

# A Discussion About Implementing Diagnosis Related Groups (DRGs) in Bulgaria for Hospital Financing

*Input and Preparatory Discussions to  
Create DRG Simulations and an Implementation Action Plan*

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# Purpose and Agenda

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## ■ Purpose

- The Bulgarian Government has asked the World Bank to prepare a draft DRG implementation action plan. To do this, we believe the following is necessary:
  - Information and Discussion about DRGs, Common Concerns, and Bulgaria's Readiness
  - A group of people to work together on technical issues, and
  - Data and decisions so we can provide simulations and an implementation action plan

## ■ Agenda

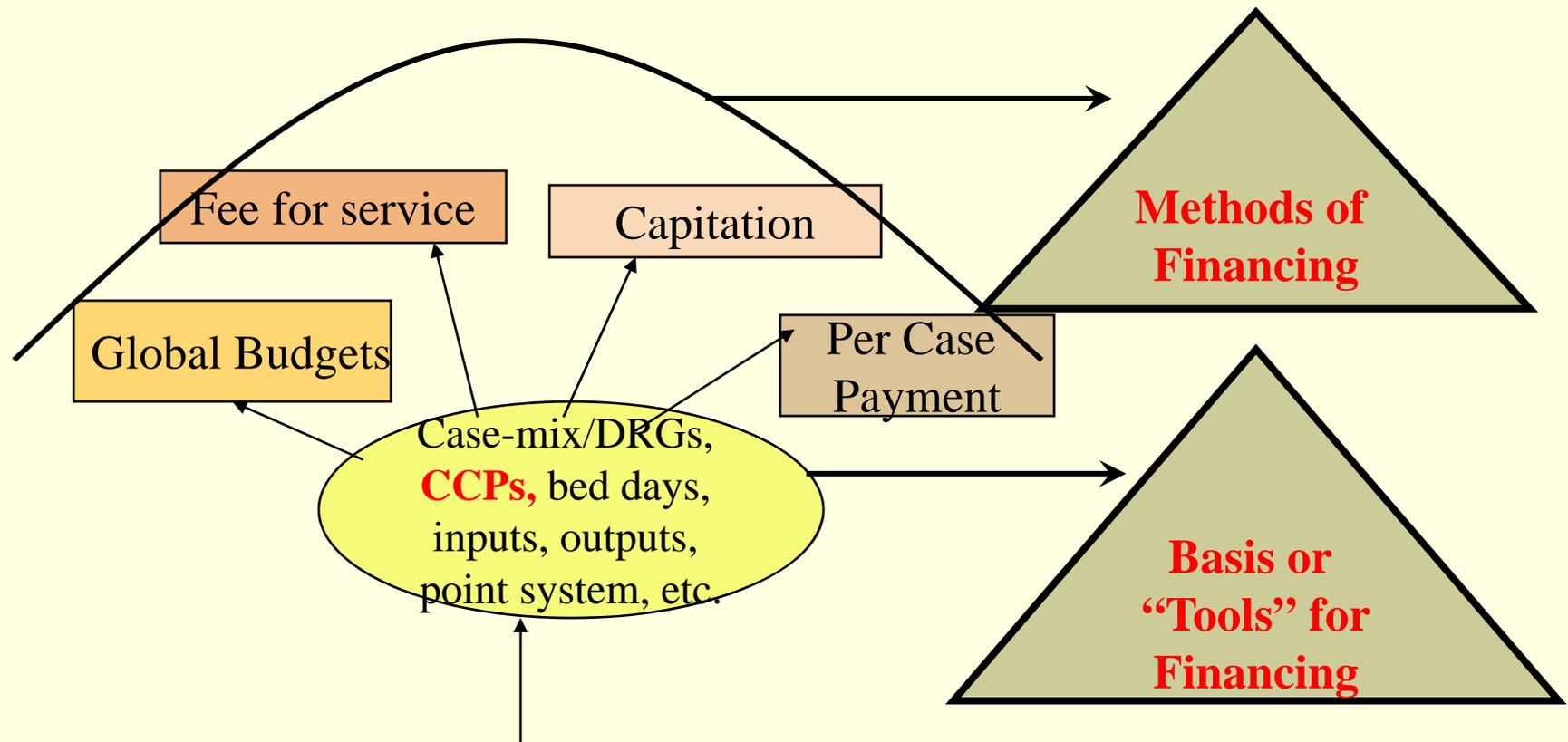
- Part I: Understanding Case-Mix, DRGs, and Usage Around the World
- Part II: DRG-Based Financing System Technical Requirements and Bulgaria's Readiness
- Part III: Addressing DRG Concerns & Possible Next Steps for Bulgaria

# New Mechanisms and Tools for Health Care Financing Should:

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- Distribute limited resources objectively and equitably
- Improve access to healthcare services
- Enable services to be provided in the most appropriate setting
- Minimize inefficiency and waste
- Minimize administrative and clinical burden
- Strengthen the information available for decision-making
- Facilitate the process of continuous quality improvement so that high quality healthcare is being provided

# Financing Methods vs. Financing Tools



**Accurate and Complete Clinical and Cost data Ideally at the Patient Level is Necessary to Support Any Method of Financing Selected!**

# What is Case Mix?

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- Case-mix is a **tool** that categorizes hospital cases based on similar clinical and cost characteristics in order to:
  - Measure the types of patients hospitals are treating (i.e., mix of cases rather than only volume)
  - Measure “resource intensity” differences of treated patients across hospitals
  - Distribute limited resources in a fair and equitable manner based on hospital output rather than input factors being met
- The **most common case-mix tool** used around the world is based on groups of diagnoses and procedures, called **Diagnosis Related Groups (DRGs)**
- Case-mix is NOT a tool meant to:
  - Cut money to hospitals
  - Control doctor or dictate clinical decision-making for them

# Classic Characteristics of a Case-Mix Classification System

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- Medically/clinically meaningful groups
- Resource homogenous/similar groups
- Groups created using routinely available and objective data that can be validated
- Groups should be manageable (not too few or too many) without compromising clinical or resource homogeneity and creation of new groups justified by statistical analyses and clinical input

# Brief Background on the Development of Diagnosis Related Groups (DRGs)

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- DRGs is a tool to relate the types of patients a hospital treats to the costs incurred or resources expended by placing patients in similar groups based on their diagnosis and procedures
- DRGs were created using basic data elements, clinical, and economic input, in order to create medically and statistically meaningful groups
- Costs involved in producing different cases were reviewed and where costs differed significantly, new groups were created
- Today there are many adaptations of the original DRG system created in the U.S. and groups range from 500 to 1000+

# Data Elements Typically Used to Assign Cases to DRGs

## ■ Codes

- Principal diagnosis
- Secondary/additional diagnoses, to address complications and comorbidities
- Surgical Procedures

## ■ Patient age

- Or Admission Date and Date of Birth

## ■ Discharge status

- Patient died,
- Patient transferred, etc.

## ■ Sex/Gender

## ■ Length Of Stay

- Based on admission data and discharge date

## ■ Same-day status

## ■ Newborn admission weight

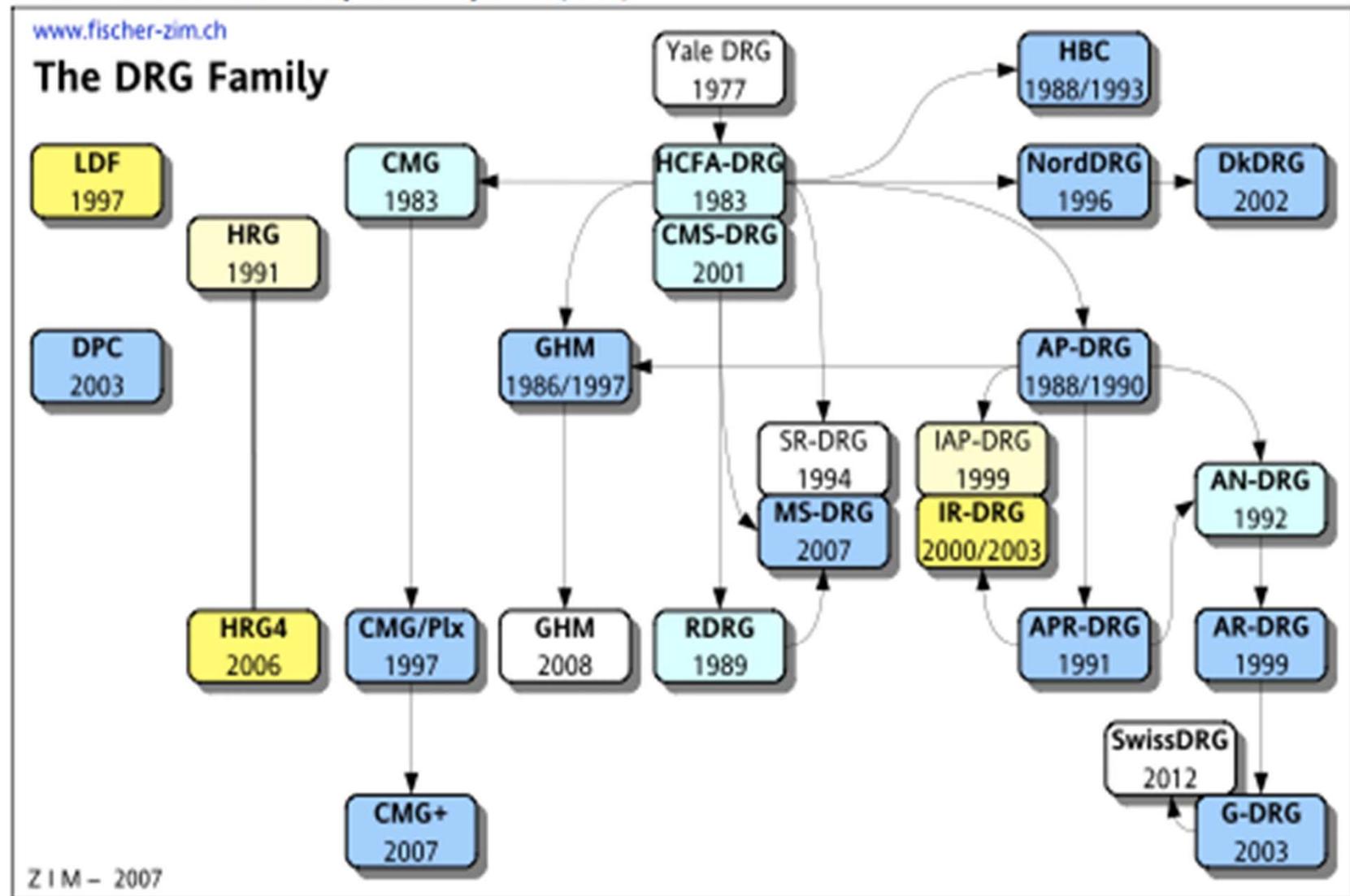
- For age 28 days or less, plus older if less than 2500 grams

## ■ Mental health/legal status

- Voluntary or involuntary

# International DRG Development

Table 1: The Extended Family of DRG Systems (2007)



  procedure driven  
   diagnosis driven  
  proc. / out of use  
   diag. / out of use  
  prototype / not in use

# Who is Using or Studying DRGs?

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- Estonia
- Australia
- USA
- France
- Portugal
- Canada
- Ireland
- Italy
- Spain
- Germany
- Hungary
- Czech Republic
- Bulgaria
- Romania
- Slovenia
- Moldova
- Georgia
- Switzerland
- England
- Costa Rica
- Iceland
- Norway
- Sweden
- Denmark
- Finland
- Belgium
- The Netherlands
- Japan
- Singapore
- Malaysia
- Thailand
- Korea
- Taiwan
- China
- New Zealand
- Turkey
- South Africa
- Latvia
- Lithuania
- Ghana
- Many Others

# Why Are So Many Countries Using or Studying Case-Mix/DRGs?

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- Financing has been the primary use of DRGs because Countries:
  - Cannot afford to stay with fee-for-service or open-ended payment systems where expenditures continue rising rapidly
  - Want to distribute limited resources objectively and equitably
  - Want to eliminate waste
  - Want to create incentives so providers deliver cost-effective, high quality care
  - Want to create shared risk between the payer and provider
- Case-Mix/DRG Uses Beyond Financing Include:
  - Creating transparency to minimize fraud, abuse, and waste
  - Benchmarking and quality-monitoring within and across hospitals and countries
  - Creating standard of medical practice/clinical paths/protocols
  - Research (epidemiology, economics etc.)
  - Others

# Examples of Measurable Outcomes That Can Be Seen with DRG Implementation

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- Transparency of what is provided, where, and for how much - *measurable*
- Reduction in Length of Stay - *measurable*
- Reduction in the cost per case - *measurable*
- Movement of health care services across settings - *measurable*
- Central level and hospital level decision-makers using data to manage their environments - *somewhat measurable*
- Improved health care outcomes/quality of care - *somewhat measurable*
- Increased collaboration among all the players in the health care policy arena - *measurable*
- Others...it's good to define other efficiency measures and to begin tying financing to achieving higher levels of quality!

# Bulgaria's History with DRGs and Case-Mix

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- Bulgaria has a long history studying DRGs
  - Studies began as far back as the early 1990s
  - Many pilot projects have taken place
  - Trainings have been provided on coding, costing, management, etc.
  - Clinical & cost data have been collected, analyzed, and are available
  - Simulations of hospitals budgets under DRGs have been prepared
  - Infrastructure development & knowledge transfer have occurred
  - DRG technical capacity exists in Bulgaria
  
- But DRGs haven't been implemented in Bulgaria to date...Why?
  - CCPs were implemented instead and originally they were clinical care paths/protocols and later used as the basis of the contracting/financing system negotiated between the Bulgarian Medical Association and the National Health Insurance Fund
  - The construction and use of CCPs today is quite different from what was originally created and it does not appear to be functioning as an effective output-based financing tool

# Are CCPs and DRGs The Same?

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- Yes...in that
  - Both are tools aimed at measuring hospital output or production
  - Both can be described as “case-mix” tools
  - The original CCPs were closer in design to DRGs than they are today
  - CCPs describe more of a clinical path/protocol compared to DRGs
  
- No...when it comes to how the tool is used for financing
  - DRG-financing is more “output” based than CCP-financing
    - DRGs do not include clinical or administrative “input” requirements as part of the grouping or payment algorithm such as the provision of certain tests or services, the presence of specific equipment, minimum lengths of stays, number of hospital staff, etc.
  - DRG-based financing systems appear to create more efficiency incentives than how CCP-based financing has been implemented in Bulgaria

# Pros and Cons of CCPs

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## PROs

- An output based financing which is preferable to the old input based financing system
- CCPs intended to help describe clinical care paths/protocols
- Have been in use and people understand them (this can potentially be detrimental as provider know how to use or manipulate the system)
- The administrative rules and requirements embedded in the CCP algorithms may be considered necessary by some to "limit" what hospitals can do
- Others...

## CONs

- Administrative and clinical requirements are used to limit financing & contracting
- Prices are negotiated and may not have good relation to true costs
- Efficient hospitals are not rewarded
- Unnecessary tests and services may be provided to meet the CCP requirements
- Unclear how new CCPs are created or existing ones split apart
- International comparisons not easy to make
- Others...

# Should Bulgaria Move to DRG-Based Hospital Financing?

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## ■ Yes...

- If there is agreement that how CCPs are used today for hospital financing is flawed and cannot be fixed/changed
- If DRGs can be implemented differently from CCPs so that the result is a true output based financing system with efficiency incentives and no open-ended budgets
- If annual price updates can be made using objective cost data rather than negotiation methods and if the creation of new groups is based on objective clinical and cost data
- If making international comparisons is useful
- With the understanding that no payment system is perfect but that while changes will correct some flaws they will also generate different +/- incentives whose impact will need to be monitored

## ■ No...

- *If DRGs replace CCPs as the "tool" used for hospital financing/contracting, but no other changes are implemented, then Bulgaria will be no better off and may not need move forward with DRGs!*

*It's Important to Understand DRG Technical Requirements and to Address Common DRG Concerns Before Moving Forward.*

# Part II: DRG-Based Financing System Technical Requirements and Bulgaria's Readiness

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# Implementing DRGs Requires Three Main Technical Components

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- Component 1: Defining the cases
  - Requires clinical/coded patient data (diagnosis and procedures)
  - Requires demographic data and a few other data elements
  - Requires selection of a classification system to assign cases into DRGs
  
- Component 2: Assigning a cost to each case
  - Cost data needed to create relative weights (either collected in country or borrowed from a similar country)
  - Total expenditure/budget data needed to create DRG prices
  
- Component 3: Policy decisions to implement DRG-based financing
  - Use of adjustments, a transition plan, others (i.e., type of hospitals, location, etc.)
  - Simulations, modeling and analyses

# Technical Characteristics

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## 1. Defining the case

- Defining the cases treated by hospitals
  - Clinical coding of patients (diagnoses and procedures) and other demographic information required to assign hospital patients into DRG
  - Collection of clinical and demographic data
  - Selection of a classification system to group cases into DRGs (i.e., MS-DRGs from the U.S., Australian DRGs, Nord-DRGs, etc.)
  - Analyses

# Technical Characteristics

## 2. Assigning a Cost to Each Case

- Cost data is needed at the hospital and patient level to compute an average cost for each patient by DRG
  - Accurate costing should factor in both direct and overhead/indirect costs of the hospital and either a top down or bottom up costing approach can be used to allocate these costs to the patient level
  - If data is insufficient, or does not yet exist, cost weights can be borrowed or imputed from other similar countries
- Purpose of assigning costs to each DRG:
  - Understand the resources required to care for patients
  - Develop relative weights which allow comparisons of the relative costs of different types of services
  - Compute an index for each hospital to measure the intensity of the resources used to treat patients (i.e., case-mix index)
  - Assign a price to each DRG to create a full DRG “price list”
  - To serve as the basis of a financing system
  - Allow for benchmarking, comparative analyses, etc.

# Technical Characteristics

## 3. Taking Policy Decisions

- Policy decisions are required in order to implement DRGs for financing
  - Selection of the base/reference price
  - Use of adjustments for type of hospital, location in country, etc.
  - Use of transition mechanisms
  - Addressing other cross-cutting issues such as: capital costs, teaching and research, physician costs, outlier/unusual cases, transfer cases, closing hospitals, converting existing capacity, aligning incentives across care settings, monitoring for fraud and abuse, monitoring quality, etc.
- Running simulations and conducting analyses is key!
  - Target or expenditure budget is needed (fixed not flexible budget)
  - Various parameters must be selected and simulated
  - Final parameters selected will be based in large part on the confidence you have in your data (clinical and cost data) and on how quickly the government wants to make changes from what is in place today to a new system
  - Determining institutional roles and responsibilities – “who will do what”

# Bringing it Together...For a DRG-Based Financing System

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- Once cases are assigned to DRGs, we know the number and types of cases each hospital produces
- Once the average cost for a case is computed as well as an average cost for each DRG, information about relative costliness of services is available and can serve as the basis of the financing system
- Target spending is needed to set an average/base price
- Policy decisions are needed about how and when to implement and what adjustments or transition are needed
- Goal = distribute limited resources **equitably** and fairly to hospitals based on the types of cases treated either by creating a:
  - Payment system - transaction based model
  - Budgeting/contracting – reconcile budgets quarterly, annually, etc.

# Status of Bulgaria's Technical Readiness to Move Forward with DRGs

- Selection of coding systems (diagnosis and procedures)
  - ☑ *Yes, already in place for Bulgaria*
- Selection of the classification (DRG grouping method)
  - ☑ *Yes, already selected for Bulgaria*
- Available clinical & demographic data to group patients to DRGs
  - ☑ *Yes, available for Bulgaria*
- Availability of cost data or selection of a costing methodology or "borrowing" relative weights
  - *Some data likely available for Bulgaria but it needs to be reviewed/refined*
- Selecting and simulating DRG financing policies, formulas, and modelling adjustments, transition policies, etc.
  - ☑ *Initial simulations prepared previously and could be revisited as a starting place*
    - *New simulations need to be run and an action plan prepared*
- Defining institutional roles and responsibilities (including on data ownership and sharing)
  - *Needs to be done if DRGs are to be implemented*

**Part III: Addressing DRG Concerns  
& Possible Next Steps for Bulgaria  
to Move from CCP to DRG-Based  
Hospital Financing**

# Common Concerns About DRGs

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- DRGs and CCPs are the same so there is no need for a change
- We need 30-40% more money before DRGs can be implemented
- The infrastructure costs are too high to implement DRGs
  - For example, our information systems are not ready and our hospitals need more staff, computers, etc.
- Our coding is too poor to implement DRGs
- We do not have good/accurate/reliable cost data

# Common Concerns About DRGs (cont)

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- We do not have enough knowledge/information to implement DRGs
- Implementing DRGs means there will be an increase in spending
- There will be more fraud and abuse in the system since DRGs create incentives to increase hospital cases/volume
- Patients will be discharged quicker and sicker from the hospital and mortality will increase
- Others...what else have you heard?

# Some Conclusions About Common DRG Concerns...

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- DRG-based financing creates incentives to reduce costs by reducing length of stay, providing fewer tests/services, etc. but these things should not occur at the expense of patient care and must be monitored
- If hospital debts are forgiven or additional money added, then there will be no incentive for hospitals to be efficient. *This is not the "fault" of the financing tool but a problem with the implementation*
- Successful implementation can occur with minimal levels of coding & costing as long as adjustments and transition policies are used
- If DRGs are implemented appropriately, the following can be achieved:
  - Fair and equitable distribution of resources
  - Only necessary care provided (i.e., no minimum lengths of stays)
  - Care provided in the right setting (i.e., ambulatory vs. hospital),
  - Efficient delivery of care (i.e., unnecessary tests, services, and unnecessary infrastructure could be eliminated), and

# Key Next Steps for Bulgaria to Develop a DRG-Based Financing Implementation Action Plan

- Discuss and Decide the Following:
  - Is the implementation of DRGs a possible solution for Bulgaria?
  - Should CCPs be refined rather than replaced by DRGs?
  - Can critical aspects of broader health system reform goals be achieved within the existing hospital financing system or are refinements required?
- To Understand Options on How DRGs Can be Implemented, Simulations Should Be Run:
  - Obtain clinical data (i.e., cases) and data grouped into DRGs and CCPs
  - Obtain expenditure data (i.e. total money to be distributed using DRGs)
  - Obtain cost data or relative weights– calculated or borrowed
  - Develop base/reference DRG vs. CCP price
  - Select and simulate different DRG policy options (i.e., adjustments, transition policies, etc.)
  - Prepare a draft work plan

**Who will be part of the small DRG technical working group team?**



# Summary

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- Case-based financing can be implemented in different ways but to create efficiency incentives, certain parameters must be respected
  - Open-ended budgets will prevent hospitals from being efficient
  - Medical standards related to inpatient admissions is important to having care delivered in the right setting
  - Implementing a strong auditing and monitoring mechanism is critical
  - Accurate, objective, and reliable data must be used
  - Systems and staff must be ready
  - Incentives that promote efficiency and high quality of care are key!
  
- If DRGs are not implemented, then decision-makers should carefully assess whether the CCP financing system as it functions today will be able to achieve desired health system goals and if not, then determine what is necessary to improve it
  
- Moving from CCPs to DRGs requires technical work but mostly it required political will

# In Conclusions...Implementation Impact...Now and Later

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5 years from now... what will health care services, delivery, quality, and cost look like in Bulgaria?

- Will there be fewer hospitalizations?
- Will hospitalizations be more appropriate?
- Will primary or outpatient care utilization be strengthened?
- Will hospital directors truly manage the hospital?
- Will hospital debts continue to be forgiven?
- Will we have learned how to use limited resources more efficiently?

*These and other questions are not easily answered, but if a case-mix based system, such as DRGs is really working, then we should be able to see some "measurable" changes in a few years!*