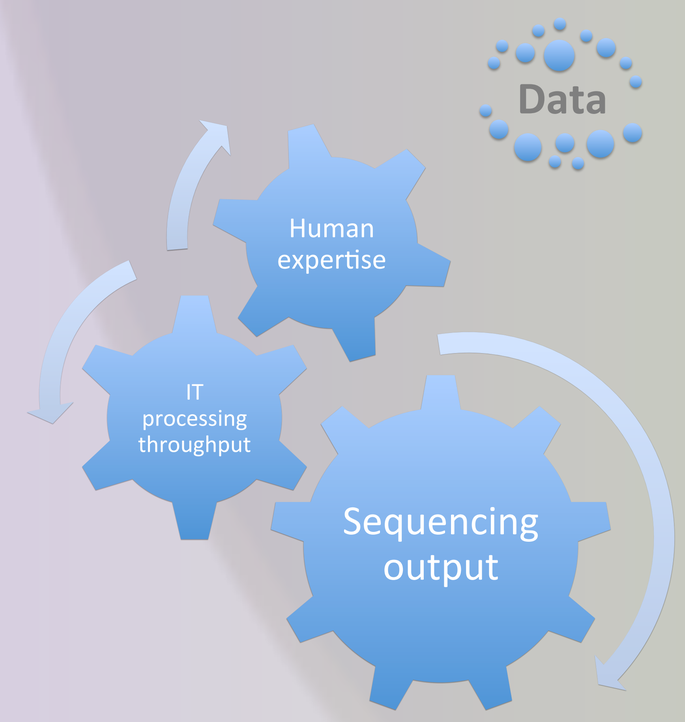
Genetic Tests related to Cancer

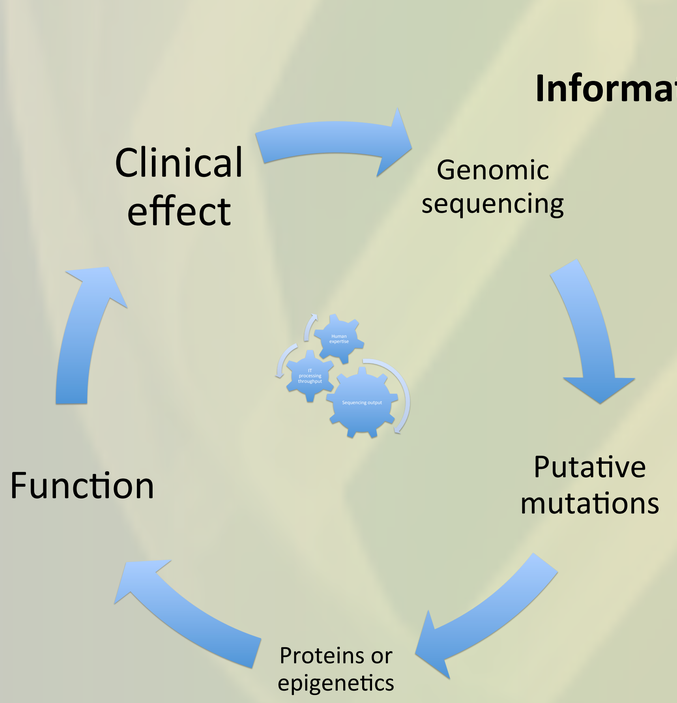


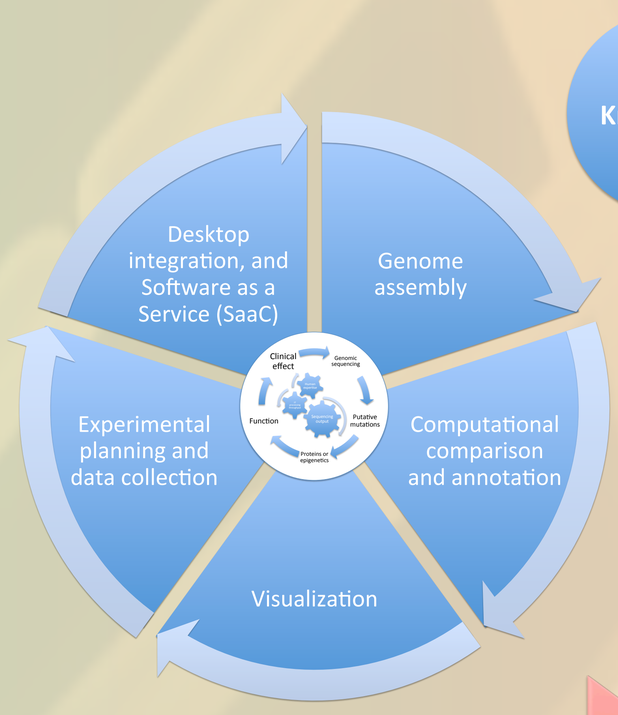












Integrate medical condition with information on genetic variation, and protein function.

Provide through a user-friendly query and visualization interface.

Data source: Surveys, AHRQ