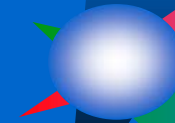


Health  
and  
Everything



# Data, Meaning and Strategy in Work Force Planning

*King's* Fund

Canada Study Tour  
National Workforce Group  
Toronto  
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# Five Short Topics

- Traditional Strategic Planning
- Simple Complicated and Complex Systems
- Demand Management
- Doctors Pay
- Nurse Planning in Complex Systems

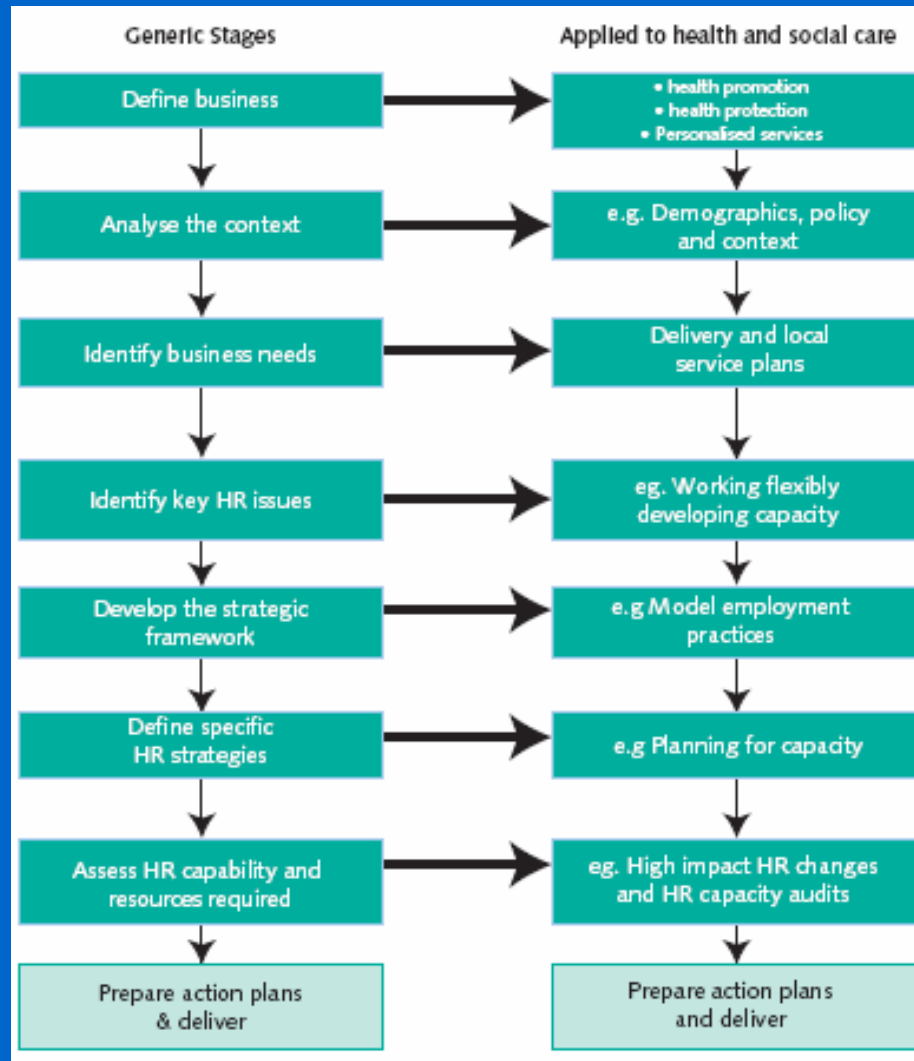


# Standard Steps in Strategic WF Planning

1. **Organize and mobilize strategic partners:** Locate and enlist key players within the organization and among customers.
2. **Set vision, mission, value, and objectives:** Compose vision, mission, values, and objective statements that provide a foundation for defining and implementing strategic plans.
3. **Review organizational structure:** Examine current workforce demographics, competencies, and workload.
4. **Conduct business process reengineering:** Analyze and redesign processes across the organization.
5. **Set measures for organizational performance:** Define how the organization will know when and if it has succeeded.
6. **Position HR to be an Active Partner:** Put HR leaders in the front of the strategic planning effort.



# NHS Guidelines for WF Planning





## *Simple*

Following a Recipe

- The recipe is essential
- Recipes are tested to assure replicability of later efforts
- No particular expertise; knowing how to cook increases success
- Recipes produce standard products
- Certainty of same results every time
- Optimism re results

## *Complicated*

A Rocket to the Moon

- Formulae are critical and necessary
- Sending one rocket increases assurance that next will be ok
- High level of expertise in many specialized fields + coordination
- Rockets similar in critical ways
- High certainty of outcome
- Optimism re results

## *Complex*

Raising a Child

- Formulae have only a limited application
- Raising one child gives no assurance of success with the next
- Expertise can help but is not sufficient
- Every child is unique
- Uncertainty of outcome remains
- Optimism re results



## ***Complicated*** **Chem Mech Diseases**



## ***Complex*** **Chronic Diseases**

- Abrupt onset
- Often all causes can be identified and measured
- Diagnosis and prognosis are often accurate
- Specific therapy or treatment is often available
- Technological intervention is usually effective: cure is likely with return to normal health
- Profession is knowledgeable while laity is inexperienced
- No Voluntary Sector Associations for these condition e.g. Small Pox, Knee Replacement,

- Gradual onset over time
- Multivariate cause, changing over time
- Diagnosis is uncertain and prognosis obscure
- Indecisive technologies & therapies with adversities
- No cure, pervasive uncertainty: management, coaching & self care over time is needed to improve health
- Profession & laity must be reciprocally knowledgeable to improve health
- Voluntary Sector Associations are widespread and help define the distinction: Heart and Stroke, Asthma, Diabetes etc.



## Complicated World View

Orderly Laws of Nature  
Linearity  
Simple causality  
Equilibrium  
Reversibility in time  
Determinism  
Certainty  
Closed systems  
Noise and fluctuations suppressed  
Averages always dominate  
Structural constancy  
Analysis/reductionism  
Reductive characteristics  
Convergent thinking  
Assumed predictability

## Complex Adaptive World View

At the edge of Disorder  
Non-linearity  
Mutual causality  
Non-equilibrium  
Irreversibility (time's arrow)  
Probabilistic  
Uncertainty  
Interactive systems  
Opportunity seen in noise and fluctuations  
Exceptions dominate near critical thresholds  
Evolution/structural change  
Holism/synthesis  
Emergent characteristics  
Divergent thinking  
Predictability severely limited by instability



## Old Strategic Planning

- People identical
- General Standards critical
- Closed system: no externalities
- Elements are quantities
- Seek determinate measures
- Everything tends to equilibrium
- Viewed as complicated
- Planning as soft engineering

## New Strategic Planning

- People are different
- Local conditions critical
- Externalities the driving force
- Elements are patterns
- Identify possibilities
- System is on the edge of time, coalesces changes, decays.
- Viewed as complex
- Planning as emergent





# Example I: Demand Management

- Laws of Supply and Demand occur in the context of complicated systems with clear definite rules
- They presuppose rational purchasers and a limited number of variables
- These systems can be said to be complicated



# Definition of Supply

- **Supply:** The willingness and ability to **sell** a range of quantities of a good or service at a range of prices, during a given time period
- An **increase** in supply with constant demand will decrease prices.
- A **decrease** in supply with constant demand will increase prices.



# Definition of Demand

- **Demand:** The willingness and ability to **buy** a range of quantities of a good or service at a range of prices, during a given time period.
- An **increase** in demand with constant supply will increase prices.
- A **decrease** in demand with constant supply will decrease prices.



# Definition of Equilibrium

- **Equilibrium:** The state that exists when opposing forces exactly offset each other and there is no inherent tendency for change.
- In cases of **surplus** as market price goes down, the quantity demanded will go up and the quantity supplied will go down until the quantity demanded equals the quantity supplied, at which point the surplus is eliminated and a market equilibrium is established.
- In cases of **shortfall** as market price goes up demand goes down, until the quantity supplied equals the quantity demanded, at which point the shortfall is eliminated and a market equilibrium is established.



# In Health Care

- The supply demand laws do not seem to work in the same way
  - “Health services are supply driven”
  - “There is an infinite demand for health services”
  - “Health services are complex”



# Supply applied to Doctor Visits

- An increase in the number of doctors in an area with constant population will decrease visits per doctor.
- A decrease in the number of doctors in an area with constant population will increase visits per doctors.



# Supply applied to Doctor Visits

- In the case of an increase in the number of doctors in an area with constant population demand, the number of visits per doctor does not tend to change.
- This is true independent of how doctors are paid.
- How can this be?



# Thresholds

- A medical rule of practice:
  - Provide the best possible care for your patients using all available resources.
- Available resources change
  - The medical rule of supply
    - If more resources are available and their use can improve care, use them.
    - If fewer resources are available and their shortfall does not substantially damage care, withhold them.
- Glouberman's Law:
  - The threshold of intervention adjusts to use all available resources





# Three Cases

- 1. Doctor has fewer patients because of increased supply of doctors
- 2. Steady State
- 3. Doctor has more patients because of decreased supply of doctors



# Fewer Patients

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “Come back and see me in 2 weeks”
- This assures that no symptoms remain and that nothing else was masked by the bronchitis.
- Low threshold of intervention because visits are available



# Steady State

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “See me if this condition persists after 2 weeks”
- This assures that patient is seen if condition continues and that medication can be adjusted.
- Medium threshold of intervention



# More Patients

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “Call for a new prescription if this persists after 2 weeks”
- This assures that medication is continued and if patient does not improve over another period of time she will be seen.
- High threshold of intervention



## Supply Reduction Masquerades as Demand Reduction

- HMOs in the US gave doctors bonuses if they reduced patient demand.
- The easiest way to reduce such demand was to make it more difficult for patients to see them or to raise the threshold of intervention.
- Is this reducing demand or supply?.
- The end data shows fewer patient visits



# Supply Increase Spurs Demand

- Scope of health care increases
  - Far more alternate therapies
  - Technologies to defer aging
  - Introduction of pharma-nutrition
- More effective drugs
- More accurate diagnostic technologies
- More innovative surgical interventions
- All result in new demands



# Other Examples

- More obstetricians = more C-sections
- More general surgeons = more general surgery
- More Diagnostic Technology = more diagnostic interventions
- More services = Greater use of services
- Corollary to Glouberman's Law
  - Increasing supply of health services increases demand



# NHS Direct and Demand Reduction

- NHS Direct
  - Even with Large Uptake
  - Little reduction in use of emergency rooms
  - As emergency rooms become less crowded and the wait is shorter, more people come to them. (The supply demand of equilibrium)





# Example II: Doctors Pay

- This example studies how doctors are paid
- Considers first who becomes a doctor
- Looks at complicated and complex accounts of incentives for doctors



# Who Becomes a Doctor

- Among top 5% of students
- Oldest child
- Strong altruistic desires to make things better for others
- Expectation that they will live upper middle class life styles
- Expectation that they will be respected members of their community



# How Doctors Are Paid

- Standard Complicated Assumption:
  - Doctors are economic “rational agents” who seek to maximize income
  - More pay alone will provide incentives for Drs
- Complex Reality:
  - Drs have multiple, complex and changing objectives
  - They work to target level not maximum income
  - Other incentives are also emerge
    - Respect?
    - Intellectual incentives?
  - New strategies emerge

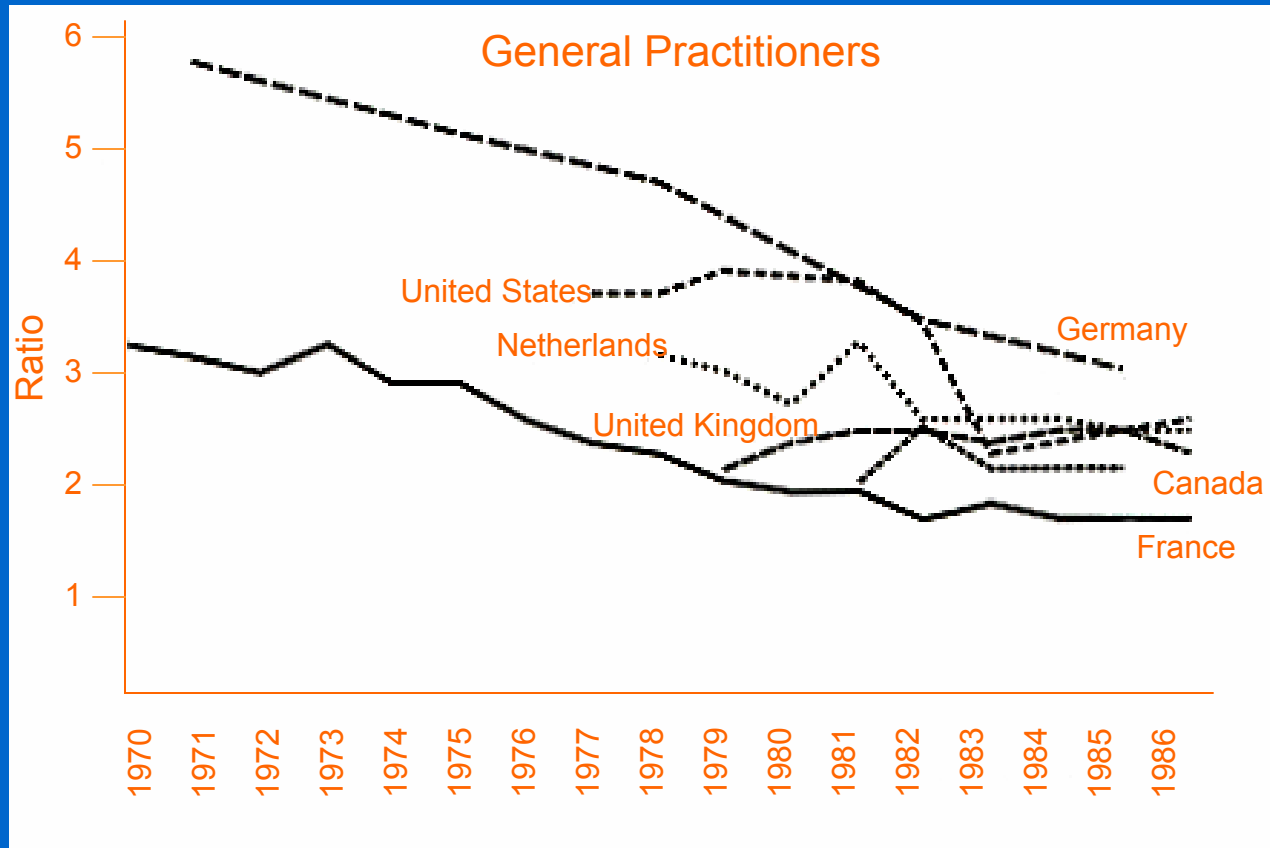


# How Doctors are Paid

- England
  - Consultants: Annual Salary + Private Income
  - GPs : per patient + various incentive plans
- Canada
  - 95% of Drs - Government funded Fee for Individual Acts
- Old Soviet Union
  - Annual Salary + Under the table payments
- Other Countries
  - Range from entirely fee for service to entirely annual income



# Ratio of average net pretax income per physician to national average wage





# Some Peculiar Facts

- Private Work parallels living costs
  - And demands of lifestyle
- Changing status changes intake
- Concern for respect leads to unrest
  - Unhappy doctors for one reason seek other recompense
- Excessive standardization leads to intellectual and practice stagnation



# Some Motivations of Doctors

- To make their patients better
- To make use of their intellectual capacity
- To be respected in their professional and social communities
- To achieve a stable upper middle class income



# Incentives for Doctors

- Assume that they want to improve health
- Assure an upper middle class income
  - Related to local lifestyle rather than absolute income
- Do not threaten respect from community
  - Do not attack their motivations
- Allow adequate space for continued intellectual stimulation
  - Through increased collaboration
  - Through intellectual challenges





# Strategic Planning for Nursing

- Every number of years there is a panic about not having enough nurses.
- “Even if all secondary school graduates enter nursing, there will still be a shortfall”
- Often within a year of this kind of study, nurses are laid off



# Rabbits/Foxes Prey/Predator Cycle

- Step 1: A constant food supply allows the rabbit population to grow
- Step 2: The foxes prey on the rabbits to increase the fox population
- Step 3: When the rabbit population has been reduced sufficiently, and the foxes (which are assumed to eat only rabbits) have become too numerous, the foxes begin to die off for lack of food.
- This makes it possible for the rabbit population to begin increasing again via step one.
- The whole population cycle then repeats itself.
  - (The Lotka-Volterra model)
    - 1.  $A + X \rightarrow 2X$
    - 2.  $X + Y \rightarrow 2Y$
    - 3.  $Y \rightarrow D$



# Prosperity/Deprivation Cycle

- Step 1: Demand rises & jobs opportunities go up
- Step 2: The need to find workers drives pay up
- Step 3: When pay goes up enough this forces prices and the result is decreased demand. So workers are let go and job opportunities fall. Prices then drop
- This makes it possible for demand to rise once again and a return to step 1
- The cycle then repeats itself



# The Nurse/Prosperity Cycle

## Good Times

- Family income grows
- Many job opportunities
- Other careers possible
- People leave nursing
- Recruiting Problems

## Bad Times

- Less family income
- Few job opportunities
- Career close downs
- Nurses return
- Oversupply Problems

**Dire Demographics**

**Dire Economics**

**Panic Planning**



# Some Secrets of Nurse Planning

- Who becomes a nurse?
- What do nurses want?
- What attracts them to nursing?
- What would keep them in nursing?
- Why do they leave nursing?
- What would bring them back to nursing?



# How do we answer these questions