Value guided healthcare as a platform for industrial development in Sweden – feasibility study

Final Document

August, 2009
Project context – Background

Sweden has historically had a very strong reputation for clinical research. This reputation contributed to the creation of a productive local health care system, and to the development of major companies in the biopharmaceutical and medical devices and technologies fields.

Over the past years, several investigators have documented that Sweden’s position in clinical research is deteriorating. There are many reasons for this trend. Several excellent suggestions on how to address the situation have been proposed.

In 2008 a leading Swedish industrialist Carl Bennet gathered the 50 most senior leaders from among payers and providers, academia and the health care industry, to discuss the situation and propose an action plan for the Swedish government. The same group was invited to discuss a concrete proposal and plan for action on August 18, 2009. In preparation for this meeting, a team from the Boston Consulting Group was commissioned to assess the potential importance of Sweden’s quality of care programs and patient registries. The worked for 10 weeks during May through July 2009 to formulate a ten year vision, translate the vision into a concrete governance model, and develop a ten year implementation plan.

One of the project’s central insights is that health care in developed countries needs transformational change in order to improve productivity and ensure that the broader population gets access to high quality of care and health care innovation. In order to mobilize the clinical staff around this transformation, the focus has to be on achieving quality of care for the patients, rather than overall efficiency and cost-containment.
Project context – Objectives

Define a ten-year vision for how Sweden could take a leading position internationally in value based healthcare

Define Sweden's current position in an international context, key strengths and barriers to change

Propose strategic priorities and estimate business case

Describe key actions, timeline and stakeholder actions required to deliver on strategy

Engage key stakeholders to test support and secure well founded recommendations
Executive summary

Providing high quality healthcare at reasonable cost is one of the most pressing issues facing industrialized countries today

- Unsustainable growth in spend across countries, exacerbated by current downturn
- Sweden with additional challenge from drop in clinical research and healthcare industry activity

Emerging health care "value paradigm" will increase industry productivity by focusing on outcomes/cost

- Cost-focus needs to be coupled with focus on outcomes to secure strong engagement by practicing clinicians in the required industry transformation
- Sweden with ~5 year head-start in new paradigm due to unique quality and patient registries

With shared vision and a coherent national strategy, Sweden could build world-leading platform in value-based healthcare within 10 years

- Positive and strong incentives to develop effective care for patients through transparency on performance
- Increasing clinical demand for innovation to improve care performance will enhance "translational" links between basic research and clinical practice
- Platform for industry to develop and test products meeting market requirements for healthcare productivity and safety

Swift action needed to leverage ~5 year window of opportunity

- Leadership by state and counties to define national strategy and provide seed financing
- Participation of all key stakeholders in defining policies, executing the strategy and realizing the vision
- Build national platform for quality registries while maintaining strong sense of ownership among clinicians
Current study scope holistic – integrating efforts by many

Large interest in outcomes but lack of shared vision, clear leadership and coordination

Many stakeholders, initiatives, projects...

...but all agree coordinated efforts are lacking

"We see huge potential and we are realizing some, but we lack a joint vision to work towards"

"We have seen definite cases of 'turf wars' "

"We're afraid all these uncoordinated efforts can cause fatigue and make us lose momentum"

Scope of study to bring efforts together towards common vision and roadmap

Concrete and realistic 10-year vision with healthcare system perspective
- Ambitious but tried and tested
- Anchored in international outlook

Current landscape, vision and roadmap discussed with all key stakeholders
- >70 interviews
- Proposal built on strengths of current model

Roadmap allowing for paced implementation
- Interdependencies few but important
- Providers and other stakeholders can contribute independently

System perspective outlines one of the most attractive future industry platforms for Sweden

Source: Stakeholder interviews April – June 2009, BCG analysis

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Preface

This material contains copies of slides prepared by members of The Boston Consulting Group, Inc, for the seminar "Sweden as the International Leader in Outcome Based Healthcare", held in Gothenburg August 18th, 2009. A list of all the participants at the seminar is available through the authors.

The slides are incomplete without accompanying oral commentary.

The market and business case estimates contained in this presentation are based upon standard methodologies using public data, market interviews and assumptions derived from the insight gained during the project and data entrusted to The Boston Consulting Group (BCG). BCG has not independently verified all of the data and assumptions used in these analyses. Changes in the underlying data or operating assumptions will clearly impact the analyses and conclusions.
Agenda

Starting position

Shared vision and value captured

Way forward

Appendix
Unsustainable growth in healthcare spend

1. Average nominal wage index
Note: Index on basis of local currency; Per capita HC cost 2006 at exchange rate of 1 USD=0.797 €, 2005: 110,22 Yen/US$
Source: OECD Health Data 2008; EIU
Sweden's strength in healthcare increasingly challenged

Sweden losing clinical trial volumes

Drop in registered patents

Medically trained students shrinking share of Medical faculty PhDs

1. At Uppsala University, Karolinska Institutet; Lund University and Gothenburg University

Note: CAGR=Compounded Annual Growth Rate

Source: Klinisk forskning – ett lyft för sjukvården, Läkemedelsverket; SCB; Teknikområdesbarometern 2006-2008 PRV; BCG Analysis

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Improving healthcare easier said than done

Source: The Economist
Value based healthcare new paradigm emerging

- Measured as outcomes, not inputs
- Defined around patient, not supplier
- Measured over full cycle-of-care

Outcome metrics, e.g.,
- Mortality
- Mobility
- Pain sensation
- Activities in daily life
- Post-op infection

\[
\frac{\text{Outcome}}{\text{Cost}} = \text{Value}
\]

Source: Institute of Strategy and Competitiveness, Harvard Business School; BCG analysis
Value focus win-win for all stakeholders

**Payers & Providers**
- Transparency on outcomes
- Improved quality of care
- New decision-support tools
- Pay for value delivered
- Effective patient choice

**Academia**
- World class outcomes research
- Future clinical research hub
- Unlocking potential in translational medicine

**Patients**
- Best possible outcome...
- ... at minimal cost

**Industry**
- Unique platform for outcomes based safety, efficacy and pricing studies
- New healthcare information services industries

Source: BCG analysis
Sweden with strong starting point in quality registries

69 quality registries started to date

Quality registries by start year
(# of registries)

>20 registries with >85% patient coverage

Quality registries by patient coverage, start year
(# of registries)

1. Only including registries receiving funding from SKL
Source: "National Healthcare Quality Registries in Sweden 2007"; Grant applications; BCG analysis
10 registries stand out for exceptional level of quality

Note: See Appendix for detailed registry example
Source: SKL, registry annual reports, registry grant applications to SKL; BCG analysis

Pain rehabilitation and rectal cancer did not pass selection of > 10,000 patients, but added due to high report quality

Short-list:
- Cataract
- Gallstone surgery
- Hip arthroplasty
- Intensive care
- Pain rehabilitation
- Rheumatoid arthritis
- Rectal cancer
- Stroke
- Swedeheart
- Vascular surgery
First-class quality registry fulfill six requirements

1. **Strong core team**
   - One team responsible
     - Clear process leadership
     - Personal dedication
     - Sense of ownership
   - Strong support from specialists
     - Data collection is team effort
   - Entrepreneurial "can-do" spirit
     - creating winners

2. **Committed specialists**
   - Atmosphere of cooperation
     - Evidence-based discussion
     - Mutual respect and team spirit
     - Peer pressure in joint efforts
   - Evidence-based approach
     - Strong foundation in research
     - Willingness to measure

3. **Valid & reliable metrics**
   - Strong foundation in research
     - Internationally tested metrics
     - Proven causality
     - Possible to benchmark
   - In touch with clinical practice
     - Practicality filter
   - Risk adjustment possibilities
     - Collect relevant patient data

4. **Systematic feedback**
   - Fast feedback of results
     - To allow comparisons over time for own results
   - Learnings linked to feedback
     - Learn from others
     - Workshops and seminars
     - Organized best-practice sharing

5. **Easy-to-use IT interface**
   - Easy to enter data
     - Only collect what is needed
     - Easy-to-use IT interface
     - Move towards integration with EMR systems
   - Easy to receive feedback
     - Fast feedback of own results
     - Decision-support tools

6. **Stable financing**
   - Access to stable financing
     - Backing from institutions
     - Clearly delineated budget for registry admin, maintenance
   - Arms-length relationships with private financiers
     - Access to funding without compromising data integrity

Source: BCG analysis
~25% of HC-costs already covered by registries

Tax-funded healthcare costs Sweden, 2007 (BSEK)

1. Analysis based on KPP-data  
2. Assumptions: Share captured same as for inpatient with adjustment for clinic coverage; for registries covering outpatient care, clinic coverage is same for inpatient and outpatient  
3. Quality registries for diabetes, leg ulcer and heart failure cover primary care; assumptions: cost/patient and visit 2000 SEK, 4 visits/year for diabetes patients; cost/patient and visit 2000 SEK, 52 visits/year for leg ulcer patients; cost/patient and visit 4000 SEK, 4 visits/year for heart failure patients  
4. Only existing quality register for psychiatry is eating disorder; assumption cost/patient and year 200000 SEK; 1355 patient registered in RIKSÄT 2007 

Note: Not including cost of pharmaceuticals, dental care, political activities and restructuring activities

Source: KPP-database; SKL; annual reports for quality registries, grant applications to SKL; BCG analysis and estimates
Today national quality registries cover 41% of specialized inpatient cost

Share of specialized inpatient cost covered by quality registry (%)

Cost currently captured
Cost not captured

Note: Cost data covers specialized inpatient somatic care
Source: KPP-database; SKL; annual reports for quality registries, grant applications to SKL; BCG analysis

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Unique platform from broad range of personal registries

Medical outcomes data
- SKL-funded quality registries
- Other quality registries – E.g; child cancer

Drug usage data
- Socialstyrelsen registry

Socioeconomic data
- Statistics Sweden

Genetics data
- Biobanks

Other data
- Epidemiology
- Comparative effectiveness
- Health economics
- Longitudinal studies
- ...

Solid patient integrity absolute requirement

1. e.g. medical birth, birth defects, (eg MFR)
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Appendix
A shared 10 year vision for Swedish healthcare

In the past 10 years Sweden has emerged as the leading nation in value based healthcare and personalized medicine. Today, Swedish physicians and nurses work interactively with outcomes analysis and decision-support tools to deliver world-class healthcare results for their patients. The Swedish healthcare system displays several unique characteristics:

• Clinical researchers have access to some of the best data sources in the world. Many important clinical breakthroughs have been made over the last years by teams integrating comprehensive clinical outcomes data with high quality data from national population and cost registries.

• Swedish patients and their relatives are empowered to make informed care choices based on the quality of care. Outcomes information services provide transparent performance data for all providers in the country.

• Sweden is the fastest nation in the world in making valuable new drugs available to their population. The Swedish MPA (LV); the Dental and Pharmaceutical Benefits Agency (TLV) and clinical research competence centers work closely together to define how to best assess the value of conditionally registered products and efficiently determine appropriate reimbursement levels.

• Sweden is the pharmaceutical and medical technology industries' country of choice for conducting post-approval safety, efficacy, and cost-benefit studies. This has been one of the key factors that have enabled a reinvigoration of the Swedish life-science industry.

In addition to the clinical benefits, focusing on value based healthcare has saved the Swedish taxpayer ~50 BSEK in reduced direct medical costs. No wonder Sweden is being flocked by researchers from other countries eager to learn how outcomes and cost measurements can lead to world class research and clinical care.
Swedish experience suggests that vision is realistic

Examples for all stakeholders on following pages

- Best possible outcome...
- ... at minimal cost
Better quality of care without increasing payer cost
Quality versus cost of healthcare in Swedish county councils 2008

No significant correlation between quality and cost identified

Note: Cost including; primary care, specialized somatic care, specialized psychiatry care, other medical care, political health- and medical care activities, other subsidies (e.g. drugs)
Source: Öppna jämförelser, Socialstyrelsen 2008; Sjukvårdsdata i fokus 2008; BCG analysis

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~1.5% annual savings in HC-costs conservative estimate of results of outcomes work

<table>
<thead>
<tr>
<th>Example</th>
<th>Medical category</th>
<th>Source of saving</th>
<th>Annual savings(^1)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of hip arthroplasty re-operations from elimination of risk factors</td>
<td>Surgery</td>
<td>Best-practice sharing</td>
<td>1.5 – 2.0%</td>
<td>Hip-prosthesis registry</td>
</tr>
<tr>
<td>Reduced amputation frequency from systematic selection of patients for distal bypass surgery</td>
<td>Surgery</td>
<td>Prevention</td>
<td>1.0%</td>
<td>Swedvasc</td>
</tr>
<tr>
<td>Reduction in stroke readmission from secondary-preventive activities</td>
<td>Acute</td>
<td>Prevention</td>
<td>1.5 – 2.0%</td>
<td>Patientregistret / Socialstyrelsen</td>
</tr>
<tr>
<td>Reduction of chronic disease prevalence and complications from early identification of risk factors</td>
<td>Chronic conditions</td>
<td>Prevention</td>
<td>3.0%</td>
<td>Pitney Bowes / Harvard Business School</td>
</tr>
<tr>
<td>Overall medical cost savings from adoption of health information technology(^2)</td>
<td>Overall</td>
<td>Patient-data analysis that supports medical practice</td>
<td>3.0%</td>
<td>RAND Corporation / The Economist</td>
</tr>
</tbody>
</table>

Transparency drives best practice sharing (I)
Example: Cardiovascular disease

Karlstad central hospital

- Care cycle redone
- PCI\(^1\) -unit established
- Emergency care expanded to 24/7 coverage

Ranked #43 of 73 hospitals

Halmstad hospital

- Care aligned with national treatment guidelines\(^2\)
- New specialist departments for specific coronary conditions started
- Staffing improved

1 year mortality 20%, 
Ranked #68 of 73 hospitals

"We felt ourselves that our care was insufficient. We pushed for improvements in cardiac care in Värmland for many years, but nothing happened [until the results became transparent]

-Unit mgr Karlstad Hosp.

Quality index\(^3\) raised from 1 to 8, 
30-day mortality reduced by 50%
Ranked #22

"[The media] was an alarm clock. Thanks to the statistics we received a lot more resources and could see what others did that we did not do."

-Hospital mgr Halmstad Hosp.

Quality index raised from 1 to 4 
Mortality reduced by 50%
Ranked #45

1. Percutaneous coronary intervention  
2. on angiography and PCI 3. Riks-HIA
Source: SVT.se; Aftonbladet 2007-03-08; DN 2009-05-06; Dagens Medicin 2008-08-26; Läkartidningen nr 44 vol. 104, 2007; Värmlands Folkblad 10 Oct 2007
## Transparency drives best practice sharing (II)
### Example: Birth injury

<table>
<thead>
<tr>
<th>Starting point</th>
<th>Actions</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryhov hospital ranked #31 of 47 hospitals in 2003</td>
<td>Staff trained on procedures</td>
<td>National ranking dramatically improved:</td>
</tr>
<tr>
<td></td>
<td>Cooperation between physicians and midwives improved</td>
<td>2003</td>
</tr>
<tr>
<td></td>
<td>Strong commitment from staff</td>
<td>2004</td>
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<td>2005</td>
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<td>2006</td>
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<td></td>
<td></td>
<td>2007</td>
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</table>

"We could see that we were behind and felt that we wanted to do something about it"

"All statistics have been continuously displayed on a board in the clinic, it has been important that everyone could follow the development"

- Unit manager Ryhov Hospital

1. Surgical incision of the perineum during birth

Clinical improvements:
- Sphincter injury 13.7 → 5.6%
- Perineotomy¹ 20% → 5%

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¹ Perineotomy: Surgical incision of the perineum during birth.
Quality registries significant source of clinical research

10 short-listed registries important source of research

~400 publications / year conservative estimate of future potential

1. # of publications for 10 short listed quality registries in 2007
2. Average number of publications per short-listed registry 2007 multiplied by number of registries (59)
3. Adding 31 new quality registries to capture a larger share of total HC-cost

Note: Total number of publications in clinical medicine: 4,000 / year; Total number of dissertations in medicine: 900 / year
Source: Högskoleverket & SCB 2008, KlIniks forskning – ett lyft för sjukvården 2009; registry annual reports, registry grant applications to SKL; BCG analysis
Great industrial value from late-stage registries

Evolution of quality registry use

Clinical research

Higher quality of care and lower variance in outcomes through best practice sharing

Clinical research feeding into and benefiting from quality registries

Quality of care studies and best practice sharing

Platform for product development and evaluation

Reduced outcome variance makes registry attractive platform for e.g. product development

- Easier to evaluate effect

Large industry applications potential

- Definition of unmet medical need and willingness to pay
- Post-marketing safety and efficacy studies
- Cost-benefit studies

Source: BCG analysis

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THE BOSTON CONSULTING GROUP
Treatment convergence facilitates testing of new therapies

Less side-effects (astigmatism) in laser eye surgery over time and lower variance

Induced astigmatism through laser eye surgery, average and variance (# of dioptres)

Significantly lower inflammation levels for rheumatoid arthritis patients and lower variance in outcomes

Average RA CRP value

1. Dipotre = measured as average change of dioptre per clinic based on individual patient data 2. CRP-C = reactive protein level in blood indicating level of inflammation. Lower level of CRP indicates lower level of inflammation short-term as well as lower risk for inflammation long-term 3. National coverage 56% while Falun coverage is 100% for all types of RA-patients. Since 1997 Falun has measured and followed-up all its RA-patients on a monthly basis. Data has been used for regional quality work.

Source: Cataract Annual Report 2007; RA Annual Report 2008-09
Rheumatoid Arthritis registry already reaping full benefits
Example of value of late-stage registry

RA registry driving projects in all registry application areas

Concrete value for all stakeholders – RA registry capturing full registry value

- Covering significant patient cost: ~1.5 BSEK / year
- Registry interface used in therapy
  - Patient tracking own progress through online application
- Attracting 3rd party financing: ~40x public financing
- Opening up new research areas
  - Large-scale longitudinal epidemiological studies
- Industry using registry to validate new therapies
  - eg, TNF-α inhibitors

Source: Rheumatoid registry, Interview with Lars Klareskog, BCG analysis

MSEK

<table>
<thead>
<tr>
<th>Research grant bio banks</th>
<th>Genetic sequencing done abroad</th>
<th>Other research done abroad</th>
<th>Translational research project</th>
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<tbody>
<tr>
<td>~40 MSEK / year</td>
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</table>

Funding from independent foundations
Sales of clinical data to industry
Public funding

Applied research funding
Direct registry funding

Payers & Providers
Academia
Industry

Total registry funding

Source: Rheumatoid registry, Interview with Lars Klareskog, BCG analysis
However, immediate action needed to keep ~5 year advantage

US projected health IT investments

European examples

"... objective to support the free choice of care and encourage patient involvement... through providing comparable information on quality and service for the country's hospitals"

"Quality indicators are helping to drive improvements in primary and community care"

"Through peer-review processes we have decreased mortality for several of our clinics"

"We strongly believe in measuring outcome, and will continue to adjust and fine tune our current model"

Source: "National Healthcare Quality Registries in Sweden 2007", CSC Healthcare; The Economist, BCG analysis

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Agenda

Starting position

Shared vision and value gained

Way forward
  • Governance model
  • Business case
  • Roadmap and milestones

Appendix
8 main principles to reach vision and unlock value

1. All registries patient and disease focused capturing outcomes over care-cycle across provider organizations

2. Significant increase in data availability while maintaining highest patient integrity

3. All registries used to identify quality of care best practice and drive continuous improvements of care. Data use for academic and industrial studies is at the discretion of registry leaders

4. All main stakeholders jointly govern registry infrastructure

5. Registry base funding is secured long-term

6. Better data usage and registry support through shared resources with expertise and tools

7. Registry – industry – regulator (LV and TLV) interfaces are formalized to ensure transparent and efficient relationships

8. Harmonization of registry IT infrastructure and EMR data entry processes is prioritized

Source: BCG analysis
Governance structure engine for stakeholder value capture
Infrastructure and expertise for evidence-based methodology and processes

**Payers & Providers**
- ✔ Outcomes analysis and reporting
- ✔ Structured best-practice sharing
- ✔ Process improvement expertise

**Academia**
- ✔ Interface for researchers and financiers
- ✔ New research topics
- ✔ In-house analysis expertise

**Industry**
- ✔ Interface for study design
- ✔ Sales of registry studies
- ✔ Information services solution opportunities

Patients benefit from increased transparency and better quality of care through all stakeholder activities

Source: BCG analysis
Striking a balance between central scale and local leadership

- National oversight and coordination
- Strategy and policy definition
- Basic quality registry funding
- Central audit function

- Executive body for assessments, implementation, follow-up

- Data use interface and services
- Data analysis services
- Cooperation with other registries
- Facilitate best practice sharing
- IT infrastructure and support
- Coherence in data, metrics

- Metrics definition and data capture
- Registry management

Quality Registries

Steering Committee
- SKL/Landsting
- SoS
- LV
- TLV
- Registry rep
- Patient rep
- UMC¹ rep
- Academia rep
- Industry rep

Executive body (initially PMO role)

Competence Centers (~6)
- Data use interface and services
- Data analysis services
- Facilitate best practice sharing
- Information technology (IT)

Population registries (EpC, SCB etc)

Providers

Universities

Licensing (LV)

Reimbursement (TLV)

Industry

1. University Medical Center
Source: BCG analysis

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Proposed funding mechanism balances base funding and rewards to attractive registries

**Industry**

Private funding for specific registry study, if approved by registry owners

**Steering committee**

Annual direct registry funding\(^2\) conditional on participating in open comparisons through one CoCe

**Competence Center (CoCe)**

Funding used for registry administration, buying services from CoCe

50% of surplus\(^1\) from study to specific registry for registry-related activities

50% of surplus\(^1\) allocated by CoCe to other registries that can show need for additional financing

Fee-for-services

**Quality registries**

"Development funding"

"Base funding"

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1. After reimbursing study specific costs at Competence Center and at registry in question
2. provided by Socialstyrelsen

Source: BCG analysis
Agenda

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Appendix
Business case example: proposed investments with >10x payback in medical cost only next 10 years

Value based model driving annual savings of ~1.5% in medical costs...

...equaling >10x direct medical cost payback

~56 BSEK in total savings over 10yrs, while delivering higher quality of care

Total required investment of ~5 BSEK over same period
- Registry funding, building competence, IT, etc.

10.8x multiple of money coming 10 years

Estimates of societal value at least ~3-5x higher than direct medical cost savings

1. Based on benchmarks
Source: SCB, BCG analysis
Annual costs for establishing governance model
~350-550MSEK

Registry base funding
- Annual basic funding per registry 4 MSEK
- Initial cost related to resources within competence centre
  - 2010: 3 Centers (excl Uppsala)
  - 2011-2012: 5 Centers

Competence centre seed funding
- Annual direct outlay (MSEK)
  - 09 10 11 12 13 14 15-18
  - 0 100 200 300 400 500

Executive body, PMO and audit function
- Executive body / PMO
  - 2009-2013: 30 MSEK
  - 2014-18: 20 MSEK
- Audit function
  - 2010: 5 MSEK
  - 2011-2018: 10 MSEK

Required IT- for complete EMR-solution
- Quality IT investments complementary to national IT strategy initiative
- Total required investment across time period: ~600 MSEK

Note: All figures in real numbers
Source: BCG analysis
Agenda

Starting position

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Way forward
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Appendix
Four-step approach to realize vision and capture value

2009

Strengthen foundation

- Negotiate governance, financing
- Establish PMO
- Set targets, deadlines
- Identify legal obstacles

2012

Ramp-up

- Establish shared capabilities, resources
- Define IT infrastructure
- Drive legal changes

2019

Expansion

- Reach full data use infrastructure
- Full value capture

1. Program Management Office overseeing national initiative
Source: BCG analysis

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Need for immediate actions to secure momentum in 2-3 yrs

Strengthen foundation

2009

Establish PMO\textsuperscript{1} to drive initiative

Negotiate governance setup, key targets and milestones

Ramp-up phase

2010

Drive key functional initiatives

• Set up Steering Committee
• Secure registry financing
• Push for wider CoCe mandate
• Identify what additional CoCe(s) to start
• Run IT framework project
• Initiate legal change (primary care reporting)

2011

2012

Drive key registry initiatives

• Set goals for current registries lacking coverage
• Support start of additional key registries

1. Program Management Office
Source: BCG analysis
Proposed IT integration process allows for paced implementation

Today's double-entry inefficient and significant obstacle to full registry coverage

- Cumbersome and fault-prone for professionals
- Blocking primary care from full registry participation

Integrating user interface for EMR¹ and quality registries pragmatic approach for improvement

- National format specifications defined for select quality metrics in EMR interface
- Full patient data sent to EMR, select metrics sent simultaneously to quality registry

Reduced implementation risk when providers can choose when to move to integrated solution

¹. Electronic Medical Record
Source: BCG Analysis

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Implementing registry initiatives would give coverage of 57%

- Tax-funded healthcare costs (%)
  - Full coverage in existing registries → 57% coverage
  - Additional 6% coverage from adding key diagnoses

- Specialist somatic care
  - Inpatient: 37% (63% captured)
  - Outpatient: 63% (37% captured)

- All key chronic illness visits covered in primary care
  - 77% (23% captured)
  - 18% (82% captured)

- All key psychiatric conditions covered
  - 43% (57% captured)

Note: Not including cost of pharmaceuticals, dental care, political activities and restructuring activities.

1. Analysis based on KPP-data
2. Assumptions: Share captured cost same as for inpatient
   Note: Not including cost of pharmaceuticals, dental care, political activities and restructuring activities

Source: KPP-database; SKL; annual reports for quality registries, grant applications to SKL; Läkartidningen; peer-review journals; BCG analysis and estimates
Key milestones to make 10 year shared vision reality

<table>
<thead>
<tr>
<th>Strengthening Foundation &amp; Ramp-up</th>
<th>Expansion</th>
<th>Full value capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2012</td>
<td>2015</td>
</tr>
</tbody>
</table>

**Ramp-up phase completed**
- ~40% of healthcare cost covered by registries
- All governance, capabilities components initiated
- IT framework established
- All new registries in start-up phase
- Primary care reporting to patient registry

**Well into expansion phase**
- ~55% of healthcare cost covered by registries
- All governance, capabilities components fully resourced
- EMR interface integration near completion
- Target registry coverage somatic care

**Realizing full value capture**
- ~60% of healthcare costs covered by registries
- Full data use ensured through active Competence Centers
- Full EMR interface integration for quality reporting
- Target registry coverage all care cycles
- World-leading commercial applications