# Health IT to support the patient-centered medical home.

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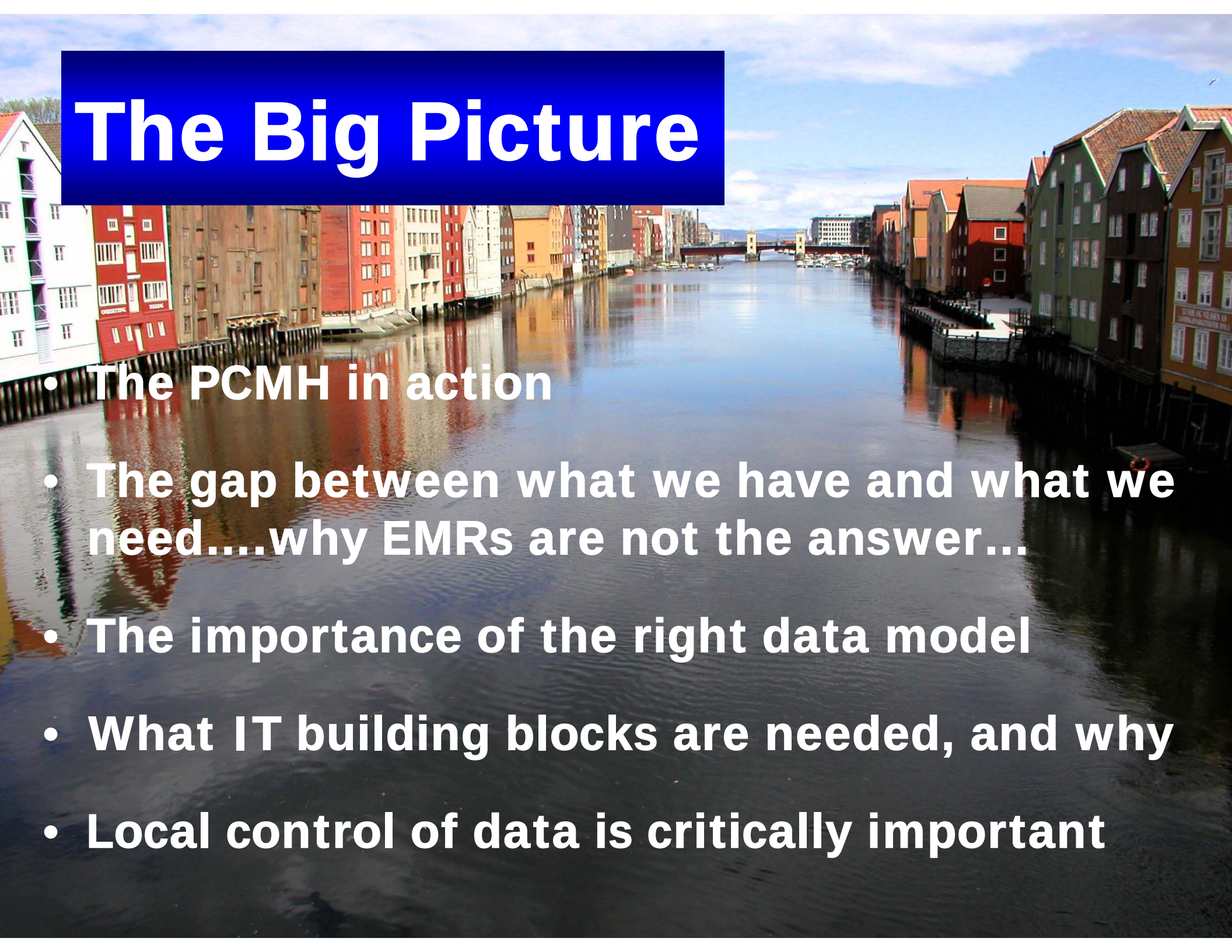
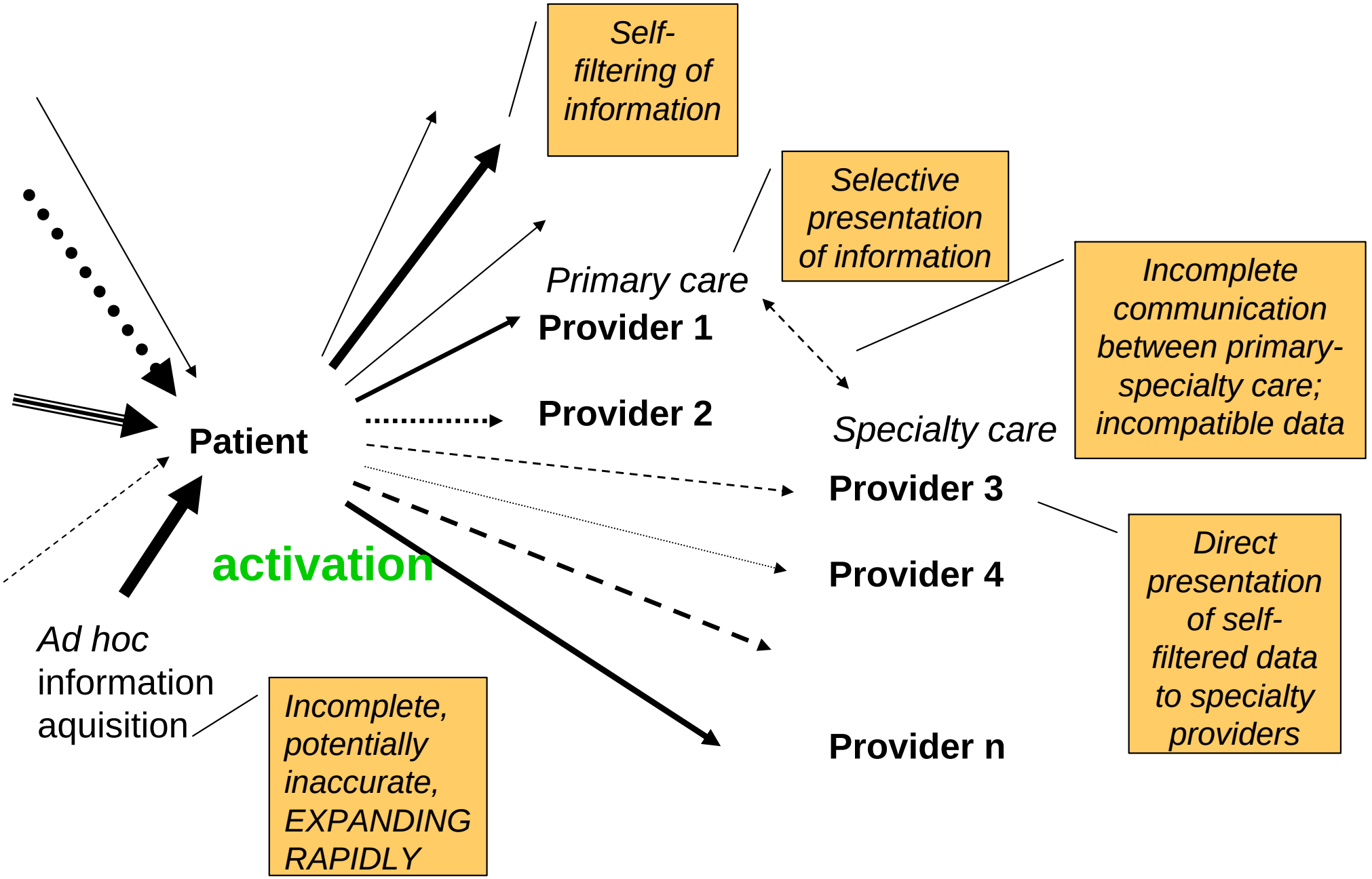
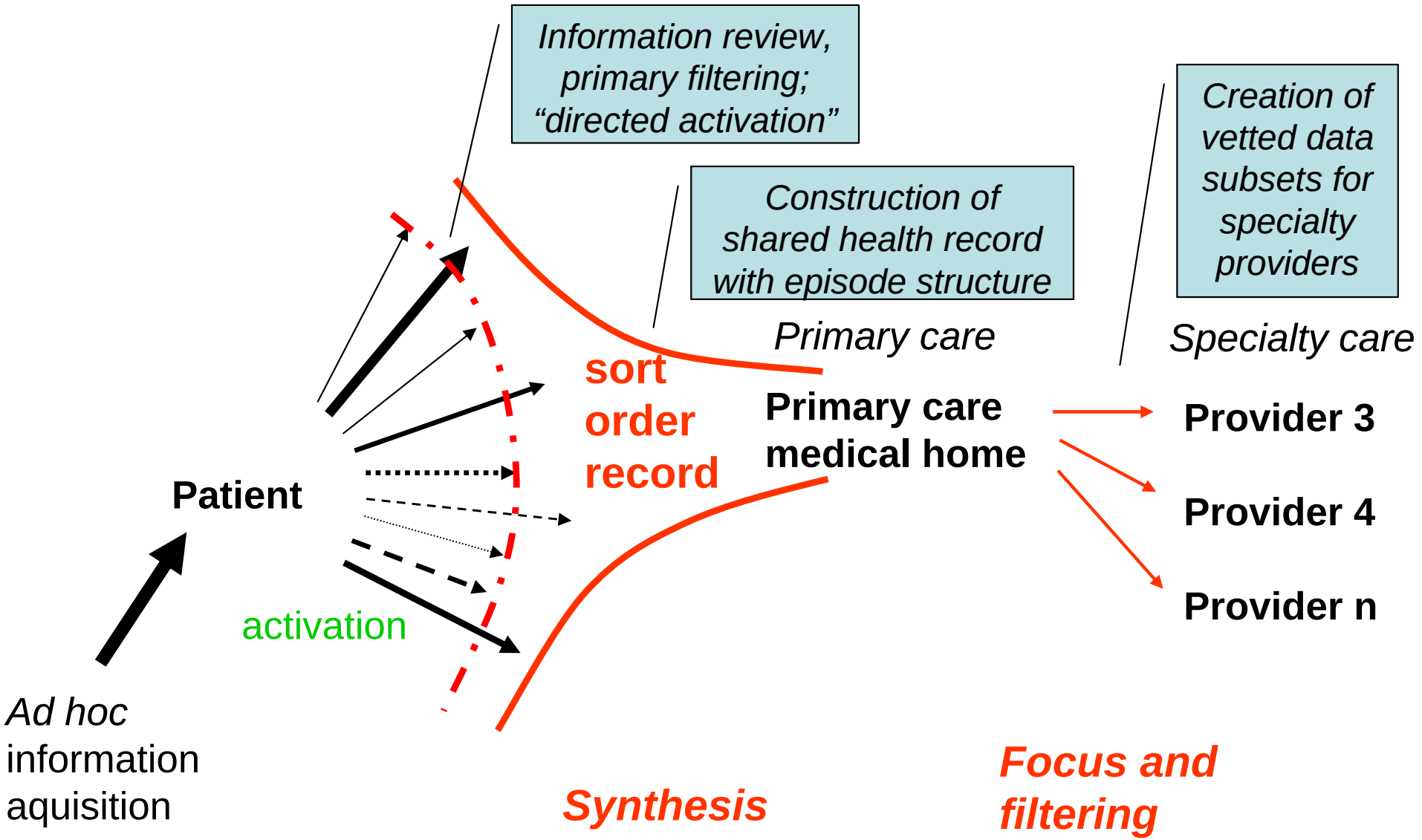


# The Big Picture

- The PCMH in action
- The gap between what we have and what we need….why EMRs are not the answer…
- The importance of the right data model
- What IT building blocks are needed, and why
- Local control of data is critically important




**The primary care information problem: bad, and getting worse**




**Value added by PCMH: structure, synthesis, focus and filtering**

# The medical home in action.

***Mrs. White, a 55 year old woman you have known for years, books an appointment to see you this afternoon.***

- She electronically submits from home her **reasons for encounter** - new symptoms of fatigue and nausea and discussion about screening tests.
- When she arrives, your EHR face sheet displays her **active health problems** (overweight, dyslipidemia) and medications (lovastatin), and **prompts** you that she is in need of a mammogram.
- As you clarify her symptoms and enter them into her record, you run a **decision support** routine that uses your PBRN's **longitudinal epidemiologic database** to calculate a list of likely diagnoses and their relative odds ratios for primary care patients in her demographic group.
- You discuss these possibilities with Mrs White, decide to assess the most likely diagnoses with laboratory tests, and confirm that she has new-onset Type 2 diabetes.

- Entering her diagnosis into her record automatically enrolls her in your **practice diabetes registry**, sends an **email notification** to her with the website for **on-line patient education** and asks her to schedule a visit with your practice nurse, who does diabetic training sessions.

- She self-monitors glucoses and **posts results** to the practice through the **secure patient portal**, where they are forwarded to your nurse who reviews the pattern of results.

- After a brief honeymoon period, her glucoses rise and you send her an **email message** to begin metformin, and send to her local pharmacy an **electronic prescription** for metformin.

- At her follow-up face-to-face encounter with you 3 months later, your EHR **prompts** you to carry out initial diabetic care measures and **reminds** you that her last recorded LDL-C is above target range. You spend much of this encounter discussing how she is adapting to her diagnosis and helping her set **treatment goals and preferences**, which are entered into the record.

- After the visit, she continues to monitor and forward her home glucose readings for review and adjustment of medications, and forwards all questions to the practice through the **patient portal**.

- As a new member of the diabetes disease registry, her data are included in the **patient summary report** on diabetes disease management compiled every 6 months for review within the practice and forwarded yearly to her insurance company to calculate pay-for-performance bonus payments.

# Core PCMH attributes and data needs

| | |
|---|---|
| **Population-focused** | Accurate information about WHO is in population (denominators and registries), WHO is responsible clinician |
| **First contact** | Capacity to capture data from direct and indirect encounters, routine capture of reason for encounter (RFE), capacity to record symptoms and social problems (“non-disease”) in addition to health problems (medical diagnoses) |
| **Patient-centered** | Reliable and up-to-date data on patient preferences, goals, satisfaction, significant life events |
| **Efficient and effective** | Capacity to discriminate between conditions that require diagnosis and treatment and problems that do not (episode of care structure), clinical decision support capability, functional status, general and disease-specific outcome measures |
| **Integrative** | Interoperability (data exchange standards), capacity for patients to enter and share own data |

# Core PCMH attributes and data gaps

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## What we need:

Simple, reliable and interoperable health IT components integrating information entered by all parties, organized by a “fit-for-purpose” data model

## What we have:

Stand-alone or vertically integrated EHRs heavily dependent on clinician data entry and oriented toward diagnosis and billing, without underlying data model

## *STRUCTURE*

**Person:**
- demographics
- social structure
- goals, preferences

**Problem(s):**
- RFE as starting point
- current/active
- severity

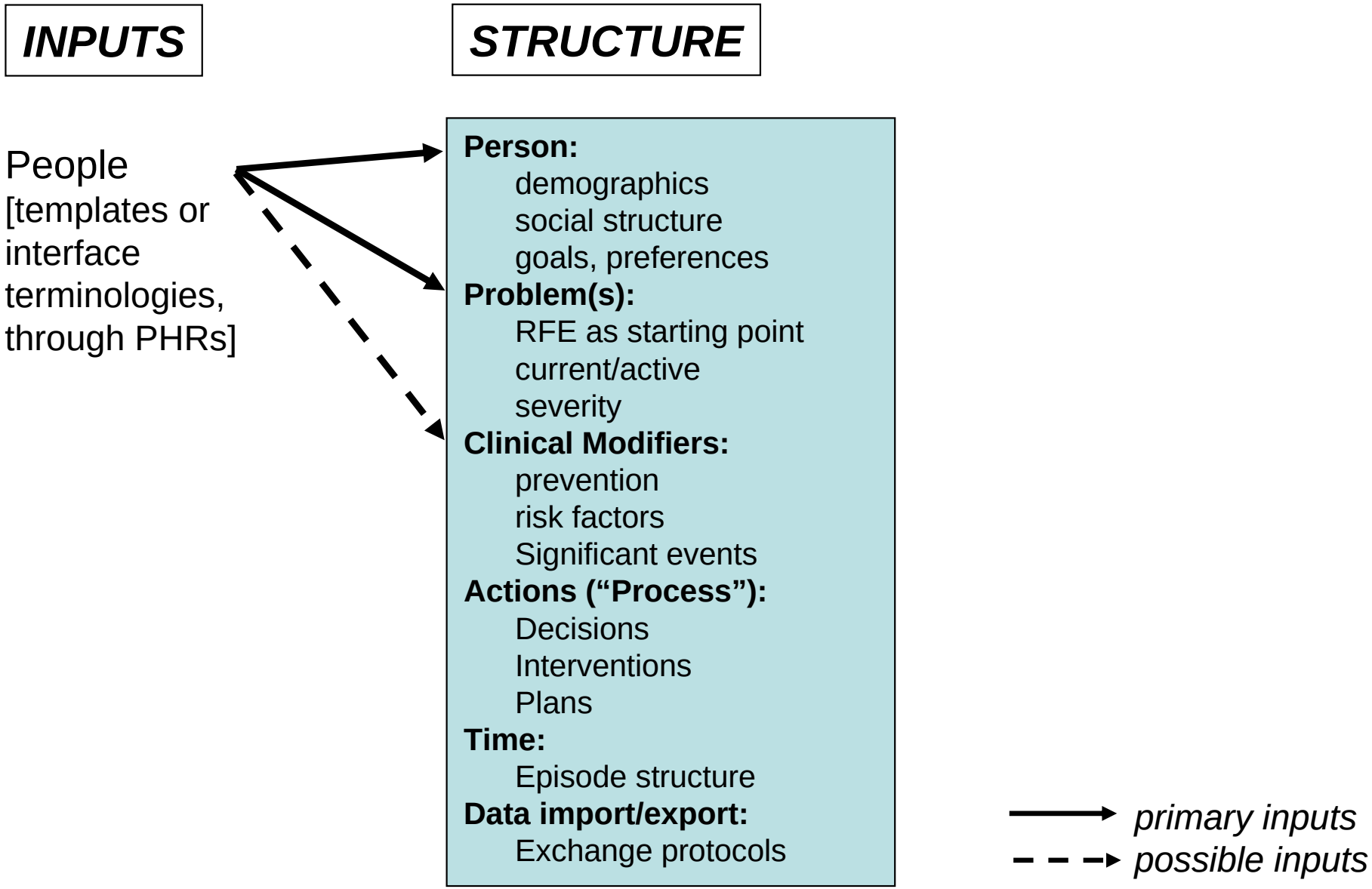
**Clinical Modifiers:**
- prevention
- risk factors
- Significant events

**Actions (“Process”):**
- Decisions
- Interventions
- Plans

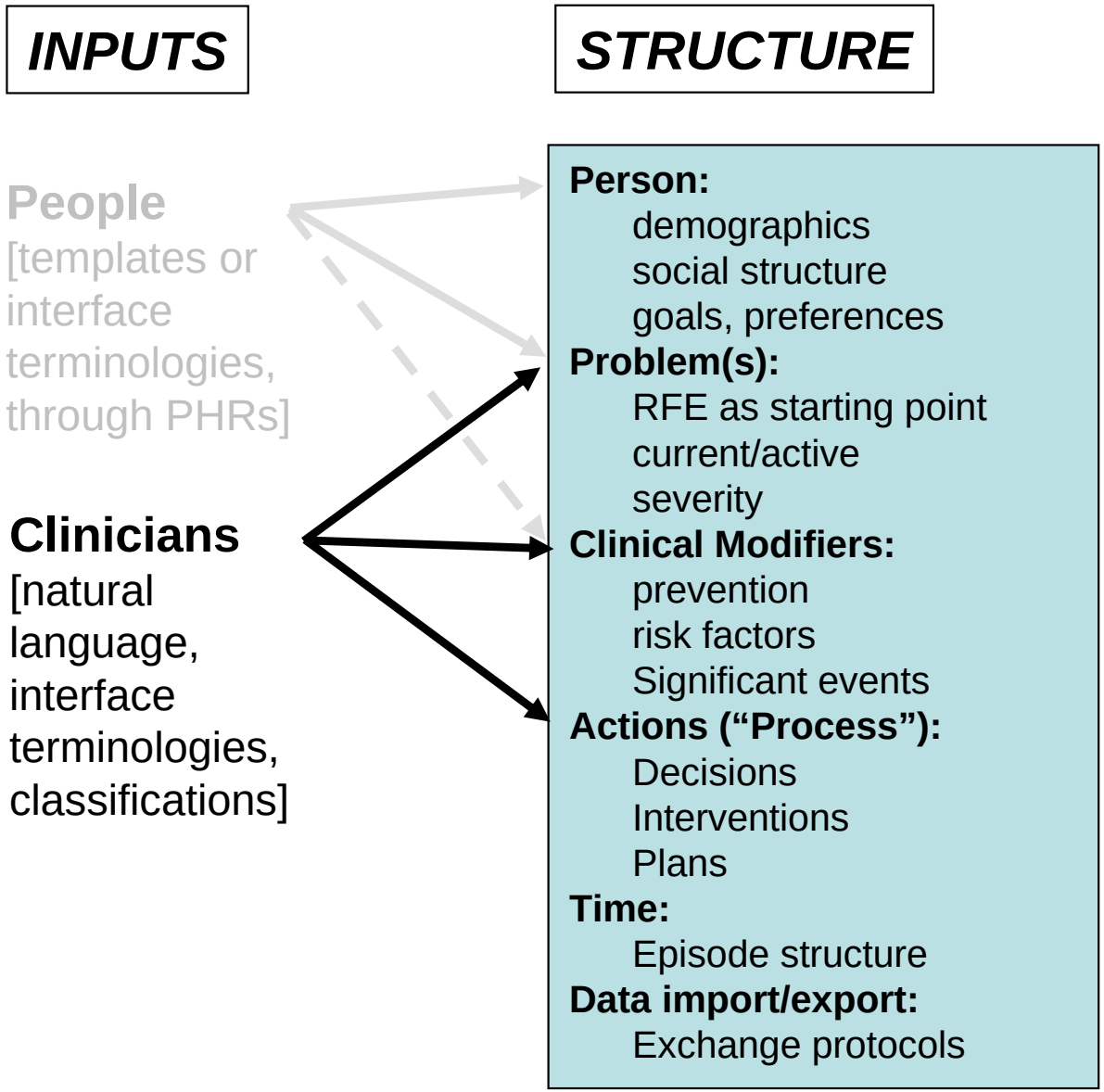
**Time:**
- Episode structure

**Data import/export:**
- Exchange protocols

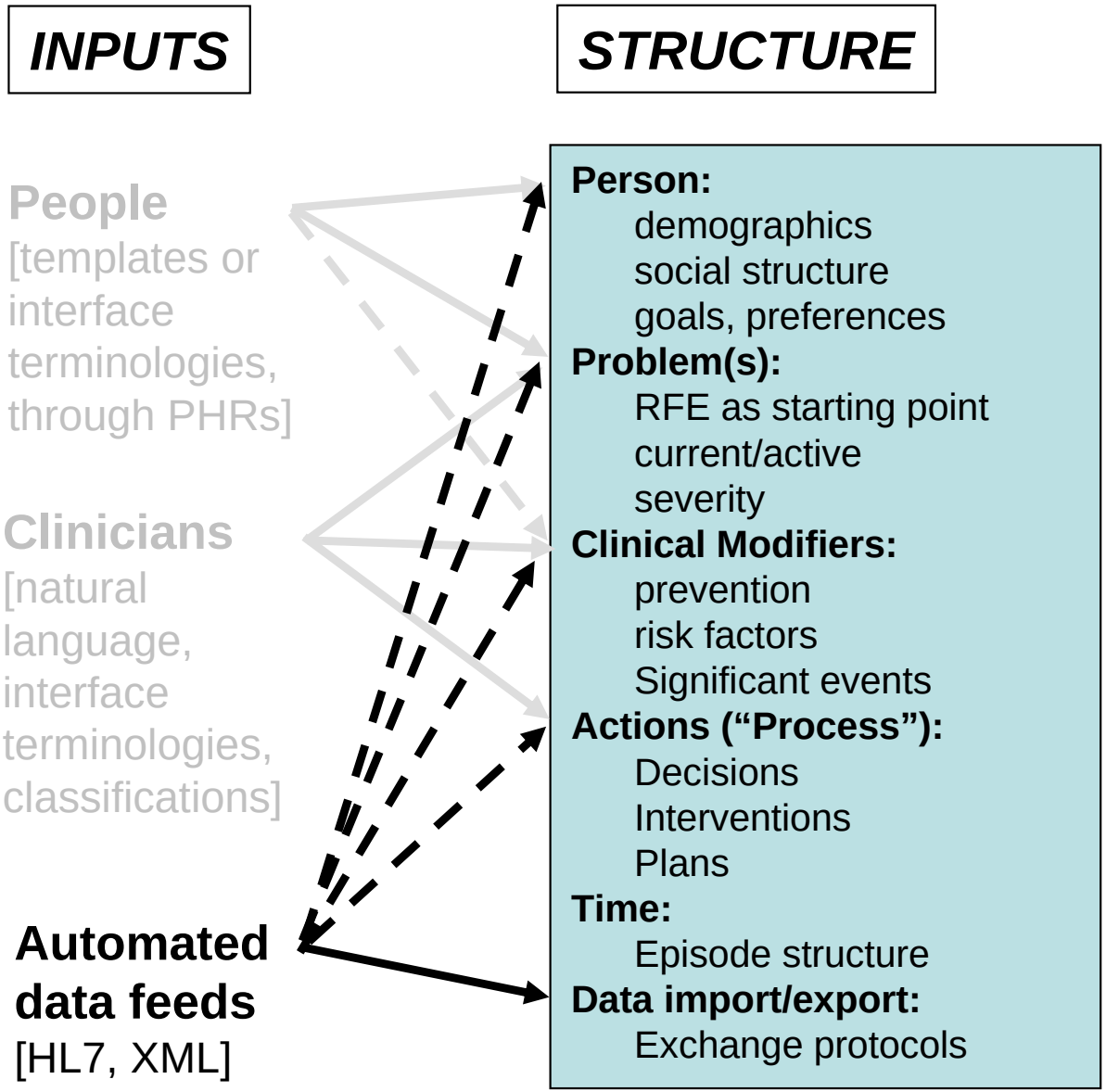
**Data model to support the PCMH:**
**simple building blocks to capture complex reality.**




**Direct inputs from people.**




**Clinician inputs.**




**Automated inputs and data exchange.**

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ICPC

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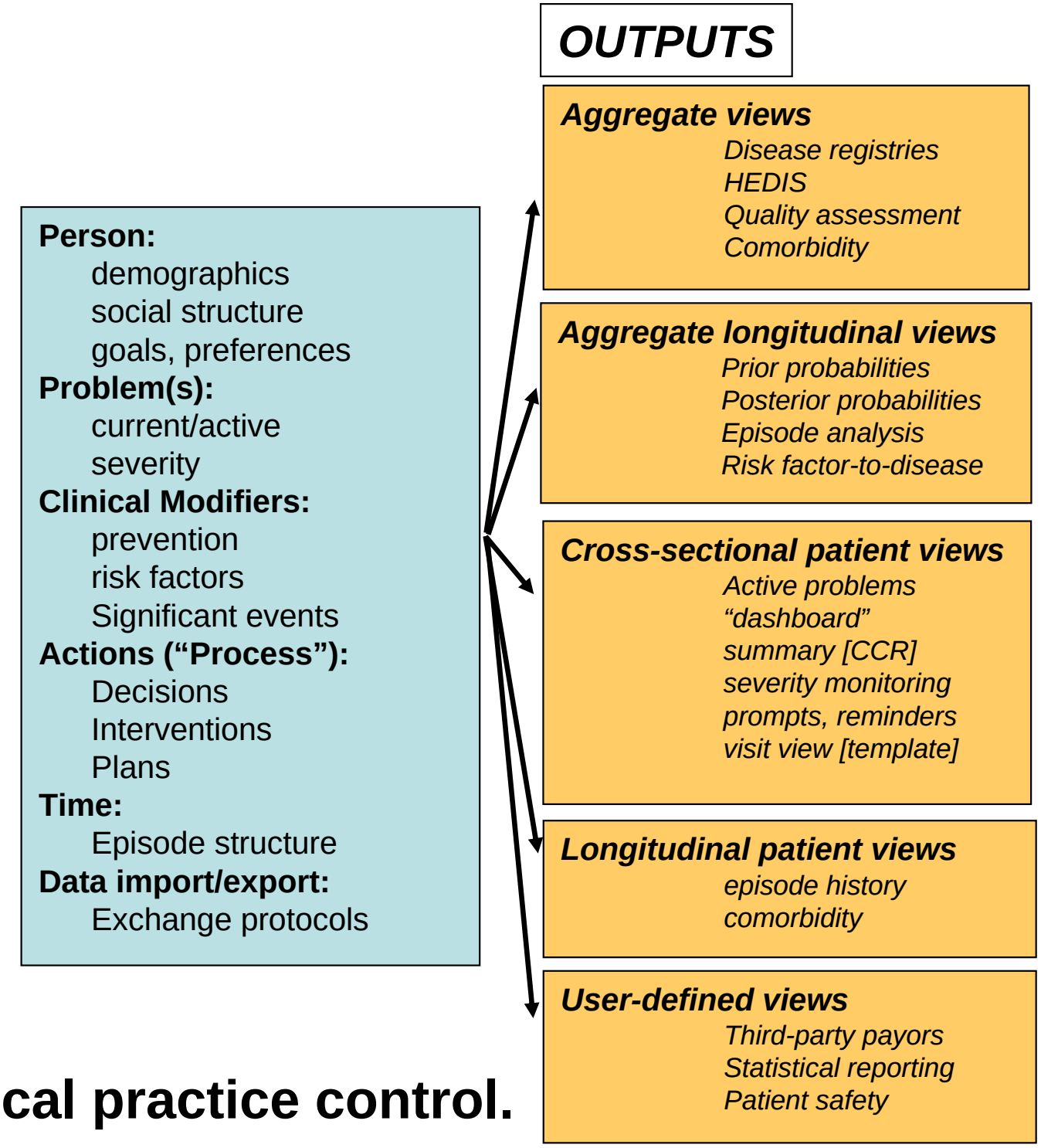
**The International Classification of Primary Care (ICPC): The best available framework to support the data model.**

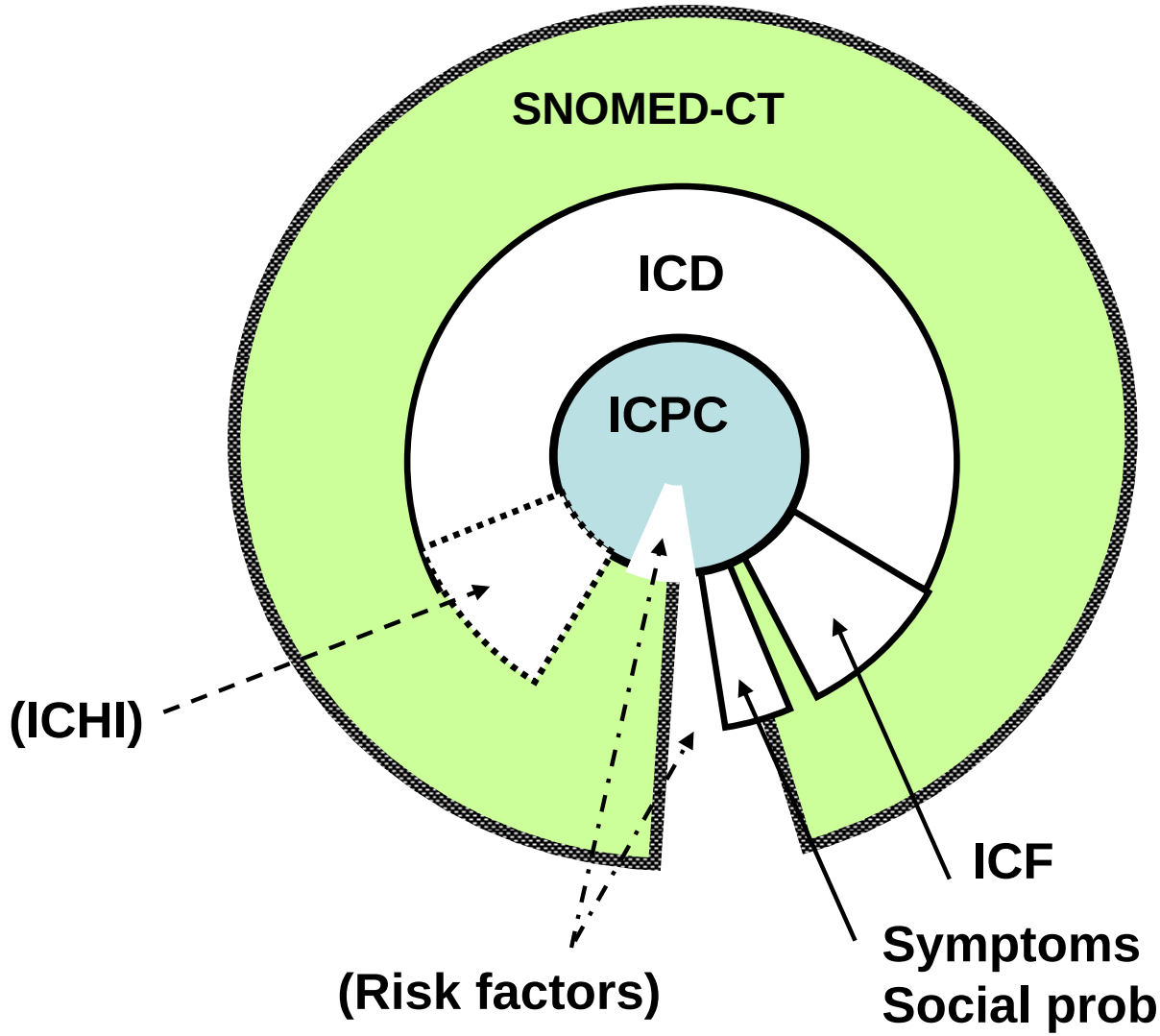
# why ICPC fits in the PCMH model

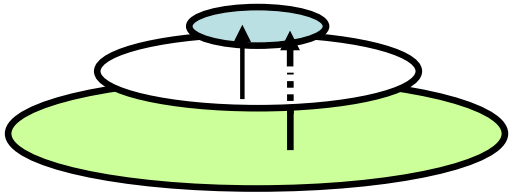
- Episode of care structure tracks process of care for problem over time
- Incorporates patient “voice” in Reason for encounter (RFE)
- Allows symptom diagnoses where appropriate
- Accommodates social problems (chapter Z)
- Limited granularity of basic code set – based upon prevalence of diagnosis
- NOT A TERMINOLOGY but mapped to standard terminologies, classifications
- Field tested - in use in over 20 countries worldwide



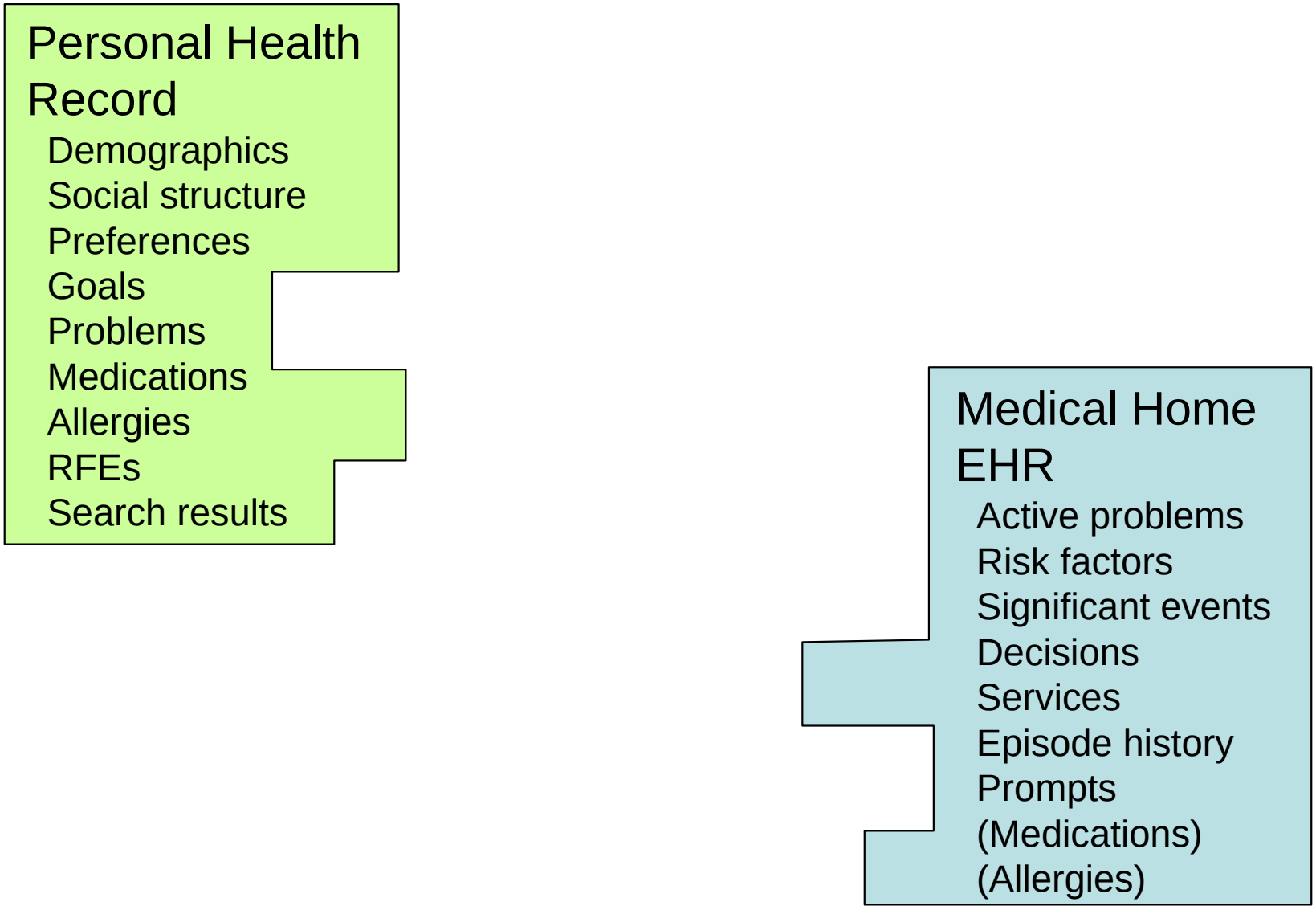

**Outputs- under local practice control.**

# Fitting existing classifications/terminologies together to support health IT for the PCMH.



[NOTE: ICPC provides the structure for data exchange and retrieval from more granular levels through mappings]




**Summing it up: PHR linking to EHR for data capture…**

Personal Health Record

- Demographics
- Social structure
- Preferences
- Goals
- Problems
- Medications
- Allergies
- RFEs
- Search results

Medical Home EHR

- Active problems
- Risk factors
- Significant events
- Decisions
- Services
- Episode history
- Prompts
- (Medications)
- (Allergies)

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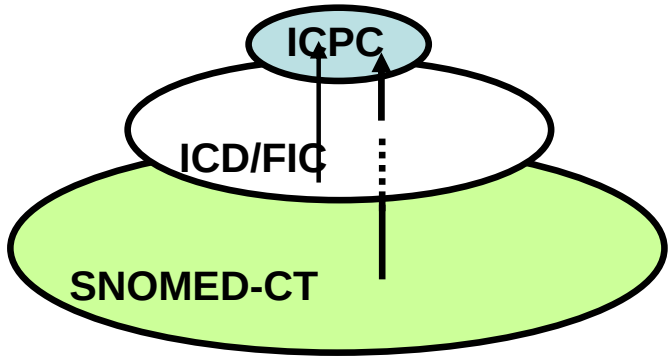


**Summing it up: PHR plus EHR plus data model to support the PCMH**

# Recommendations for PCMH

- **Link PHR to EHR**
- **Organize data into episodes**
- **Use simple and reliable IT building blocks**
  - ***ICPC for structure, mapped to ICD-SNOMED***
  - ***CCR as data exchange standard***
  - ***PDF Healthcare "envelopes"***
  - ***Concept of an OHDEP***
- **Build in interoperability, not vertical integration**
- **Enable local (practice) control of information**