Disclosure Information

I hereby declare that I have had business or personal interests in the following industrial enterprises since 1 September 2016:

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<thead>
<tr>
<th>Name of the enterprise / Nature of the interest</th>
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29th European Congress of Pathology

Pathology for Patient Care

2 – 6 September 2017, RAI Amsterdam, The Netherlands
Template based synoptic reporting improves oncological pathology reports regarding data content and clarity of data layout

Konrad Aumann, MD; Freiburg, Germany

10. Oktober 2017
Pathology Report

Challanges

- Macroscopy
- Microscopy
- Molecular Data
- Clinical Data

Classification Schemes

Pathology Report
Create a Pathology Report

Many possibilities
Successful Establishment of TBSR

Preliminary Work

Diagnosis:

**Neoplasia of the breast**
- Localization: Upper-outer quadrant, left (ICD-O-C50.4)
- Procedure: Mastectomy
- Histological Type: Invasive carcinoma, NST (ICD-O 8500/3)
- Grading: G2 (Elston-Ellis: 6/9, 3+2+1)

**Tumor Spread:**
- Number of tumor foci: 1
- Size: 2.2 cm
- Skin ulceration: No
- Angioinvasion: No
- Associated ductal carcinoma in situ, intermediate grade (Silverstein), maximal diameter: 2 cm, solid growth pattern

**Surgical Resection Margins:**
- Margins uninvolved by invasive and in-situ carcinoma
- Distances from indicated margins (invasive and in-situ):
  - Cranial: 1.5 cm
  - Caudal: 4.0 cm
  - Dorsal: 2.0 cm
  - Medial: 5.0 cm
  - Lateral: 2.0 cm

**Lymph Node Involvement:**
- Total number of lymph nodes examined: 15
- Number of lymph node metastasis: 0

**Additional Pathologic Findings:**
- Fibrocystic change and sclerosing adenosis

**Ancillary Studies:**
- Estrogen: positive, 75%, strong intensity
- Progesterone: positive, 60%, strong intensity
- Her2: negative (score 0)
- Ki-67: 12% positive nuclei

**UICC-Classification:** pT2, pN0 (0/15). L0. V0. Pn0. R-Status (local): R0
Different Format Types

Preliminary Work

• Recommendations of data content of pathology reports (e.g. Austin et al., Pathology 2009)

• Report layout and content of pathology reports (e.g. Haydu et al. Histopathology, 2010)

  ➔ The more standardized and structured the reports the more essential data were recorded

  ➔ up to 45% of mistakes in Pathology Diagnostics are due to inadequate reporting!!!
Is the novell report type advantageous compared to conventional ones?
Classification of Report Types

Resection Specimens: Prostate – Lung – Breast

Descriptive Reports (DR)
- continuous text
- no headings, no text structure

Structured Reports (SR)
- continuous text
- headings, text structure

Template Based Synoptic Reports (TBSR)
- Synopsis of Data
- Based on templates with headings
- Structured acquisition (database)
Classification of Report Types

Results

Lung
2002-2011
n=878

SR
47%

DR
28%

TBSR
25%

Prostate
2002-2010
n=1049

SR
32%

DR
39%

TBSR
29%

Breast
2003-2011
n=4181

SR
59%

DR
20%

TBSR
21%

Lung
2002-2011
n=878

DR
28%

SR
47%

TBSR
25%
Essential Data Score

ED defined by BDP, DGP, CAP, RCP

Lung (n=11):
- WHO-Entity, Grading, Tumor Size, Tumor Site, Tumor Spread (Pleura, extrapulmonary), Nodal Status, Resection Margins, Angioinvasion, Atelectasis, TNM

Breast (n=9):
- WHO-Entity, Grading (E/E), Tumor Size, HR-Status, Nodal Status, Additional Findings, Resection Margins, Angioinvasion, TNM

Prostate (n=11):
- WHO-Entity, Grading (Gleason), Tumor Spread (intra-/extra-prostatic, Seminal Vessels), Nodal Status, Surgical Margins, Angioinvasion (L/V/Pn), TNM

EDS: Amount of Essential Data per each Report

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Essential Data Score

Results - Prostate

DR
- 11 (3%)
- 4 (2%)
- 10 (10%)
- 9 (9%)
- 8 (12%)
- 7 (29%)

SR
- 6 (2%)
- 7 (4%)
- 8 (8%)
- 8 (8%)
- 9 (16%)
- 10 (26%)

TBSR
- 10 (3%)

P < 0.00001

Aumann, Kayser, Amann, Werner. Histopathology, 2011
Essential Data Score

Results - Lung

Aumann, Kayser, Amann, Werner. Lung Cancer, 2013
Essential Data Score

Results – Breast

P < 0.00001

Increased Essential Data in TBSR

Results

→ only by structuring the text (SR)
→ more over, by use a PIS-integrated template (TBSR)
Report Types and Time Economy

Time to detect all ED within a report (Breast)

- DR: 26 sec
- SR: 20 sec
- TBSR: 14 sec

P<0.0001

Summary

Advantages of Structured Reporting

Data Structure
- Research (finding cases)
- Cancer Register (transmission)

Template Based
- Increase of Essential Data
- Error Reduction (Quality Control)
- Clear Layout (text structure)

Economy of Time
- Pathologist (creation, Sign-out)
- Clinicians (finding data)
Thanks to

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- IMBS Freiburg: D. Hauschke, L. Bogatyreva

and you for your attention!